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Dixon, Keith

University of Canterbury

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**CALCULATIVE PRACTICES IN HIGHER EDUCATION: A RETROSPECTIVE
ANALYSIS OF CURRICULAR ACCOUNTING ABOUT LEARNING**

Keith Dixon

University of Canterbury, New Zealand

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Corresponding author:

Keith Dixon

Accounting and Information Systems Department

College of Business and Economics

University of Canterbury

Private Bag 4800

Christchurch 8140, New Zealand

keith.dixon@canterbury.ac.nz

+64 (0)3 364 2987 x3681

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CALCULATIVE PRACTICES IN HIGHER EDUCATION: A RETROSPECTIVE ANALYSIS OF CURRICULAR ACCOUNTING ABOUT LEARNING

Abstract

Purpose – Accounting has been shown to figure variously in New Higher Education. However, despite their infant precursors having been labelled *curricular accounting* (Theodossin, 1986), accounting researchers have overlooked a collection of calculative practices that has grown and spread internationally over the past two decades. The collection in question comprises credit points, levels of learning, level descriptors, learning outcomes, and related characteristics of student transcripts and diploma supplements, qualification frameworks and credit transfer systems. This paper extends coverage of the accounting literature to this particular variant of accounting.

Design/Methodology/Approach – The subject is addressed both in a technical way and in the broader context of accounting in organisations and society. The former University of New Zealand and its affiliate in Christchurch, New Zealand, and the University of Canterbury, also of that city, are used as a case study. The credit point system in place at the University of Canterbury in 2009 and its antecedents back to 1873 are analysed genealogically. Participant-observation and related means are used to collect data. These data are analysed using ideas of representational schemes, path-dependent changes and negotiated orders among parties who have been associated with the case institutions.

Findings – The analysis illuminates how and why learning (and teaching) at the University of Canterbury has come to be specified, recorded and controlled using curricular accounting; and why the accounting in use accords conceptually and, to an increasing degree, in practice to that in use across tertiary education in many countries. Among the social, economic and political issues that have spurred on this spread are international standards, quality and equivalence of tertiary education qualifications, study and learning; diversification of participation in tertiary education; changes to the levels and sources of funding tertiary education; and the many and varied ideas, etc. associated with New Higher Education. The spread has multifarious consequences for students, academics, alumni, universities and similar institutions, higher education, governments and others. There is much scope for further research.

Research limitations/ implications – The findings are derived from an accounting perspective and there is scope for adding other perspectives.

Practical Implications – A synopsis of curricular accounting and several of its facets are synthesised in this one paper, along with its history and with issues that are likely to condition further developments.

Originality Value – Curricular accounting is now in the accounting literature.

Keywords Higher education, Credit accumulation and transfer, Social and institutional accounting, Genealogical methods

Paper type Research paper

1. Introduction

The name *curricular accounting* was coined by Theodossin (1986) for the precursors of a collection of calculative practices that have come to be used in tertiary education. Among these practices, the most obvious feature is credit points, which serve to quantify volumes of learning entailed in courses[1] and qualifications. Other features, which serve to indicate qualities of learning, are levels of learning, level descriptors and related characteristics of credit and qualification frameworks; and learning outcomes, and the means to measure and record them. Applications of these features are evident in qualification regulations, course catalogues, credit transfer systems and diploma supplements, among other things.

Having extended across tertiary education in many countries, curricular accounting is an international phenomenon. This extension has occurred contemporaneously with several other strategic changes affecting tertiary education in these countries. Numbers of students have risen and participation rates are enormously greater than a generation or so ago. Huge diversification has occurred in disciplines, subjects, etc. Degree and other awards have broadened, and become more modular and accommodating of student choices, and so customisation in knowledge and skills coverage has occurred. There has been some national and international integration of, among other things, qualifications, making it more possible for students to gain a qualification through study at more than one institution, and so students have become more mobile. In several countries, domestic student fees have been introduced or significantly increased, and they, international student fees and government grants have been linked directly to the individual student enrolling for a course. As this paper will show, the contemporaneous of these changes is more than coincidence. Some reflect the aims that curricular accounting has been intended to achieve; some reflect the conditions of possibility that curricular accounting has brought about; and some may even have been constituted by curricular accounting.

Given that the practices of curricular accounting are part of the academic work environment of most contributors to accounting conferences and journals, it may seem surprising that very little has appeared on the subject in the accounting literature. This vacuum is addressed by this paper not merely in a technical way but in the broader context of accounting in organisations and society. Indeed, the paper adds to the overwhelming evidence already accumulated in this and rival journals to back up the observation and further speculation by Burchell, Clubb, Hopwood, Hughes and Nahapiet (1980) about accounting occupying an ever more significant position in the functioning of modern industrial (and now global) societies. This extension of accounting has been shown to be just as rampant in public and private organisations involved in public services. Much of the extension has accompanied the rhetoric and sponsorship of structural adjustment programmes and reforms to public governance and management associated with the ascendance of monetarism and non-interventionist policies by many governments (Kelsey, 1997; Pollitt and Bouckaert, 2004). Many of the accounting ideas in this extension have been applied, usually with ingenious adaptations (for an overview, see Broadbent and Guthrie, 2008). For the people associated with the changing organisations providing public services (e.g. medical staff, social workers, soldiers, public officials, politicians), this extension has entailed calculative practices spreading to realms of activity where once there were none or where they were quite different, and figuring in many interactions for the first time. Consequences of these altered circumstances have been numerous, becoming evident in, for example, the nature of services, how services and staff were organised and managed, the nature of work for the staff, the costs of services and how they were funded, changes to the benefits and costs of services to their recipients, and how services affected communities and societies (e.g., see Covalleski,

Dirsmith, and Michelman, 1993; Ezzamel, Robson, Stapleton and McLean, 2007; Goddard, 2004; Llewellyn, 1997, 1998a 1998b).

Higher education is increasingly accepted as being a (collection of) public service(s). However, this idea is still contested, particularly in the case of universities, which are its most prominent category of provider. With a long history pre-dating modern governments and the latter's involvement in social and welfare services and macroeconomic management, distinguishing universities as either public sector or private sector can be difficult. This difficulty is given added force by their participants' continuously championing the ideas that academics should be free to gather and disseminate knowledge without political and administrative interference, and that universities should be politically and administratively autonomous. Even if such circumstances ever existed in universities generally (which is doubtful, except in a few cases and only occasionally, according to Francis, 1997), then most universities are now very much dependent on both direct government grants, which were designed to facilitate massification, and on fees and other revenue ostensibly paid by students but who utilise so-called student loans and student allowances that derive from government[2]. Moreover, if one were to categorise them as private, then they would be among an increasing number of such organisations that have become involved in public services in the past decade or two (see Broadbent and Guthrie, 2008).

As providers of public services, universities and their academics and other participants have been caught up in the policies, programmes and reforms referred to above, and so affected by the aforementioned changes to public service administration (e.g., re New Zealand, see Boston, 1988, 1996; re UK, see Deem and Brehoney, 2005), for which some have coined the phrase, New Higher Education (see Trowler, 2001). Several areas of accounting about and within universities have helped constitute these changes or been changed to reflect other changes. Examples of these from New Zealand include annual reporting (Coy, Dixon, Buchanan and Tower, 1997), activity based management and costing (Coy and Goh, 1993; Robb, Shanahan and Lord, 1997) governing bodies and their use of accounting information (Dixon and Coy, 2007), performance measurement (Lord, Robb and Shanahan, 1998) and resource allocation and accountability (Coy and Pratt, 1998). While this list holds no surprises, curricular accounting is arguably a major omission. In mitigation, the various practices associated in this paper with curricular accounting do not usually form part of the remit of persons on university campuses whose daily specialist duties are identified with accounting (e.g. bursars, finance registrars, college or faculty divisional accountants, accounting academics).

These social and institutional transformations in public services generally and higher education in particular can be identified with propositions made by Burchell et al. (1980) about accounting practices enabling the emergence of organisational forms with many interdependencies that make them increasingly complex. The practices in question have made it possible for operating information to be relayed around the networks that characterise these organisational forms; for some people to measure and evaluate other people according to set priorities and expectations in relation to divisional and product performance; and for reports and such like to be distributed according to legal and regulatory requirements, administrative needs and market expectations. Burchell et al. call attention to patterns of organisational visibility being changed, which in turn affect organisational participants' perceptions of the problematic and the possible in wide ranging matters of managerial, organisational and, by inference, service practice, giving rise to changes in these. They also raise the possibility of new accounting practices emerging during these changes and then creating further possibilities for change. This paper puts curricular accounting forward as such a new practice; and analyses how it fits in with these propositions and their not inconsiderable consequences.

Specifically, while showing that some elements of curricular accounting date from well before the period of reforms, a proposition raised and discussed in this paper is that it has been during the reform period that curricular accounting has been synthesised into its present, quite coherent state, and that this is not mere coincidence.

As to method, inquiries into the details of curricular accounting were carried out through participant observation at the University of Canterbury (UC), which is located in Christchurch, the main centre of Canterbury Province[3] on the South Island of New Zealand. This included examining various policy, administrative and related documents of UC and related bodies. Following the suggestions of Burchell et al. (1980, see p. 23 especially), three questions on which the researcher focused were as follows:

- How does curricular accounting function officially at the University of Canterbury c. 2009?
- How has it emerged and developed at UC (1958-2009) and its forerunners, namely, Canterbury College (1873-1932) (hereafter “the College”), Canterbury University College (1933-1957) (hereafter “the University College”) and the University of New Zealand (UNZ) (1870-1960): who has been involved and what issues shaped it?
- How has it become intertwined with other aspects of life; and what consequences have arisen?

As to analysis of data, a genealogical approach has been taken, following some of the many studies that Burchell et al.’s (1980) call for social and political research inspired into accounting generally. Not only does this entail tracing the ancestry of the formal accounting practices and related arrangements being studied. It also entails elaborating the often disputed meanings that various protagonists have ascribed to the circumstances from which they emerged and to draw on the resulting illumination, for example, in participating in the arrangements, or being called on to extend or change them, or to consider how they might change in future (see Foucault, 1975, 1994; Kearins and Hooper, 2002; Miller and Napier, 1993).

As to the structure of the rest of the paper, the next section elaborates on ideas already mentioned and more, drawing on extant literature; and the one after provides more information about method. Subsequent to these sections, the main body of the paper is separated into sections that focus in turn on the three questions set out above. The conclusions at the end are accompanied by suggestions for further research.

2. Literature Review

The several ideas elaborated in this section comprise associations between the scope of accounting and processes associated with it; credit point systems and accounting; universities as socio-political organisations; and a particular perspective about how an extant social order comes about among organisational participants. These elaborations provide more context for the study, help explain the way it was conducted and how the analysis has been carried out, and facilitate discussion of the analysis in order to extend the literature. To analyse the possibility that what is being labelled as curricular accounting is indeed admissible as accounting requires appreciation of just how wide ranging accounting is in scope and process. To use instances in existing literature of where curricular accounting is linked with accounting provides ideas on which to build the analysis of curricular accounting as a practice. To analyse genealogically how and why curricular accounting has come about in universities is in some ways to analyse universities as organisations, but as there is already an extant literature in that area to draw on it is appropriate to acknowledge it before

incorporating it into the analysis. Designing the study, generating data and analysing data were done side-by-side, and two theories that were identified part way through and then used to inform subsequent activities were negotiated order and path-dependency theory, and so it is appropriate to outline these here before bringing them into the analysis.

Matters of scope, process and consequence of accounting become more contested every day. The view taken in this study of accounting being broad in scope and multifarious in process, and its application being wide in consequences is informed by various studies. Burchell et al. argue that “accounting developments now are seen as being increasingly associated not only with the management of financial resources but also with the creation of particular patterns of organizational visibility” (1980, p. 5). They also argue that “No longer seen as a mere assembly of calculative routines, [accounting] now functions as a cohesive and influential mechanism for economic and social management” (1980, p. 6). In Miller’s work, including with others (e.g. Miller, 1990; Miller and Napier, 1993; Miller and O’Leary, 1990) and work such as Neu (2000) on postcolonial views of colonial times, accounting is seen as encompassing numerous calculative practices and applications. It enables knowledge to be conveyed over great distances, and plays distributive and ideological roles. People involved in interactions from which accounting usages arise, or which these usages cause, derive various meanings from these interactions, ones not limited to rationality as portrayed in neo-classical economic rhetoric. All these aspects are dynamic, making accounting’s composition forever changing. In a different field, Dillard, Brown and Marshall vouch that “Management and accounting information systems are a particular kind of symbolic representation embodying expertise, facilitating hierarchical controls, and manifested as administrative technology that informs the purposeful action of organizations in the transformation process. These systems can foster sustaining processes, exploitative process, or some combination of both” (2005, p. 81).

The last sentence of this quote might be seen as a reference to consequences of the systems referred to. Kezar (2005) is useful in exploring further the question of what are consequences. A consequence might be used to refer to circumstances that come about in the short and long term and that may be attributed to or have associations with an occurrence, event or action, and that probably would not have resulted otherwise. These consequences have to do with efficiency, effectiveness and quality, to do with values, symbols, assumptions and representational schemes, for mechanisms of control (values, structures and processes), and for distributions of knowledge, influence and benefit. They affect social actors and groups directly and indirectly; some are major, others are incidental; they can be intended or anticipated, or they can be unintended or unforeseen. Consequences can be knock-on, so as to have a domino-effect, and so be far-reaching. The question, what are the consequences of X?, may be so open-ended that it is never possible to answer it fully, especially *a priori* but retrospectively too.

Theodossin (1986) is concerned with curricular accounting in England. He was familiar with modular/credit courses because of their popularity in his American homeland since the second half of the 19th century. There, they had been intended as “breaking the stranglehold of the [Oxbridge-inspired] classical curriculum” (p. 5) but had had the significant consequence of a “curricular free-for-all” (p. 5), which was eventually checked by introduction of “a system of ‘concentration and distribution’” (p. 7) involving majors and minors. He noted the emergence of these courses in some English universities and polytechnics from the 1960s and was discussing the credit system as it was developing in Britain in the 1970s and early 1980s in coining the name *curricular accounting*. However, that he used this name in 1986 is probably surprising because, although he refers to the “Credit Accumulation and Transfer Scheme (CATS[4])” (p. 39) as being under development,

this scheme was still some way away from the CATS that Trowler (1998) reported as being widely used in British higher education, most significantly that the arithmetic of the system's credit points did not materialise and gain widespread acceptance until the late 1980s and 1990s (Allen, 1995). That arithmetic facilitated student study being recorded not only by module, as Theodossin discusses, but also in a common currency of points and levels within and across higher education institutions; and accumulating the value of each person's study over an extended period, to provide what Adam (2001) refers to as "lifelong learning accounts" (p. 302). As Butler and Hope (2000) clarify, CATS now has many counterparts elsewhere, some based on a similar principle to CATS, of purporting to measure quanta of learning (e.g. the European Credit Transfer Scheme (ECTS) – see Adam, 2001; "ECTS user guide", 2009); and some, by contrast, based on alternative principles, such as measuring quanta of taught classes (e.g. the Student Credit Hour System used in the USA, which pre-dates CATS by at least several decades) (see also Bekhradnia, 2004; Theodossin, 1986).

In seeming to imply that Theodossin (1986) saw CATS merely as bookkeeping among higher education institutions and then taking issue with that, Raban (1990) elaborates on potential ramifications of this and schemes like it and on meanings that they can inspire, considering issues around valuation as well as accumulation and exchange, and noting that CATS has been "a powerful catalyst for change in higher education (in England)" (p. 26), for example, aiding "the (English) Government's attack on elitism and restrictive practices of the universities" (p. 26). Bekhradnia (2004), in also using the word *accounting*, provides further elaboration and discussion. Although these do not refer to curricular accounting as such, they are concerned with how curricular accounting or specific characteristics of it have consequences for higher education and those participating in it. These items are also incorporated in the discussion of the analysis.

Otherwise, despite a few decades during which curricular accounting ideas have spread far and wide, as evidenced by a significant volume of official literature, both at policy level (e.g. Bologna Working Group on Qualifications Frameworks, 2005; New Zealand Qualifications Authority (NZQA), 2008) and organisational level (e.g. Open University, 2005), scholarly literature is thin on the ground. It seems limited to either sharing experiences and improving method or technique at ground level: for example, Greatorex (2003) is concerned with best practice among educators when it comes to level descriptors; and Dillon, Reuben, Coats, and Hodgkinson (2007) relays how learning outcomes have been developed at one of the world's largest universities having regard to learning levels, and then linked to teaching and assessment. Or it is about making or implementing policy at national level: for example, Young (2008) draws on various jurisdictions (e.g. New Zealand, Scotland, South Africa) to suggest how to go about devising national qualifications frameworks.

Restrepo (2008)

The literature on universities as organisations and their place in society is extensive. In a review of English-language literature mainly from the USA and Britain, Patterson (1990) concludes that how theorists portray universities varies widely, in attempts to understand their idiosyncrasies and complexities. Universities as idiosyncratic and complex is an idea further reflected in studies (e.g. Bartell, 2003; Sporn, 1996) of what Ouchi (1980) dubs an organisation's mechanisms of mediation or control, and Cameron and Quinn (1999) dub an organisation's culture type. Berrio (2003) identifies four culture types with universities, namely, adhocracy, clan, hierarchy (also known as bureaucracy) and market; Clark (2000) proffers a fifth, namely, collegial entrepreneurialism, as tested by Ryan and Guthrie (in press). The studies bear out Ouchi's (1980) line of reasoning of all types being present in differing degrees in a particular organisation. Bourne and Ezzamel (1984) used Ouchi's control

cultures as part of their analysis of changes in England and Wales's National Health Service, changes that in retrospect were early throes of New Public Management in the provision by government of medical services in that jurisdiction. A similar application is used in this paper to characterise how things were done at various periods of the existence of UC and its forerunners, and how ways differed from one period to another.

Political control theories are also among those reviewed by Patterson (1990). Political control functions through knowledge structures and negotiation processes (Rahaman and Lawrence, 2001). These theories are usually associated with attempts to explain such conditions and behaviour as intermittent engagement in decision processes, fragmentation into interest groups with different goals and values, lobbying, stratagems, subterfuge, tactics, coalition forming, inconsistency, and competition for resources. However, political control is a constant in situations where conflicting values exist alongside exercising subjectivity, among other things, to distribute scarce resources (Hofstede, 1981). The inherent political nature of universities is apparent in times of crises of legitimacy for disciplines/subjects, departments and other units, whole universities or entire university systems, when disagreements about purposes, objectives and actions must be dealt with (for a New Zealand example, see Coy and Pratt, 1998). However, this nature is equally present at other times, when university participants exhibit cooperation, compromise, negotiation, bargaining and exchange, coalition forming, fluidity, diffusion of authority, decisions and actions, and coordination based on interaction, consensus and beliefs. Through these means, ambiguity of purposes, objectives and actions is dealt with in less conflictual and more collegial ways. Thus, political theories explain their more usual state, and so explain their general dynamic state, as encompassing *negotiated order*, founded on organisations being constructed socially through interactions of social actors, during which conflict arises sporadically.

The idea that an extant social order among organisational participants is the consequence of recent negotiations, which are themselves dependant on previous social orders and past negotiations among participants, is examined by Rahaman and Lawrence (2001). They attribute the idea to how participative mechanisms of social change were incorporated in the structure of democratic societies as they came to be known in various places during the 20th century. Negotiations in organisational settings became a central element in organising and controlling behaviour occurring in these settings. Interactions arise within an organisation's legally demarcated boundary and outside it. At any one time, the extant order is both internal and external to the organisation, giving rise to possibilities not only of mapping it as a representational logic or scheme (see Dillard et al., 2005) of activities, events, behaviour and values, but also of recognising the order as transient, on a trajectory from a previous negotiated order, through the present order and to a next order. Changes in order comprise the organisation's history, during which it is an arena of cooperation and conflict. The changes are of various magnitudes and derive from negotiations conducted among all the social actors and their groupings[5] albeit on unequal footings. How and why interactions transpire reflect both the interests that these social actors have across time in the organisation and other organisations and social units, and the differences in knowledge and influence of these actors, which will vary as a result of previous negotiations and the social order arising out of them. The structural contexts within which interactions occur are a product of the negotiated order, and so are as inconstant and transient as other aspects of the socially constructed organisations. So too are the rules and procedures of organisational functioning, and the representational scheme. While interactions and negotiations lead to potential inconstancy and transience, that they are carried out by persons whose involvement in the organisation is usually medium to long term gives rise to whatever transpires at particular moments having major lasting influence.

This last point resonates with *path dependence* theory for analysing change. According to Jacobs, Jones and Modell (2007), as changes are made, participants' perceptions of existing structures, processes and related matters condition the choices that are inherent in the changes that are made, and so past structures, processes and related matters have a major and lasting influence on those that follow from time to time. Thus, the new derives from and in part incorporates what went beforehand; and what went beforehand constrains how and why structures, processes and the like develop, and in doing so precludes other possible and probably more radical trajectories. Change analysed from a path dependence stance therefore tends to be more evolutionary than revolutionary; and it tends to be more muddled with mixes of the desired and the compromised, not to mention the intended and unintended. As Jacobs et al. point out, path dependent change is more likely to occur if existing structures, processes and related matters have a tendency to determine individual and collective expectations and adaptations. There is a greater likelihood of existing ones being retained than there is of completely new alternatives being put in their place, but the retained ones are likely to be in a modified form, so as to obtain the advantages sought from making changes in the first place (e.g. to reduce occurrences that are problematic). Modified existing forms will be especially preferred over new alternatives if the latter are matters of dispute and their success is uncertain (see also Greener, 2005; Kay, 2005).

To see these ideas and related ones in action, Jacobs et al. (2007) argue that a longitudinal perspective must be adopted: by carrying out a retrospective analysis of an extant social order one should be able to induce a pattern of path dependency of that order on previous orders. Such an analysis would examine how structures, processes and related matters evolve and influence each other over time. Expectations are that emergent alternatives will be incorporated into existing structures if they do not generate much conflict between actors with vested interests in various alternatives; and that emergent alternatives, if adopted effectively, become more consistent with established practices, and so manifest an apparent tendency of path dependent change.

3. Study and Report Method

In keeping with the argument just rehearsed from Jacobs et al. (2007) and with similar demands for longitudinal examinations of practices to appreciate the historical social conditions from which they have emerged, this study has indeed taken a longitudinal approach, as well as a genealogical one, to arrive at a retrospective analysis that is useful to informing the present and future. This concern for informing arose from occurrences at UC during 2007 to 2009, during which there was much debate, manoeuvring, conflict and negotiation among staff and representatives of students over credit points, learning outcomes and similar. Many participants expressed or displayed varying degrees of familiarity with these concepts and held various opinions about their meanings and significance. A proposal was debated by UC's various faculty and university level academic committees for common course sizes, which would mean the credit-point value of courses within the existing UC credit-point system would be standardised as 15 points or multiple of 15 points. The debate revealed various educational, financial and other ramifications and consequences attaching to the proposal, along with some anomalies in the system itself. Coincidentally, proposals were under consideration in one faculty for the Bachelor of Commerce (BCom.) to have a graduate profile comprised of learning outcomes and for learning outcomes to be compiled for courses that are predominantly populated by BCom. students. These proposals evoked a range of opinions about the efficacy of writing learning outcomes for courses and awards. During these debates little was said or written that might lead one to believe that many participants were cognizant of associations among credit points, levels of learning, learning outcomes,

teaching and assessment, despite what might be found in official pronouncements (e.g. UC, 2009b) and literature such as Dillon et al. (2007).

It was the varying degrees of familiarity, the variety of opinions and the lack of cognition with the associations just referred to that led the author to embark on the study. To carry out it out, he delved into the underpinnings of the extant UC points system, tracing its historical development within UC and becoming aware of the influence of systems used elsewhere in the past and presently; and of the ideas that might be called curricular accounting. As he was working at UC and had previously worked in other universities, using participant-observation data was instinctive. The author was also able to draw on previous experience of conducting research into university accounting, finance, accountability and governance. Initially, he set out to compose a rounded description of the extant system and compose a full story of how it had come about chronologically. He drew on various documentary sources of evidence, including the Calendars of UC and of its forerunners, published annually since 1873[6]; and the equivalents for UNZ. He examined specimens of student records held at UC and dating back to 1873. He perused other official documentary evidence in such forms as recorded proceedings of meetings of university and college committees; and reviews of the New Zealand university system carried out by agencies of the Government of New Zealand (hereafter “the Government”) (e.g. University Grants Committee (UGC) Review Committee, 1982). Conventional histories of UNZ (Parton, 1979) and to mark the fiftieth anniversary (1923) (Hight and Candy, 1927) and centennial (1973) of the founding of Canterbury College (Gardner, Beardsley and Carter, 1973) also proved valuable, not only for contextual background but also in prompting lines of inquiry. Editions of *Canta*, the newspaper of the Students’ Association, were also consulted.

Having completed these initial tasks and compiled a chronological story, the author carried out a further, genealogical analysis in order to understand present curricular accounting practices as an accumulation of various contingent turns of history. He sought out these turns, the details and accidents associated with how and why present practices developed; the conditions arising from time to time that made the changes possible, and the social interactions, negotiations and constrictions that were entailed among actors involved in or influencing UC practices. These turns were expected to shed light on how practices changed and could change again (Foucault, 1975, 1994). While genealogical methods are usually ascribed to Foucault, using his methods does not necessarily mean using his theories. Instead, *path dependence* and *negotiated order* theories are used in this study, as outlined above.

4. Analysis

The analysis is reported in three sections. The first deals with the question “How does curricular accounting function officially at UC c. 2009?”, distinguishing not only technical administrative practices, for purposes of definition, description and explanation, but also loose ends that are the source of continuing issues. After that, there are two sections that in different ways deal with the following questions: How has curricular accounting emerged and developed, including who has been involved and what issues have shaped it? How has curricular accounting become intertwined with other aspects of life; and what consequences have arisen?

4.1 Curricular Accounting at UC

How curricular accounting functions is bound up in UC awarding degrees and other qualifications to students, and providing them with programmes of study that lead to these awards. Presently, each award has a set of regulations in which a relationship between the award, programmes of study and courses is specified, noticeably in quantitative terms,

sometimes referred to as “the credit requirements of the qualification” (NZQA, 2007, p. 5). An example is the award of a BCom. with an endorsement in Accounting. The 2009 regulations reflect the *360 point degree* system, which came into operation at UC in 2006. To attain this award, whose standard full-time duration is three years, a student must complete successfully a minimum total of 360 credit points. At least 216 points must be from courses above *100-level* and at least 84 must comprise *300-level* courses[7]. Furthermore, as it is a commerce degree, at least 254 credit points must be from a schedule of specified commerce degree courses. And, because of the accounting endorsement, four *100-level* accounting courses (total points value = 72) and three *200-level* accounting courses (66 points) are specified as having to be completed; and the students must choose 56 points of *300-level* courses from a list of (seven) *300-level* accounting courses (i.e. four courses, as each is valued at 14 points) (UC, 2008a).

Further provisions include that students who have studied elsewhere may be granted up to a maximum of 120 credit points towards the BCom. degree based on the content of a successfully completed qualification, and up to a maximum of 224 credit points based on study that did not result in a completed qualification. And students who have completed courses towards certain other UC degrees may have the credit points of those courses transferred to their BCom. degree (UC, 2008a).

Other popular degrees at UC are the Bachelor of Arts (BA) and Bachelor of Science (BSc.). These also have a standard full-time duration of three years and they require the same numbers and distributions of points; and are subject to similar provisions as regards endorsements and credit transfer. Other undergraduate degrees and qualifications vary in their standard full-time duration. The numbers of points they require also vary but basically 120 points are required for each academic year’s duration (UC, 2008a). Postgraduate qualifications have not usually been designated in points but that was started to change; they have been designated in equivalent full-time students (EFTSs), as explained below.

As per note 1, *courses* in the above explanation have the particular meaning of the units into which study at UC is formally organised and for which credit is awarded. Thus, each undergraduate *course* has, among other things, a credit-point value, such as 11, 14, 18, 22 and 28 credit points; and a level of learning, such as *100-level* to *300-level* at bachelor qualification level[8]. A further metric attached officially to every course is its value expressed in a decimal of an equivalent full-time student (EFTS), such as 0.0917, 0.1167, 0.1500, 0.1833 and 0.2333. This is referred to in some official documents and on student records as the *course weight*. Postgraduate courses also have a course weight and a level of learning, such as *600-level* and *700-level*.

As to how credit values are formally allotted to courses in the *360 point degree* system, a full-time study year for a student, commonly referred to as an EFTS, is nominally 1,200 hours, and derives from 30 weeks of 40 hours study per week. An EFTS or 1,200 hours is represented in credit terms as 120 credit points, or as UC (2008b) expresses it “Nominally 1 point = 10 hours study or total learning hours”. Thus, students taking a course that is expected to engage each of them in a total of 180 hours of activities[9] over the period of the course can expect to gain 18 points for completing it successfully, as measured by the assessment[10]. The course weight of the course in question would be 0.1500 EFTS.

The levels at which courses are placed (e.g. *100-level*, *200-level*) correspond to a progression in complexity to be achieved by students as they move from courses at one level to the next. These levels are used at UC and in university qualifications generally throughout New Zealand. As elaborated in UC (2007), they bear a close relationship to levels that comprise a qualifications framework used in classifying qualifications on the New Zealand Register of

Quality Assured Qualifications. Known as the New Zealand National Qualifications Framework (see Figure 1), this allows comparison of learning at different types of institutions and on different types of courses in order to assess equivalence (or difference). It was devised in the NZQA, which is also guardian of the Register. As part of the framework, it has issued a series of level descriptors to distinguish the knowledge, skills and applications expected from students completing courses at a particular level, independent of the subject or content (see NZQA, 2009).

[INSERT FIGURE 1 ABOUT HERE]

As Figure 1 shows, the levels in New Zealand National Qualifications Framework are designated 1 to 10. At UC, bachelor degree courses at the *100-level*, *200-level* and *300-level* have some correspondence to framework levels 5, 6 and 7[11]. Postgraduate courses that count towards the first and second year of a two-year full-time master degree correspond to the framework levels 8 and 9; and PhD thesis courses correspond to level 10 in the framework[12].

Further circumstances are that students enrol on courses and this information is captured on their individual records, showing each individual course enrolled on, and its level and credit-point value. When a course is concluded, the students' grades are also entered on these records. The number of credit points accumulated from successful completion is also calculated and appears on the records. The records are used to determine whether a student has completed the requirements of an award and can graduate. They are also used to generate a transcript of what courses the student has studied and the grades obtained. This transcript and the qualification certificate can be shown by the student to interested parties, including other education institutions, employers and parents/family/whānau[13]. The student records are maintained at UC ad infinitum[14].

Students pay fees to UC to study each course, and UC calculates the fees for a course using the course weight (which since the present points system was introduced corresponds to the number of credit points), the discipline it is in and its qualification level (i.e. undergraduate and postgraduate) and whether the student is domestic (i.e. a New Zealand citizen or permanent resident) or international. The Tertiary Education Commission (TEC) on behalf of the Government makes an annual grant to UC, a significant part of which is comprised of the *student achievement component*. Dollar rates are specified annually for each EFTS in a range of funding categories into which every course has been allocated by discipline and by qualification level. The grant is the sum of the products of the number of domestic EFTSs that the TEC has agreed to fund in each funding category and the applicable dollar rates (see Funding Category Review Project Group, 2005; TEC, 2009a, 2009b). In contrast, international students pay fees at the international rate, reflecting the absence of a corresponding grant from governments outside New Zealand.

Domestic students obtain loans and allowances towards course fees, living costs and other expenses from the Government through the Ministry of Social Development's StudyLink service (see <http://www.studylink.govt.nz/>). They are classed as full-time provided the total of the course weights of their courses exceeds the "fulltime load" threshold of 0.8000 EFTS in a calendar year. The same threshold is used for other purposes, including the granting of student visas to foreigners. Domestic part-time students are eligible for assistance through StudyLink provided the total of the course weights of their courses exceeds the threshold of 0.2500 EFTS in a calendar year.

UC staff designing and staging courses are encouraged in collegial-type ways to achieve some internal consistency among learning objectives, student learning outcomes, the size and credit-point value of a course and the learning time available. They are also encouraged to

mix the formal (or class contact) and informal (or independent) learning that they design into courses, in order to foster capability among students to be independent, with the proportion of informal learning increasing from *100-level* to *300-level* and postgraduate courses. An important aspect they are urged to consider is how much assessment is included in courses and how much time various assessments might take, compared with the learning time available and the period over which a course is studied (UC, 2009b). Limits are advised for the number of major tests during a course (as distinct from a final examination or similar end-of-course assessment) according to a course's credit-point value. For example, advice is given that the number of major tests[15] in a *100-level* course of between 13 and 24 credit points should not exceed two (UC, 2008b). In considering the teacher workloads of courses at different levels, they are encouraged to assume these workloads will be relatively similar, even if actual contact hours for teachers reduce at higher levels. This is because it is thought to take more time to provide guidance and resources for students' independent study at higher levels, and so offset reductions in formal teaching at these levels (UC, 2008b). Besides, there is a significant school of thought that the student who has progressed to a higher level is more capable of studying than the student at a lower level, and so needs less direct guidance to make effective use of learning resources.

When UC staff make proposals for new and revised courses and awards, these have to pass through approval processes involving their academic peers, within UC and outside, including formal committees (e.g. faculty boards, UC's Academic Administration Committee, the Committee on University Academic Programmes (CUAP) of the New Zealand Vice-Chancellors' Committee (NZVCC)). Whether a proposal can be decided within UC or has to be approved by CUAP varies according to whether a single course is involved or an entire programme or qualification, and whether the proposal is for a new item or for a significant or minor revision to an existing one. These criteria also determine what information has to be provided in the documents that form part of the process. For example, the information supplied to propose a new course normally includes a prescription, most of which allude briefly to course content but may also mention learning outcomes and method; credit-point value, and so course weight; level (e.g. *100-level*); relationship to other courses, including pre-requisite study, co-requisite study and restricted study; predicted student numbers; teacher(s), formal hours of student-teacher contact, teaching/delivery method and availability of other resources; assessment provisions; plans for monitoring quality; and learning outcomes.

In practice, some portions of this information are of better quality and seem to be taken more seriously than other portions of it. For example, learning outcomes are often not in "good form". It is also possible to provide an analysis in hours of student activities to match the number of credit points but this is rare. Some of these shortcomings may be attributed to lack of knowledge on the part of the staff making proposals of what is wanted, and to lack of inclination on the part of staff considering proposals to question shortcomings in proposal documentation. However, it does appear that at least as significant are the many ambiguities and difficulties that arise in trying to compose level descriptors and learning outcomes (see Greatorex, 2003); behaviour among many participants intent on preserving or extending boundaries within which they operate as teachers and in other roles; and a lack of acceptance, even a resistance, on the part of some participants of the managerialist ideas of education, knowledge and learning that underlie the proposal document template (see Trowler, 2001). As Trowler (1998) analyses elsewhere, it is quite common for writers of proposals at the two universities that the author has worked in recently to enter words in some boxes to comply with completing the documents; and for readers of proposals not to pay as much attention to

these words as they do to others, other than to note that the words in these boxes do enough to comply with the proposal process.

To summarise, the question of how curricular accounting functions at UC has been addressed in this section by providing an outline of the 360 point degree system and inferring associations that might be said to constitute a representational scheme among such matters as specifying and awarding qualifications, designing and controlling learning and teaching, providing order and control among students and academics, and regulating policy and financial relations between UC and external governmental agencies but raising doubts about how serious such associations are in practice. These inferences are revisited in discussions in the following sections.

4.2 Turns in the Development of UC

This analysis report now moves onto the questions: How has curricular accounting emerged and developed, including who has been involved and what issues have shaped it? How has curricular accounting become intertwined with other aspects of life; and what consequences have arisen? The analysis follows the line of reasoning that elements of the present form and usage of curricular accounting at UC derive from when the College was established in the 1870s and the intervening years, as shaped by various issues and people. Its emergence and development reflect, and indeed has in some ways constituted, what has occurred educationally, economically, politically and socially within the institution and in the dynamics between institutional participants, individually and collectively, and the outside world. To contain the analysis report within manageable proportions, this section deals with two periods that were particularly significant: first, the formative years of the College; and second, 90 years later when, under the UC banner, credit points were being introduced for the first time. After that, the third section of the analysis report focuses on four significant issues that have shaped curricular accounting: standards and equivalence, growth and size of the institution, developments in funding, and public sector reform ideas.

4.2.1 Formative Years

When the College was established by prominent, usually wealthier, persons among the settlers to Canterbury Province, many hailing from southern England, curricular accounting as it later materialised at UC (see above) was not among practices with which they could have been familiar from universities there or elsewhere in Britain. Probably the only system remotely like it in the English speaking world at that time was the Student Credit hour System, which was still in its infancy in the USA (Heffernan, 1973; Rothblatt, 1991). In contrast, there were other basic ideas, structures, processes, practices and the like that they could have had experience of or otherwise been familiar with from Oxbridge, the ancient Scottish universities and elsewhere of similar antiquity (as reviewed by Francis, 1997), and which they did apply, as notions of path dependency would lead one to expect.

The original settlers (c. 1850) chose to name their town after Christ Church College at Oxford and their province for their patron, the Archbishop of Canterbury. The next generation established the College, which from makeshift beginnings had by the 1920s come to occupy a campus that was a significant feature of a growing English-inspired but typically Australasian frontier settlement[16]. This campus bore some resemblance to colleges at Oxford. Its brick buildings were covered with a façade of what might be mistaken for Cotswold stone and were replete with cloister-like arcades. They were populated by staff and students who up to the 1930s were obliged to wear caps and gowns reminiscent of Oxbridge. Indeed, links to Britain among the academic staff[17] were much more practical than dress, and so they were a continuing source of how the College was influenced by and path dependent on ideas and experiences from British universities that encompassed curriculum, assessment, textbooks

and other learning materials, and administrative and policy matters[18] (see Gardner et al., 1973; Hight and Candy, 1927).

The College was governed by a lay Board of Governors drawn from the aforementioned elite among the settlers, the Board also having responsibility for the Canterbury Museum, the Public Library, some secondary and primary schools, and outlying land endowed by the Province to generate revenue for the College. Their idea for a university was a mix of providing access to education, bringing about the educated population that would be important to the settlement's development and being a matter of provincial pride. This Board and its counterpart at the University of Otago also played a vital part in laying down the fundamentals of the tertiary education scheme of which the College became part. Ideas and experiences from Britain already in train included that education in the Colony should be provided institutionally and in three stages, primary, secondary and tertiary: schemes of education practiced by the indigenous peoples of New Zealand (now called Maori) did not figure in establishing this scheme. Out of various contested possibilities in the 1860s and 1870s for the organising of tertiary education, the two Boards in question established UNZ and then affiliated their two colleges to it, rather than operate as separate universities[19]. Familiar practices mentioned above in relation to the College would have been transmitted, extended and reinforced in the running of UNZ not only through representatives of the College's Board of Governors on the UNZ Senate and through College academics involved in courses but also the equivalent from the University of Otago, which had particular links to the ancient Scottish universities, as the Dunedin settlement derived from Scotland[20]. Subsequently, two similar colleges that were formed in Auckland (from 1883) (now the University of Auckland) and Wellington (from 1897) (now Victoria University of Wellington) affiliated to UNZ[21] (Gardner et al., 1973; Parton, 1979).

The formation of UNZ proved to be of great significance during the 90 years that the institution at Christchurch operated as the College / University College. UNZ acted as an umbrella organisation and quickly acquired various functions, as reflected in the carefully documented "Minutes of Proceedings of Senate and Boards of the University (of New Zealand)" (1871-). It set and processed common matriculation examinations across New Zealand (known after 1930 as entrance examinations). It established and regulated university awards, administered examinations leading to the awards and conferred the awards. It compiled a catalogue of subjects and courses. It assisted the development of university teaching including by making grants to affiliates. It awarded scholarships[22]. Meanwhile, activities and functions of the College and the other affiliates extended to, among other things, admitting students, maintaining records of students and courses, and preparing students for the UNZ examinations, which would enable them to obtain UNZ degrees and other awards. These functions mostly dovetailed with UNZ, examinations especially being central to the interrelations between UNZ and all its affiliates. However, mismatches and tensions arose intermittently, giving rise to issues of how UNZ might be reformed, how relations between it and its affiliates might be revised and, from as early as the 1910s, whether UNZ should be dissolved and separate universities established (Gardner et al., 1973; Hunter, Laby and von Zediltz, 1911; Parton, 1979).

The College in particular was geared initially to admitting aspiring and in-service school teachers, of which there was a shortage in the Province and Colony up to 1890. Then, in response to changing needs of the Colony for other professions, the College branched out into engineering, music, law and commerce, in tandem with moves by UNZ and its other affiliates to embrace a range of specialities, also including medicine and dentistry. For some time, the College's mixed gender student body was mainly comprised of the offspring of lesser settlers (e.g. minor professionals, trades people and small farmers)[23]. They usually needed to earn

a living while studying, and so were mostly part-time[24]. Furthermore, shortcomings in secondary education meant that students were not well prepared for tertiary study, as reflected in non-matriculated students being a majority until the 1890s[25] (Gardner et al., 1973; Hight and Candy, 1927; Parton, 1979).

The links that the College had with British universities were also present in the other affiliates and in UNZ[26]. They carried through into the form and curriculum of qualifications, how students were examined, how standards were discoursed and the way activities were arranged and represented. However, the College (and then University College), the other affiliates and UNZ gradually began taking on characters of their own and the increasingly accepted idea of university institutions having an enhanced role in the development of New Zealand society affected how they functioned. In the aftermath of World War II[27] in particular, they were expected to cope with the consequences for tertiary education of a growth in the population who were expecting to go to university, general expectations that universities would broaden their intake and be more responsive and accountable, and increased demand for well-educated persons across New Zealand and further afield (e.g. Britain, Australia) (Gardner et al., 1973; Parton, 1979; UGC Review Committee, 1982).

4.2.2 UC at Ilam

Ninety years or so on from the establishment of the College, by when UNZ had been dissolved and UC was a university in its own right[28], construction began of a second campus in Christchurch's western suburbs at Ilam to provide bigger and better teaching and learning, research and student accommodation facilities; and in the early 1970s UC was reunited on the Ilam campus[29]. This much larger site created the possibility of UC throwing off its previous character as an affiliated college of UNZ, with a provincial outlook and teaching responsibilities, to become a university with national responsibilities and an international outlook (Gardner et al., 1973). In view of this possibility, perhaps it is more than coincidence that the move to Ilam took place in tandem with the implementation at UC of the first system of curricular accounting in which credit points were incorporated.

Mostly referred to in official documents as the *new degree structure*, this system was a melding of the idea of credit points (i.e. a three-year, full-time bachelor degree usually required the completion of courses with a value of 108 points) and many features of the precursor UNZ systems. The most recent of these (1926-1974) was known as the *unit* system and required students to complete nine units in five or so subjects to obtain a three-year, full-time bachelor degree. The *new degree structure* in turn gave way after 2005 to the 360 point degree system outlined earlier. Details of these pre-2005 systems follow below, serving to clarify that, in implementing successive systems, many aspects of previous systems were retained, as path dependency ideas would lead one to expect. But first, to get a sense of what was going on in the university world of UC at that time, and so the social and political significance of (curricular) accounting, it is useful to reflect on what Vice-Chancellor Phillips had to say in promoting the *new degree structure*.

Phillips likened the courses that the *new degree structure* would facilitate to small bricks (Lego® springs to mind) compared with the large stone blocks (the façade of the original campus springs to mind) that were used as a metaphor for the extant whole *unit* courses ('Credit points', 1974). However, he rose above the comparison of the bricks and mortar of the two systems and spelt out eloquently the social significance of the change:

Much water has flown under bridges both social and academic in the last half century [during which the *unit* system prevailed]. From being almost on the fringes of society, universities have moved into a central position. They now provide in much larger

numbers and in wider variety the professional men and women upon whom we depend to lead our society forward into the twenty-first century.

And this is a society in ferment, more delicately articulated, with greater interdependence among its parts, more heavily reliant on expert skills and the power to innovate, conscious of serious economic problems and more concerned to better the physical and cultural environment and the lives of those who are handicapped by age, sex, race or simply an impoverished family background, as well as to uplift our poorer neighbours in the South Pacific.

The university will not and cannot stand aloof from these tides of change sweeping over a society which supports us and of which we are an integral part. In a large sense then this revision of our teaching arrangements is but one of our responses to the social challenge.

There is also the academic challenge implicit in the extraordinarily rapid growth of knowledge. Universities, Canterbury among them, have been major incendiaries in setting off this explosion. More knowledge has to be absorbed, refined, transmitted and – not least important – offered in new combinations. When we set out to study the environment, social work or regional planning – to take only three examples – we soon become acutely aware that new perspectives open and that regroupings of knowledge are imperative. All this lies very near the heart of the proposal to renew our degree structures. (Phillips quoted in ‘Credit points’, 1974, p. 5)

Reference is made above to gearing tertiary courses and qualifications to the development needs of New Zealand (e.g. teachers, engineers, lawyers, accountants) and to the standards of secondary school entrants and their circumstances (e.g. being able to study only part-time). These have been important recurring issues in tertiary education at national and institutional level. But so too has a desire for the standards of UNZ (and then UC) qualifications to be raised to and maintained at those of, initially, Britain and, subsequently, other selected countries (e.g. Australia, Canada, USA, EU), with implications and consequences for higher education provision (i.e. such matters as teaching, research, administration, facilities, governance, student quality and learning). Indeed, of the four issues on which the rest of the analysis focuses as having shaped curricular accounting, standards and equivalence is the earliest to arise. Thus, in the next section that issue is dealt with first, and in doing so, the bricks and mortar of the pre-2005 systems are elaborated.

4.3 Shapers of Curricular Accounting

This third section of the analysis report focuses in turn on four significant issues that have shaped curricular accounting: standards and equivalence, growth and size of the institution, developments in funding, and public sector reform ideas.

4.3.1 Standards and Equivalence

4.3.1.1 College and UNZ Structures, Processes and Personnel

The accounts of Gardner et al. (1973) and Parton (1979) indicate that in the first few decades, the concern about standards was reflected in several matters of these sorts. Standards were a significant reason for forming UNZ, rather than having a university in each province: Gordon (1946) describes it as a “Policemen University, whose main duty was to Keep up the Standard” (p. 271). They were also significant in the College choosing to recruit professors from leading British universities for much of its existence; and there were still issues about employing New Zealand graduates as professors c. 1920; and in UNZ remaining a non-teaching, examining institution throughout its existence, and decisions for it to conduct

colony/dominion-wide matriculation examinations, disaffiliate secondary schools and use examiners based in Britain for degree subjects[30]. Standards also figured in both sides of the various arguments that occurred during UNZ's existence about whether academics as distinct from laypersons should be involved in UNZ's governance: the issue was whether this involvement would raise or prejudice standards (see Francis, 1997; Gordon, 1946; Hunter et al., 1911), and it gave rise to the Board of Studies (in 1915) and then the Academic Board (in 1928), and partly contributed eventually to UNZ's dissolution. All these matters were part of the applications of British-derived basic ideas and contributed to a representational scheme that has to all intents and purposes endured, by virtue of UNZ and the College / University College, and then UC, having modified it from time to time to fit changed circumstances.

Regarding this last point, ways in which basic ideas have been applied since the 1870s to give rise to various versions of a generally consistent representational scheme include the following. The participants in the College, UNZ and its other affiliates and UC have included, among others academics, students, examiners, administrators, and academic and administrative governors. Students have studied towards qualifications under the tutelage of academics. Study has been separated into subjects, and then into examination papers and courses of lectures/study. Qualifications have been distinguished into levels (e.g. *bachelor, honours, master*); and bachelor degree qualifications have further distinguished into stage-based levels (e.g. *pass, advanced*). Graduates have used their learning and qualifications to enrich their lives, including to secure employment as teachers, in other professions[31] and other work to which they were suited, and/or to go on to further study. It seems that at various times most participants have found the particular version of the representational scheme that they experienced sufficient for going about their activities, and any who have not have been expected to work with it anyway. However, there have been those who have been prepared to dispute the status quo and campaign for change, and from time to time this activity along with external or internal social, economic, technological and political occurrences has given rise to modifications to how the basic ideas have been applied, and so to the aforementioned revisions and successive versions of the representational scheme.

Qualifications are a prime example of how a concern for standards has shaped change. Initially, UNZ conferred the degrees BA, BA with Honours (BA(Hons)) and Master of Arts (MA). Lectures and college examinations (or courses) leading to these were offered across all affiliates in conjunction with UNZ, and were tailored to the needs of school teachers. Then, as enrolments from teachers began to decline and the need in the Colony for other professions became apparent, so there was some diversification in that more bachelor and higher degrees[32] were designated by UNZ, for example, of science[33], laws, music and commerce (see Figure 2)[34], and corresponding courses were staged by affiliates (e.g. in 1890, the (National) School of Engineering was founded at the College).

[INSERT FIGURE 2 ABOUT HERE]

However, those championing these changes were concerned about more than providing alternative qualifications: they were also concerned about breadth of subjects in the BA being achieved at the expense of depth in a major subject. They argued that the BA was a mere *pass* degree[35] and of a lower standard than counterparts in Britain and elsewhere (Gardner et al., 1973). Thus, alongside the inauguration of these new more specialised degrees, changes were made to the BA itself, which continued as the most popular degree[36]. These changes illuminate how this concern for standards and equivalence contributed to the coming about of curricular accounting. Rooted in the idea of preparing teachers for the Colony's schools, the BA in the 19th century was a general degree, reminiscent it seems of the Scottish ordinary degree (see Theodossin, 1986), requiring and encouraging breadth of study across several

subjects, sciences as well as arts. To raise its standard c. 1880 and give rise to the so-called “Sale-Cook” degree[37], and then again c. 1890, UNZ revised its initial regulations by the simple expedient of adding a further subject requirement on each occasion. That is, a requirement to pass in four subjects was increased to five, and then to six: the number of examination papers rose from 8 to 10 and then 12.

Eventually and not without a long-running struggle, further criticisms (e.g. as levelled by Hunter et al. (1911) on behalf of an assortment of concerned academics) led to further changes by UNZ. Significantly, levels of examinations (and courses) were distinguished between *pass* and *advanced*, which was defined as two years study in a subject subsequent to *pass*. Students were permitted to choose among three patterns of subjects and levels. That is, they could take a broad six-subject degree, without any at advanced level; or a narrow four-subject degree, with two subjects at advanced level; or an intermediate five-subject degree, with one subject at advanced level. That this opportunity for greater depth at the expense of breadth had student support is reflected in statistics from 1917: 55% of students chose the four-subject option and 41% chose the five-subject one, so marking the *de facto* end of the six-subject *pass* degree.

Among proposals that UNZ rejected during this period were several for a nine-*unit* degree, the first of which was put forward in 1909 by Arnold Wall, the College’s professor of English (1898-1931) (Parton, 1979). As indicated earlier, the nine-unit proposal finally succeeded in 1926 in the case of the BA [38]. As to the originality of a degree specified in this way, degrees of the University of London comprised nine course units (Theodossin, 1986) but this was not initiated until the 1960s, some 40 years in arrears of UNZ.

As to the parameters of the *unit* system, a *unit* was defined as one year’s work in an approved subject. Each subject normally comprised a *First year unit* course, a *Second year unit* course and a *Third year unit* course[39]. Each *First year* course was a pre-requisite of the *Second year* course, etc. Each unit mostly had either two or three mostly British-set and marked UNZ examination papers that all had to be passed to complete the unit. The new BA regulations required students to complete nine *units* in five subjects over three years, or the part-time equivalent. At least one subject had to be at *Third year* and one other had to be at either *Second year* or *Third year*. The requirement for nine units meant passing between 18 and 27 UNZ examination papers in all. As examinations for each unit were sat at the end of the unit course, for a full-time student they would fall not only at the end of the second and third years, as previously, but also at the end of his/her first year.

Further changes followed not only in the use of the *unit* metric as a reference to subjects, examinations and courses, which as indicated already was definitive in degree structures of UNZ and then UC until 1974, but also to the structures of the other bachelor degrees (e.g. the nine-unit pattern was adopted for the BSc. from 1927, although it was later changed to eight[40]). It gave rise to the possibility of some standardisation across subjects and courses, and so its inauguration was an occasion at least formally when, having drifted apart by developing in their own ways, the majority of bachelor degrees were brought closer together to make them of a similar standard and equally demanding in what students had to attain to graduate[41]. As to how much scope there was for variation in what occurred in different subjects, at different years/levels of the same subject and in the same year/level of a subject at different affiliates, the continued subordination of teaching to common external examinations[42] and, by implication, common curricula, common textbooks and similar, all overseen in some detail by UNZ, made for a uniformity within subjects that was somewhat stifling of innovation (see Gordon, 1946). However, whether there was consistency between

subjects was very much a judgement call on the part of participants in UNZ's governance and examining: there were no formal learning outcomes that provided a basis of comparison.

By as early as the 1930s, continuing concern about academic standards extended to UNZ and its affiliates overcoming difficulties in keeping up with changes occurring internationally to what universities were about and the range of subjects and activities they encompassed. The stifling of innovation in the teaching of subjects, etc. was part of growing frustration with cumbersome, outmoded and paralysing structures and processes of UNZ; and led to reforms to the university system between the 1940s and 1960s. This included devolvement of responsibilities and functions of UNZ to the university colleges and its eventual formal dissolution[43]. Responsibility for the representational scheme and its underlying basic ideas moved during these reforms. Academics and governing bodies at the University College and its counterparts obtained some authority, albeit in dribs and drabs, to prescribe award regulations for degrees and diplomata[44], to lay down prescriptions for courses and to approve students' personal courses of study. They used this new authority to make various proposals, including for courses that would be peculiar to their colleges and for variations to qualification regulations affecting the number and level of units. These were only controversial[45] for as long as variations from existing practices were regarded as threats to standards of courses and qualifications but, once the principle of course and qualifications varying across university colleges was accepted, such proposals began being considered on their merits and became somewhat commonplace (Gardner et al., 1973; Parton, 1979)[46].

Coupled with the introduction by 1950 of internal examinations instead of external ones, the acceptance of new courses from teachers at the University College and UNZ's other constituent university colleges meant that teachers came nearer to covering that in which they were confident and considered most relevant. There had already been a move in the 1940s at the University College towards using tutorials and shifting the emphasis a little away from teaching and towards learning. This move away from teaching to the external examinations, including by lecturing on everything that it might be possible to include in the external examination, probably made that emphasis more practical. Between 1960 and 1980, a further trend in NZ universities generally was that marks from work assessed during courses could be included in the calculation of final grades, instead of the measurement of student attainment being solely reliant on final three-hour examinations (see UGC Review Committee, 1982). The new courses and variations in degree regulations changed qualifications, some becoming broader as to subjects and others specialising in a subject in more depth. However, *units* and stage-based *levels*[47] continued to be the way these were expressed formally in award regulations of UNZ and, from 1961, of UC (Gardner et al., 1973; Parton, 1979).

One further issue deserving of a mention is equivalence of study, and the related notion of credit transfer (see Toyne, 1979) between affiliated colleges and between UNZ and overseas universities. The very existence of UNZ and, over and above that, its examinations process and system of results and qualifications, meant that having to assess the equivalence of courses and qualifications within New Zealand for purposes of credit recognition and transfer did not arise in the way that has been the case since UC took over from UNZ in assessing students and conferring degrees. The use of the same examination paper established *de facto* norms for what was taught, how and using which textbooks and materials; and norms for what was learnt and how, although these were not expressed in learning outcomes and other present day means. Students going through their degrees were assessed ultimately using the same national external examinations each year in the various levels of each subject. Transfers of credit between UNZ degrees were permitted under regulations laid down by the UNZ

Senate. Student who moved between affiliates were allowed to continue with the same degrees and sit the further UNZ examinations as appropriate.

The equivalence issue, involving learning from outside New Zealand, was limited for many years to complete qualifications. As its statutes permitted, the UNZ Senate conferred degrees on people already possessing degrees from British and foreign universities[48]. Obtaining a UNZ degree made it easier for a new immigrant with an overseas degree to be accepted in teaching and other professions in the colony. Later, the foreign degree holders sought recognition that their degrees were at least equivalent to UNZ degrees in order to enter a university college and study for a UNZ higher degree. As the applications were few, it was easy take the facts of each application and let the UNZ Senate evaluate the application on merit. Then, credit for incomplete qualifications and individual courses emerged as a matter for consideration. By the 1950s, the number of applications warranted the process being delegated to a standing committee of UNZ's Academic Committee. In assessing credit, curricular accounting measures do not seem to have figured at all, if indeed they existed[49].

Once UNZ handed on its powers to confer degrees to UC and the other universities, these then took over the function of overseas credit recognition and transfer; and a new function arose of credit recognition and transfer among New Zealand universities. When other tertiary institutions in New Zealand were also given statutory authority to confer degrees and similar qualifications in the 1990s, so credit recognition and transfer extended to them.

4.3.1.2 UC and International Standards

As the quote above from Vice-Chancellor Phillips exemplifies, standards as in keeping up with international changes to what universities were about and the range of subjects and activities they encompassed continued as a high priority for UC c. 1970. Besides, increases in the range of recognised university subjects and disciplines were spurred by curriculum reform nationally in the 1960s and 1970s (see Gould, 1988). Meanwhile, Organisation for Economic Co-operation and Development (OECD) was exhorting governments in its member countries to pursue educational development and broader participation in order to advance technologically, and so develop economically (Theodossin, 1986). The consequences were more meta-qualifications (e.g. a BA or a BSc) and more sub-qualifications (e.g. endorsements and majors within these degrees), catering for and attracting more students and requiring and enabling financially more staff to be hired. Thus, the *new degree structure* facilitated and reflected changes to the regulations of the BA, BSc., BCom. and the many other undergraduate qualifications at UC and aimed to permit a wider range of study and smooth the progress of new endorsements, majors, subjects, departments and courses.

Regarding the introduction of the *new degree structure*, initially, a system, known as the *starred paper* system, was agreed upon at UC c. 1970 to allow undergraduate students in effect to combine two half *units* as part of the number of *units* (e.g. nine) specified for their degrees; and so to provide greater scope for cross-department/subject study (the University of Otago used a similar system). The *starred paper* system was only partly effective and proved difficult to administer, and so further discussion and negotiation took place leading to the *new degree structure* being introduced from 1975 (Committee for Educational Policy, 1973). The *new degree structure* entailed the qualifications in question being translated from requiring a specified number of units to requiring a specified number of credit points. Each existing unit was designated as comprising 12 credit points; and the nine-*unit* degrees (e.g. BA, BCom.) were deemed to comprise 108 credit points, and the eight-*unit* BSc. was deemed to comprise 96 points. There seems to have been no official definition of a point other than that just like a *unit*, one year's work in a subject amounted to 12 points. Alongside this, half-papers that

arose from the *starred paper* system, and other courses created by breaking up unit courses, gave rise to courses of 4, 6 and 8 points, as well as 12 points.

In adopting this points system, claims were made that the use of points would afford flexibility in the composition of courses of unit and sub-unit size and in the shape of degrees. Students would have greater freedom to choose courses that they would prefer to include in their qualifications. In particular, it would have a liberalising effect by allowing students associated with one faculty to study courses in other faculties, thus breaking down artificial divisions between subjects in different faculties (Turbott, 1974). By opening up these possibilities for student choice, there was some expectation that student enrolment patterns would extend to the new disciplines and subjects that were being equated with higher university standards, and so these new areas would be justifiable in terms of demand as well as educational prestige. Of course, such new subjects were not universally welcome among the academics, and in response to various criticisms and misgivings that sprang from this circumstance, the UC authorities undertook to improve student counselling and other processes in order to ensure personal courses of study through a degree made “academic good sense” (‘Credit points’, 1974, p. 25) and to prevent “a kind of ‘supermarket’ shopping for imagined ‘soft options’” (‘Credit points’, 1974, p. 25)[50]. As the new system provided a potential for overall student workloads to increase if lecturers delivering now smaller individual courses were to increase the material that they put into them compared with the quantum of material that was in original whole unit courses, students were encouraged “to watch the staff, and administration, very carefully” (Bishop, 1973, p. 4).

By 1990, courses had emerged across UC of 3, 4, 6, 8, 12 and 24 points. Moreover, 6 points was the more usual reference point as to what a standard-sized course comprised, compared with previously when the *unit* (\equiv 12 points) served this purpose. Courses were listed in each year’s Calendar with lecture hours, and laboratory and/or tutorial hours specified but there was no precise pattern to these hours in terms of proportionality to a course’s point value. Furthermore, the required points for a three-year bachelor degree had been changed to 102 (from either 96 or 108), and students were now required to have 48 points above *Stage I* (up from 36 as far as the BA and BCom. were concerned), including at least 12 at *Stage III*. Thus, although bachelor degrees were slightly smaller in volume, at least on paper, they entailed more study at higher levels than before, thus again raising their standard, as happened when the unit system had been introduced[51].

The *new degree structure* had mostly been about revising UC’s degrees and related undergraduate qualifications. It provided and facilitated choices of study and combinations of subjects among an increasingly large and less supplicant-like body of students. It made it easier than before to recognise credit among qualifications within UC. It contributed in other ways to having a system that was capable of providing order and control among not only increasing numbers of participants at UC but also academics with increasingly diverse knowledge and interests in teaching and research[52], and students comprising an increasingly diverse mix of New Zealand and overseas school leavers and people of varying ages and a range of workplace experiences. It brought about changes to activities, events, behaviour and values of UC participants, and so the representational scheme of UC.

In the 2000s, UC was able to claim that “the generic nature of our degrees derives from flexibility of pathways” (UC, 2003 p. 7) and it wanted not only to maintain that but also enhance it. Thus, thirty years on, it turned to the *360 point degree* system as a replacement for the *new degree structure* points system. Again there was much negotiation and discussion across UC before the approval process came to a resolution at UC Academic Board (UC, 2004, Minute 7) and the system was introduced in 2006. By contrast with the *new degree*

structure system, the *360 point degree* system was about relations between UC and external parties, both in New Zealand and that comprise the international network of tertiary education that staff at UC considered themselves to be part of. It also afforded UC opportunities to iron out some anomalies that had surfaced in the existing system.

Three reasons were used to justify the change. In order, they were to comply with NZQA requirements; to achieve consistency between credit points and course weights, while also simplifying the relationship and making it easier for students and staff to understand; and to facilitate transfer of credit (UC, 2003). These reasons were offered as a counter to several internal issues that arose during consideration of the proposed change, such as how much change would be entailed to the size and composition of existing courses, and to the quantity of student workload; and what would be the financial impact. As to their validity, NZQA had indeed adopted a 360 point degree system for specifying qualifications (e.g. degrees, certificates, diplomas), including postgraduate ones (see NZQA, 2003). But NZQA did not actually require (and had no formal powers to compel) UC to adopt such a system. That the UC system did not encompass postgraduate courses and qualifications was indicative of this lack of compulsion[53]. However, 360 point degree systems were in widespread use in other New Zealand universities and polytechnics, and so for UC to use such a system would make many functions easier for many people inside and outside UC.

Credit recognition and transfer is one such function, as the third reason given recognises. Making credit transfer easier within and among jurisdictions increases possibilities of qualification completion (and reduced the rate of non-completion); and increases access to higher degrees for holders of bachelor degrees. The *new degree structure* system, being to some extent peculiar to UC, certainly when it came to dealing with non-New Zealand universities, was cumbersome in this regard and required much complex translation of points (UC, 2003). In contrast, there seems to be some justification to UC's (2003) claim that what it called *the 120-points-per-year system* was an international standard, in that the system bears a close resemblance to CATS, which had been gaining ground in many universities in England, Scotland and the rest of Britain for the previous decade or so (but which seemingly has not been adopted by either Oxford or Cambridge). No reference was made to other international standards, such as the Student Credit hour System in widespread use in the USA among other places; nor to ECTS, which having been developed to aid international credit transfer within Europe (see Adam, 2001), has been gradually displacing individual country systems of credit accumulation and seems likely to challenge and perhaps replace CATS in Britain.

The desire for an international standard was justified on grounds that inward international credit transfer based on incomplete qualifications was on the increase (UC, 2003). No doubt the same has been true of inward credit transfer from within New Zealand and the 360 point degree system would also make this easier because many other institutions use the same system (see NZQA, 2008; UC, 2007). These increases can be attributed to widening participation and population mobility. Outward credit transfer was not referred to specifically by UC (2003), but this had also been increasing significantly, and so specifying UC study according to the 360 point degree system would likely make it easier for past UC students to obtain credit and obtain entry to higher degrees in Britain and in universities in other countries familiar with CATS[54].

A further issue relating to credit recognition and transfer and the usefulness of curricular accounting can be dealt with here. While the widespread adoption in various jurisdictions of international forms of such accounting (e.g. the 360 point degree system) has made some aspects easier, an important issue is how valid is the notion that credit points earned in each

and every jurisdiction are of the same quality. For example, how do 30 CATS points at 300-level in a particular subject or attaching to particular learning outcomes from the University of Durham (England) compare with 30 points at 300-level similarly specified from Canterbury Christ Church (England)[55], and are they the equivalent of a 30 point 300-level course with similar specifications at UC? This goes beyond the matter of equivalence to the issue of standards. The use of levels, points, learning outcomes and other features in ways that, on the surface at least, correspond to other institutions (e.g. ones whose qualifications appear on the New Zealand Register of Quality Assured Qualifications, ones using CATS) has made it easier to compare standards and to test the equivalence of qualifications. However, heed needs to be taken of a warning on this as raised by Bekhradnia (2004) in an international context: The increasing focus of mainstream CATS developments on the quest to define meaningful and commonly acceptable ‘outcomes’ for each course and module is, along with other bureaucratic structures, risking undermining the whole enterprise of learning recognition among institutions. Study of 30 points at 300-level at some institutions is going to be more equal than study of 30 points at 300-level at other institutions for the various reasons that distinguish some tertiary institutions, disciplines and academics from others.

Turning now to the second reason given above for the 360 point degree system, this was used not to justify the change of system so much as to justify changes that were introduced alongside the new system. UC (2003) points out that NZQA had laid down a policy that a minimum of 20% of the study for a bachelor degree should be at 300-level (see NZQA, 2007), whereas UC’s existing requirements for 12 points out of 102 points was below this. In implementing the new 360 point degree system, UC regulations of all three-year bachelor degrees were revised because of the NZQA requirement. Students were required to complete at least 84 points of 300-level courses (usually three 28-point courses). This raised the proportion of 300-level study in these UC degrees from 17% through the 20% NZQA minimum to 23% (i.e. $84 \text{ points} \div 360 \text{ points}$ (and $0.7000 \text{ EFTS} \div 3.0000 \text{ EFTSs}$). UC (2003) justified exceeding the minimum by claiming it would emphasise UC’s commitment to high quality degrees[56]. Be that as it may, formally at least, the change in points systems was accompanied by a further raising of the standard required to attain a bachelor degree.

The matters outlined in the previous paragraph are useful in showing the wide appeal of the claim that the new system would simplify the relationship between course weights and points and make it easier for students and staff to understand. Regarding the calculation of the proportion of a degree being at a certain level (e.g. at least 20% should be at 300-level), UC’s situation was not as one might suppose, that is that $12 \text{ points} \div 102 \text{ points} = 12\%$. The proportion of study had to be calculated in terms of student study hours, and UC’s measure of this were course weights, illuminating the circumstance that under the *new degree structure* system the student workload attaching to a point varied from level to level[57]. Thus, the appropriate calculation $0.5100 \text{ EFTS} \div 3.0000 \text{ EFTSs} = 17\%$. Under the 360 point degree system points values and course weights corresponded both within levels and across levels, in that “Nominally 1 point = 10 hours study or total learning hours” (UC, 2008b), no matter what the level, or put even more simply, 1 point at every level equates to a course weight of 0.00833 EFTS.

Making points values and course weights equivalent at all levels was achieved by courses within each level being re-assigned point values according to their existing course weights, and then points values at each level being re-calibrated such that courses at different levels but with the same course weights were assigned equivalent point values. That this was a rather messy business is exemplified in trying to explain it. Re-calibration resulted in a *100-level* course of six old points being reassigned a value of 18 new points; a *200-level* course of six old points being reassigned a value of 22 new points; and a *300-level* course of six old

points being reassigned a value of 28 new points. Furthermore, courses at *100-level* of other than 6 old points were reassigned a value of new points in the proportion of 18 new points being equivalent of 6 old points, and so on for 200- and 300-level courses, the proportions being 22 new to six old and 28 new to six old. For example, a 100-level course of three old points was reassigned a value of 9 new points; a 200-level course of three old points was reassigned a value of 11 new points; and a 300-level course of three old points was reassigned a value of 14 new points.

This issue of the relationship between points and course weights/EFTSs being complicated seems not to have affected many people when the *new degree structure* was introduced in 1975 because university funding then was administered very much within the UGC and student fees were flat and minimal. However, this changed in the early 1990s when the UGC was abolished and the far more participative or market-oriented EFTS funding system was introduced (Coy, Tower and Dixon, 1991), alongside variable and significantly higher course fees, the latter being differentiated by course weights. The introduction of the 360 point degree system seems to have reduced the complexity in question.

A further matter complicating the issue of implementation of the 360 degree points system, and complicating the further modifications analysed next, was that some of the people who had to be persuaded about the new system in order for it to pass through formal committees were sceptical of the basic idea that *points* can be translated into *work hours*: seemingly such an idea was regarded as “inappropriate for a university” (UC, 2003, p. 5), in which standards were superior to lesser institutions of tertiary education. Thus, proponents of the change tried to distance the new system from this idea, although, subsequently, the notion that “Nominally 1 point = 10 hours study or total learning hours” frequently appears in the discourse of official UC papers (e.g. see UC, 2008b), but as of August 2009 it was not actually in any formal statements in the UC Policy Library (UC, 2009d). The latter is probably because these statements must go through various academic committees and it is doubtful if the notion in question would receive a smooth passage.

As voiced by some of its supporters (and opponents) (see UC, 2004), the 360 point degree system gave rise to a new source of complexity. That is, it encompassed a perplexing array of point values of courses, ranging from 11 to 28[58], and so some of its supporters pressed in debates for a uniform number of points for all courses as part of the new system. However, the main proponents told these supporters that what was proposed was the “best solution available” (UC, 2004, p. 7) for the circumstances as they were in 2004, anticipating that including a uniform requirement in the proposal would risk it being defeated. By 2009, views had changed enough for this last issue to be revisited. As related earlier, the outcome is that during 2010 and 2011 the credit-point value of all UC undergraduate courses are expected to be converted to ones of a standard 15 points or of multiples of 15 points. Furthermore, undergraduate degree regulations are changing to accommodate this standardisation.

This latter consequence will see another raising of the formal standard of bachelor degrees. Of the 360 points required for a three-year degree, at least 90 points must be at 300-level and not more than 135 are permitted at 100-level. This raises the proportion of 200- and 300-level study in these UC degrees, the latter increasing from 23% as calculated above to 25%, while the minimum NZQA requirement remains at 20%. How this arose was that the arithmetic of the 15-point revision gave UC committees a choice between raising and lowering the proportions of 200- and 300-level points. Choosing to raise it seems to have been made mainly so as not to be seen as lowering standards for 2012 graduates compared with 2011 graduates. However, another issue occasionally alluded to is the situation now pertaining in England, where for 360-point bachelor degrees (commonly called bachelor degrees with

honours[59]) 90 of the points should be at Further and Higher Education Qualification Level 6 (\equiv 300-level) (see Quality Assurance Agency for Higher Education, 2008). Seemingly null and void by now are earlier arguments against the increased requirement of 300-level points to the effect that this lessens the breadth of degrees and so their liberality (see UC, 2004).

A further anomaly that the 15-point standardisation should resolve is that with courses between 2005 and 2010 having an array of points from 11 to 28, students completing 360 points over three years have often been completing either 108 or 126 points in their first year, between 106 and 132 in their second year, and between 102 and 128 in their third year. This has been at slight odds with the notion of a year of full-time study comprising 120 points. Under the new arrangements of 15-point courses, most students will now be able to study 120 points annually. Other ramifications are less public or shared but are occurring. They include that many 2008 courses need at least minor design, and in some cases major redesign or additional courses are required (e.g. two courses of 22 points each being replaced by three courses of 15 points each). All the changes to points, courses, course codes, award regulations and so on have to be included in the next iterations of the Calendar, in course catalogue systems and student record systems. The changes to points and courses are likely to alter the pattern of enrolments among departments and colleges, thus changing their EFTS counts, and so internal funding allocations. Indeed, it is possible that the volume of enrolment and EFTSs across the whole university may change, which would affect UC's government grant revenue and student fees. The number of assignments that students must complete and numbers of tests and examinations they must take to obtain a qualification will probably increase (e.g. for most BAs, the number of final examinations will have risen from less than 20 in the three years 2004 to 2006 to 24 in the three years 2010 to 2012), and this may affect students' workloads. However, whether actual workloads will correspond with those implied officially by the credit points associated with courses is uncertain. At present, students' actual workloads are not monitored formally but data available through the Australasian Survey of Student Engagement (2009) for UC and other universities in New Zealand and Australia suggests that the hours for which most students are studying are less than those signified by the credit points for which they are enrolled. Studies of student workloads on programmes in England specified in CATS points have produced similar findings (see Bekhradnia, 2009).

4.3.2 University Enlargement

Some association between, on the one hand, the need or inclination or choice to adopt accounting practices in particular and, on the other hand, the simplicity-complexity of organisational forms and networks in general is an idea raised in the introduction. In the context of universities, it seems reasonable to assume that this simplicity-complexity is associated with, among other things, the number of participants (including academic staff and student numbers), the diversity of their academic interests (e.g. the range of subjects) and activities (e.g. the number of qualifications available and number of courses staged, the effort put into pure and applied research) and the interdependencies among them. Two related matters are relaying operating information between participants, and fulfilling reporting requirements or expectations among participants and external parties. Curricular accounting is a technology with the potential to provide for order and facilitate control. As has already been alluded to in discussing standards and equivalence within a growing institution and across a growing number of institutions that have the potential to recognise each other, conditions conducive to the demand for and possibility of developing curricular accounting might be associated with growth in complexity like that experienced at UC.

In the previous subsection, concerns to raise standards and about equivalence were analysed, and links were made between these and how the number of different qualifications conferred

and number of separate courses staged under the auspices of UNZ and UC were affected upwardly. The institution that is now UC has come a long way since its students could only study towards to a BA, and then a BA(Hons) or an MA[60]; and when only a course or two was available in each of a narrow range of subjects, making barely a dozen courses in all. Indeed, when UC took over assessing courses free of UNZ, the number of courses taught and which it had to assess in its own right had still not reached 300. That number increased more than threefold by the time the *new degree structure* was implemented and had increased at least a further threefold by 2009. Data showing how significant this growth has been are summarised in charts in Figures 3 and 4[61]. Clear from these charts are that recent numbers dwarf those before the *new degree structure* was introduced, let alone the time that the *unit* system was introduced. The shape of the charts also reinforces the situation that significant rates of growth decade on decade are barely abating, despite the ever increasing denominator in their calculation.

[INSERT FIGURE 3 ABOUT HERE]

[INSERT FIGURE 4 ABOUT HERE]

The growth of qualifications is even more spectacular when one appreciates that the data used to construct the chart in Figure 3 does not reflect the variety of choices of majors and endorsements within meta-qualifications. As the range of recognised university subjects and disciplines increased in the past few decades, instead of creating separate meta-qualifications akin to a BA or a BSc., sub-qualifications within these meta-qualifications were established. For example, the 2009 BCom. has 13 endorsements and the 2009 BA has 34 majors.

Further to explanations above for significant growth in the number of courses, some growth has indeed been new courses in existing and new subjects, and so has entailed more lectures, assessment and so on. However, the number of courses also increased because, as per the earlier metaphor of Lego®, individual courses have been deliberately made smaller, to increase student choice and multi-disciplinary study within qualifications, to accommodate broadening staff interests and preferences, and to reflect changes to the academic calendar[62]. To illustrate the change in the standard course size in the past 80 or so years, *unit* courses were the equivalent of 40 points in present day terms, while the most common sized course under *the new degree structure* would have been 20 points, and the proposal agreed to in 2009 will mean that most courses from 2011 will be of 15 points. A further factor in the increase in course numbers and the other statistics charted in this subsection is that on 1 January 2007 UC absorbed qualifications, courses, students and staff of the Christchurch College of Education, which had been an entirely separate entity tracing back to 1877[63]. In Figures 3 to 6, the stacked bars for 2009 distinguish the portion of the UC statistics that can be attributed to the former College's activities.

Regarding the bare dozen courses of the 1870s, they were typical of an English institution, being in the main subjects of classics, English language and literature, other modern European languages, mathematics and natural philosophy, physical science, history, mental and moral philosophy and logic, jurisprudence and constitutional history. When the change of name from College to University College was made[64], the number of main subjects was 20, as demarcated by being in separate departments. UC inherited 23 main subjects/departments from the University College, and although these were double the size of their 1920s counterparts in terms of staff, they were still intimate internally and close knit across the budding UC (see Gardner et al. 1973 on this last point). When the *new degree structure* was implemented, their number had increased to 31 and they were much bigger, often with groups of staff allied to branches of the main subjects, showing that UC was no exception to Vice-Chancellor Phillips claim in promoting the *new degree structure* that universities had come to

teach a wider variety of subjects. The coincidence of this implementation with how big departments had grown, and that they were on two campuses and then one new larger one, may have had to do with the loss of personal interaction that was occurring across UC because of the growth and changed location. According to Gardiner et al. (1973), academics and students changed their allegiances from the institution and its breadth of subjects to their specialist qualifications and disciplines. This reflected similar events at the other large campus universities, as observed by UGC Review Committee (1982) and discussed by Francis (1997) in the context of theories underpinning the reforms that have been implemented in New Zealand since 1984 and that have had various effects on universities. The number of main subjects/departments at UC in 2009 was 36, covering about 150 branch subjects.

Participants are vital, economically as well as educationally and socially, to conferring qualifications, staging courses and operating departments. Turning to student participation first, when the College moved into buildings of its own that gave rise to the original campus in 1878, there were less than 100 students, who were part-time and mostly male and from the middle strata of the community. When the name was changed to University College, annual participation was just over 1,000 students, the majority of whom were still part-time and male, but they now came from the upper strata of the community as well as the middle one[65]. Growth occurred over the near 30 years that the University College existed, and so UC inherited a rate of participation of just over 3,000 students annually[66]. In promoting the *new degree structure*, Vice-Chancellor Phillips pointed out that universities had come to teach much larger numbers of people, by when the number annually at UC had reached around 7,500, reflecting widening of the background of university students, by socio-economic status, gender, age, place of domestic origin, ethnicity, race and nationality. Philips's expectations that these trends would continue are shown to have been well-founded: indeed, he probably underestimated the enlargement that has occurred already, giving rise to and in some senses being brought about because of the move to the bigger and still expanding site at Ilam and the abandonment of the original campus, although much of the growth has been driven by social, political and economic changes in New Zealand. Thus, 35 years on, in 2009, the number is approaching 20,000[67]. Data showing this significant growth of the student body and indicating that the rate of growth is not abating decade on decade are shown in the chart in Figure 5 (see note attaching to Figures 3 and 4).

[INSERT FIGURE 5 ABOUT HERE]

Reflecting the move referred to earlier from the University College having a provincial outlook to UC adopting an international outlook, there were significant changes in the composition of the student body over this most recent 30 years. Increases have occurred in the proportions (from < 5% to >15%) of international students and of students not born in New Zealand but who qualify as domestic students for having obtained permanent residency or citizenship through recent settlement. The former was helped not only by the lifting in the 1980s of restrictions on the number of foreign students that UC admitted[68] but also by active recruitment of foreign students, and has had consequences of the latter kind. This recruitment continues and is motivated both by a desire to internationalise and because of the additional potential fee revenue (see UC, 2009c). Meanwhile, mass participation in tertiary education by New Zealand's school leaver population, and increased numbers of "adult" students has been caused by combinations of government policies, and actions and expectations of employers, parents/whānau expectations, secondary school staff and young persons.

Academic staff numbers, full- and part-time, have increased in similar fashion to students and to courses. The complement of a few male academic professors that was attracted to the College in the first decade grew to 60 professors and lecturers by the time of the University College name change. They were still predominantly male but by then some had obtained at least their first degrees from UNZ. In the growth that occurred during the University College period, the complement expanded to 150[69] and was inherited by UC. By the time the *new degree structure* was implemented in the 1970s, the numbers had more than doubled to about 350; and it more than doubled again between the 1970s and 2000s, reaching nearly 800 by 2009, of who over 60% are male. Data showing the growth of the complement of academic staff and indicating the rate of growth decade on decade are shown in the chart in Figure 6 (see note attaching to Figures 3 to 5).

[INSERT FIGURE 6 ABOUT HERE]

Student and staff numbers at the College characterised its smallness, intimacy, close proximity and self-sufficiency. Where there was need or desire for collective control, it was possible to realise much of this control in the usual course of daily interaction, in a professional or clan[70] manner, without need of practices as complicated or as market control orientated as are entailed in present-day curricular accounting. There were so few courses being taught by so few people and studied by so few people that it would have been relatively straightforward for each academic to know how courses compared or contrasted in such basics as the amounts of study they entailed, their internal pass rates and grade distributions, and their external pass rates and grade distributions, assuming these were significant metrics of the times. The only need there was for any form of accounting was to administer and govern the College (and UNZ), using conventional bookkeeping and financial accounting suited to any small or medium-sized organisation.

Moreover, the College's relationship with UNZ was far and away more important than with any other body. The corresponding rolls of UNZ, or rather its affiliates, and the range of available qualifications and component courses were not large enough to warrant anyone devising a means (e.g. credit point metrics) for adding together copious combinations of courses from an abundance of possibilities[71], especially as the items that were credit bearing as far as UNZ qualifications were concerned were the UNZ examination results, not study assessed at affiliate level[72]. The geographical distance from one affiliated college to another warranted UNZ having a system but the one used seems to have been based on residential meetings of the Senate and its boards and committees. These were conducted at least annually over several days, as reflected in its "Minutes of Proceedings" (1871-); and could draw on records of each student's particulars, enrolments and achievements, which contained few numbers other than examination scores and gave rise to little calculation, apart from conversion of these scores into grades and counts of subjects passed to compare with qualification regulation requirements. In any case, curricular accounting as practised in the past 40 years would have been somewhat antithetical to the approach to control thought prudent by at least a majority of those who established, governed and had most influence in running UNZ and the College. That is, if as it appears, it facilitates flexibility for students in their choice of learning and it devolves curriculum choices to academic staff of various ranks.

As growth occurred at the University College and UNZ (and its other affiliates) between 1930 and 1957, arrangements were changed in order to cope, but these changed arrangements were along the lines of taking existing functions and tasks *en bloc*, and devolving them as smaller packages to new organisational units, rather than to devise large volume systems, including because computer systems were not yet available. Thus, for example, the University College formalised its departments more, and arranged the 20 or so into seven

major academic divisions (e.g. faculties, schools), whereas before, the College was divided into the School of Engineering and the College proper. The situation of students studying courses leading to qualifications that were associated mostly with particular departments and faculties was reinforced.

UNZ was party to these changes at affiliate level but in the 1930s at least was reluctant to change its structures and processes. These became ever more unsuited to the growth that they were having to handle, and so criticism of them for being outmoded and exasperating increased. The corollary was that the university colleges were growing big enough to be able to perform *en bloc* the functions and tasks of UNZ in respect of their geographical districts, their disciplines and their students. This created the conditions of possibility for the process that culminated in the dissolution of UNZ and the establishment of four universities instead. Indeed, between 1945 and 1961, the way for this change was paved from within UNZ by its last Chancellor, David Smith, aspects of the process of change having been alluded to already (e.g. the University College obtaining such powers as pronouncing course prescriptions and approving students' personal programmes of study, UGC and other bodies being established to perform national functions) (Gardner et al., 1973; Parton, 1979).

The devolution of university status instilled healthy competition, enthusiasm and so on in each university and opened the way for innovations at each separate from the others, not to mention divisions of universities innovating separately from other divisions of the same university. While UGC, its Curriculum Committee and the NZVCC provided means of consultation, comparison, benchmarking and the like, and so could have acted as dampening forces on innovation, much diversifying occurred, as well as much rivalry over status, doing research, attracting and teaching students, having the ear of the Government, winning resources, using new technologies and so on. Furthermore, having taken on a more international outlook, the new universities could look directly overseas for ideas, trends, advice and so on, rather than this be channelled through UNZ. For example, there was every possibility that enthusiasm in the OECD in the 1970s for qualifications comprising modular/credit courses (see Theodossin, 1986) would have influenced thinking at UC and the other universities.

These ideas and innovations further fuelled the growth of students, courses, etc. on top of the societal changes referred to above. It also provided a climate in which possibilities emerged of new technologies to handle student records, enrolments, articulation of awards and courses and the many other things that have come to rely on curricular accounting, as well as the need for these technologies. The advent of computing power, albeit in mainframe form generally suited to routine data gathering and processing, and generating paper-based reports (e.g. payrolls, debtor lists, T-accounts, and student transcripts) also helped. Thus, when UC implemented the *new degree structure* in 1975, a system of credit points based on one *unit* being designated as 12 points had already been in use across most of Victoria University of Wellington's programme for three years and in use for the BSc. programme at the University of Auckland for two years. Thereafter, the idea snowballed in each of these and at the other universities, as they tried to deal with the similar issues of growth, diversity, complexity and so on. The final two issues to shape curricular accounting also came into play, as dealt with next.

4.3.3 Tertiary Funding and Curricular Accounting

Tertiary funding refers to revenue of universities and university colleges and the allocation of resources among divisions and departments of these institutions. How this issue has shaped curricular accounting lies in the way that revenue of UC and resource allocation within UC has come to depend directly and indirectly on EFTSs, courses, course weights, course

enrolments according to qualification regulation requirements, credit points as used in these regulations, and teaching, learning, assessment and related requirements that credit points might infer and the resources entailed in satisfying these requirements.

The present systems of student fees and Government funding were touched on in analysing curricular accounting as presently practised at UC. In 2008, these sources accounted for over 25% and nearly 50% of UC revenue (UC, 2009a). Such preponderance has varied: until the late 1940s, endowment income, notably from the original grant of land by the Province[73], was the biggest revenue item of the College, and student fees regularly made up around 25% of revenue[74], normally just exceeding revenue from Government sources (re the New Zealand overall position by 1910, see Hunter et al., 1911; and in the period from the 1910s to the 1940s, see Parton, 1979). Starting from the aftermath of World War II, Governments took the view that education generally was vital to the Dominion/Realm and intervened much more vigorously in funding university provision and financing university facilities, and reducing the proportion of revenue that students had to contribute by way of fees.

Government grants became the largest component of revenue for the University College from about 1948, and the proportion of operating revenue that was Government grants went on to peak at about 90% in 1985 (UC, 1986), reflecting Governments' acceptance of education as being largely a public good. Successive Governments also financed (and continue to finance) development of the Ilam campus.

Despite this generally favourable disposition of Governments towards funding tertiary education expansion up to the 1980s, growth in student numbers tended to outstrip increases in Government funding, which itself has been affected by economic uncertainties (Gould, 1988). This was particularly so when it came to some new subjects and new capital, exemplified by the uncertainties over the development of the Ilam campus: the stop-start way in which it was developed were due in large part to rationing and deferments of capital grants in the 1950s and 1960s (Gardner, et al., 1973). In the 1980s, economic and political policies in New Zealand changed fundamentally, and this affected education generally as well as universities in particular[75] (see Boston, 1988). Its public goods nature was challenged and a notion ensued that the Government should fund proportionately less and students and other consumers of university services should contribute proportionately more. This has resulted in students' fees having increased several fold in the two decades since, albeit that they are presently "capped", and in the proportions of Government and student[76] contributions, as reported above, being so different from 1985.

Mechanisms by which Government funds have been distributed from Parliament and the Executive, and have reached the College, University College and UC have varied. The mechanisms have been applied to the separate but closely interrelated issues of arriving at a finite total of funding for each year, in order that the annual Government appropriation to the university or tertiary education sector was contained; and at sharing funding among the institutions in the sector in question. Prevalent in these mechanisms have been negotiations of a political, economic and educational nature; and funding and distribution formulae, which have been based on the numbers and profiles of staff, on areas of campuses and the buildings on them and, above all, on the numbers and profiles of students. For about a century up to 1990, the now defunct Department of Education was involved, but at least as significant were intermediary bodies, including, at various times, the Senate of UNZ, the Conference of University Colleges, UNZ Senate's University Grants Committee and the UGC. Between 1991 and 2003, the funding came to UC through only the newly established Ministry of Education, but from then another intermediary was involved in the form of the TEC[77] (Coy et al., 1991; Eisemon, 1984; Gardner et al., 1973; Gould, 1988; Parton, 1979).

The money paid over by the Government has taken various forms, starting with fixed statutory grants and then grants that were varied from one UNZ affiliate to another and from year to year according to their projected shortfalls of other revenue in meeting recognised annual expenditures (see note 69??). Between the 1940s and 1980s, quinquennial block grants were made towards fixed and variable operating expenditures according to disciplines, activities and related matters. During this era, the amounts of the block grants were primarily a matter of negotiations and similar of a political, economic and educational nature that were informed by inspection, anecdotal evidence and unsophisticated activity indicators, in which a simple count of EFTSs was prominent. In the middle of these negotiations was the UNZ Senate's University Grants Committee and then its successor, the UGC. In allocating resources, these had a not insignificant say in academic developments because of their financial implications, and they oversaw New Zealand's needs for university teaching and research (Eisemon, 1984; Francis, 1997; Gould, 1988; Parton, 1979).

Meanwhile, within the University College and then UC, resources were mostly allocated in physical terms (e.g. location, condition and size of accommodation, number of staff of various kinds and ranks). Allocations were largely done through political, economic and educational negotiations and similar. Divisional units tended to try and maintain or to increase physical resources. Although there were few official data (e.g. EFTSs, revenue, costs) in the "public" domain, metrics such as changes in student numbers were used to rationalise claims if they supported the political argument. There was a tendency for established divisions to want to hold onto students (e.g. by making qualification regulations quite restrictive in what courses students might choose), and for new divisions or staff with aspirations for new divisions to try to attract students (e.g. by creating attractive courses and pressing for flexibility and liberality in qualification regulations) (for an account of similar practices in another New Zealand university, see Coy and Pratt, 1998). With funding to universities being widely believed to be falling in real terms (inflation in the late 1980s was of the order of 20%), there was a certain amount of acrimonious conflict between universities and university divisions that were experiencing growth in student numbers and universities and university divisions that were experiencing steady state or falling student numbers, the latter often commanding significant shares of resources because of allocations of capital and staff made in previous periods of growth.

Since the 1990s, annual general grants have been made by Governments in return for planning to deliver and actually delivering student and research outputs, mostly up to limits agreed in advance. The grants were intended to finance capital[78] and undertake research, as well as to teach students. This most recent form has applied equally to universities, institutes of technology, polytechnics and colleges of (teacher) education, whereas the previous arrangements were specific to universities. Up to 2003, it also excluded an intermediary between the individual universities and the government ministry, and was more market-oriented, student demand driven, as most of the money shared was done so on the basis of the quantity and mix of EFTSs. Then two major modifications were made from 2003. The responsibilities of the Ministry of Education in regard to administering the funding system and related matters were vested instead in the TEC. Subsequently, the system was altered such that there is now a distinction between the Student Achievement Component, which comprises (the majority of) funding allocated using EFTSs, almost as before, and the *tertiary education organisation component*, which comprised funds allocated to finance new investments and funds allocated on the basis of research performance, the so-called PBRF (TEC, 2009b).

Under the original 1990s version of the system, UC's grants were calculated each year as the sum of the products of (i) the agreed EFTSs in each funding category and (ii) a proportion of

the standard cost amount per EFTS for each category[79]. The standard cost amounts in question were set each year in the Ministry of Education, the initial ones having been calculated from figures provided to it from each institution encompassed by the system[80]. To contain total grant amounts earned in this way, annual negotiations were conducted between UC and the Government to arrive at agreement of the maximum numbers of EFTSs that the Government would fund by funding category. How EFTSs were calculated in UC and reported to the Ministry became more specific as the 1990s progressed, including that each course was accorded a course weight. This was also significant in setting tuition fees, which came to be assessed for each separate course in which a student enrolled. Not only were fees differentiated according to the EFTS funding category that courses fell into (e.g. Science Faculty courses were priced higher than Arts Faculty courses) but also fees for courses in the same category were also set in proportion to their course weights. From 2004, course weights became part of the entry of all courses in the UC Calendar, alongside their point values. As indicated earlier, with the change to the *360 degree points system* from 2006, course weights and credit-point values of undergraduate courses were aligned (i.e. 1 point at every level equates to a course weight of 0.00833 EFTS); and as fees were aligned with course weights, so fees became aligned with points[81].

Meanwhile, within UC, resources continued for some years to be mostly allocated in physical terms and through political, economic and educational negotiations and similar, and divisional units continued to argue for their corner. However, during the 1990s, the EFTS funding system processes resulted in planned and actual EFTSs in each subject becoming much sought after matters of public record (see Coy et al., 1997). These data added to data that were already in use politically in these negotiations, making it possible to make rough calculations of revenues, costs, surpluses (deficits) and cross subsidies between subjects, departments and faculties, thus fuelling grievances about resource allocations and remuneration. Partly for these reasons and partly to improve interactive and diagnostic control across UC, a new structure and process were introduced in the early 2000s. Four colleges (now five since the College of Education merged with UC) and a school were instituted and given delegated budgets[82]. Although under delegated budgeting resource allocation at UC continues to feature politics and incrementalism, in negotiating divisional and sub-divisional allocations in financial and physical terms more has come to be made of EFTSs and other metrics, and of an item known as contribution margin. This is calculated as the percentage of a college's revenue that is sliced off to meet the cost of resources that are either centrally provided (e.g. student records, libraries) or whose use is shared among colleges (e.g. teaching accommodation), and that are not otherwise charged for internally (e.g. printing jobs, and office accommodation and other dedicated spaces are internally charged for, common areas of building and outdoors campus spaces are not).

The analysis in this section has made links among, on the one hand, the revenue of UC and resource allocation within UC and, on the other hand, the concepts and practicalities of EFTSs, courses and course weights. Student demand for courses, and so revenue of UC as it may be attributed to the different colleges, depends on student choices of courses. These accord with their choice of qualification, as per the qualification regulations, but since the new degree structure was implemented, as facilitated by curricular accounting, the possible choices have become much, much wider. Hence, curricular accounting not only having been shaped by funding but also curricular accounting having shaped revenue and internal resource allocation, as some of the staff who discussed to latest and now adopted proposal to standardise courses at 15 points or multiples thereof appreciated, and others suspected. However, whether the final claim made at the beginning of this section has much substance to it is not clear from what is written above. The claim was that credit points infer things about

the quantity and quality of learning, teaching, assessment and related aspects of courses, and so in the resources required to stage courses. This in turn would mean a broader link between using credit points and curricular accounting, and funding of UC and its constituent colleges, might infer and the resources entailed in satisfying these requirements. The reason for this lack of clarity is that curricular accounting seems not yet to have permeated into these areas, as was alluded to earlier in saying that, in practice, some portions of the information contained in qualification and course proposal documents are of better quality and seem to be taken more seriously than other portions of it, and in pointing out the rarity of providing an analysis in hours of student activities to match the number of credit points.

4.3.4 Philosophy about Public Services since 1984

It is well established that there was something close to a revolution in the 1980s in the ways that the New Zealand economy was structured, that government was conducted and that public services were provided. Macro-level changes, which attracted such labels as *Rogernomics*, *Structural Reforms* and *New Public Management* (as distinct from *old public administration*), were implemented under the rhetoric of increasing individual choice and business freedoms, providing incentives for enterprise, reducing restrictive practices in capital, labour and other markets, reducing dependency on the state, rolling back the state, getting Government out of the red, eradicating bureaucracy, reducing professional or producer capture, and increasing efficiency, effectiveness, responsiveness, transparency and accountability. They encompassed such changes as reduced fiscal policy style interventions (e.g. subsidies, tariffs, progressive taxes), greater reliance on monetary policy and delegation of same to the Reserve Bank, deregulation of industry, commerce and government, privatisation of state activities, separation of responsibilities for policy about and delivery of public services, distinctions between inputs, outputs and outcomes in public service delivery, improved autonomy for delivering bodies but greater accountability of their (new) chief executive officers and other managers to Government purchasers of services acting from and receiving plans and reports at a distance, use of business metrics such as return on investment, and charging users more and more users for public services (Boston, Martin, Pallot and Walsh, 1996; Halligan, 2007; Kelsey, 1997, Scott, 2001). These were expected to permeate to meso- and micro-levels of existing public sector bodies (e.g. see Jacobs, 1997), arguably changing the focus of analysis from public sector bodies to public services (Broadbent and Guthrie, 2008).

The universities were caught up in some of the changes during the 1980s (e.g. the roles, responsibilities and accountabilities of vice-chancellors were changed in similar ways to other chief executive officers). Then, in 1990 and 1991, among other things, the UGC and the Department of Education were abolished, and the Ministry of Education was established, the NZVCC assumed some of UGC's statutory duties and resources, the NZQA was established and the EFTS funding system implemented (see Patterson, 1996, for a blow by blow account from 1984 to 1990). UC Vice-Chancellor Brownlie opined that these *Learning for Life* educational reforms, coupled with pressure on resources, made 1991 a difficult year (UC, 1992). Further changes followed (see Blakeman and Boston, 2000; Boston, 1996; Coy and Pratt, 1998; Erenstrom, 1997; Francis, 1997), and were met with enthusiasm, acceptance, acquiescence, absorption, and active and passive resistance from staff and students on the various university campuses, UC in particular showing reluctance in accepting ideas of business management and reporting.

For example, the universities and other tertiary education institutions were expected and then statutorily required to publish annual reports that were far more comprehensive than hitherto as to objectives, targets, budgets, educational and financial performance, resources, assets,

liabilities and trends. UC was shown in a longitudinal study to have been the slowest of the universities to respond to Government, university participants and public demands for the information that these reports might make available, not catching up to the general standard set among the other universities until the late 1990s (see Coy and Dixon, 2004). A similar inference can be taken from how long it was after the EFTS funding system was introduced that UC introduced delegated budgeting, and so, at least according to the reforms philosophy, a greater degree of transparency and accountability across UC, not to mention behaviour predicated more on internal and external market forces. As indicated above, this form of budgeting and the related accounting by colleges as if they were separate business units was implemented in the early 2000s, and new effects are still rippling through. However, UC had no choices other than to meet obligations under the EFTS funding system to provide plans and reports to the Ministry of Education, and so receive vital grants; and other than to levy fees on students for courses. How curricular accounting figured in this is covered in the previous section.

The *new degree structure* had in any case provided incentives for departments to be responsive to demand for courses and qualifications within the campus. The EFTS funding system encouraged a similar attitude from UC as a whole in order to withstand potential competition for enrolments from the other universities and the larger polytechnics. The two were combined synergistically in curricular accounting, further enabling and incentivising staff to respond to student demand for new subjects, qualifications and courses, and enabling the handling of enrolments and conferment of qualifications, and much in between, from an increasing body of students, taking an ever increasing range of courses from more and more subjects, within an ever increasing range of qualifications that could be approved and incorporated into the catalogue relatively easily.

The items in this catalogue, including the individual courses, have increasingly taken on the characteristics of outputs, products and supermarket commodities, as specified in points, levels, course weights and fees and according to titles, prescriptions and, in some cases, learning outcomes. These characteristics fit with managerialist beliefs and values that “education, knowledge and learning are conceived as being atomistic, mechanistic and explicit in character” (Trowler, 2001, p. 185); and the analysis of what curricular accounting has facilitated illustrates its “considerable administrative advantage managerially” (Trowler, 2001, p. 190). Many of these same specifications have come to provide the basis of control of UC at a distance from the TEC and NZQA, which between them have the roles of providing policy advice to the Executive, providing the public and the Government with quality assurance of qualifications (including by scrutinising proposed qualifications) and institutions, funding (if not purchasing) university outputs produced in line with consumer demand (as distinct from supplied to supplicants in accordance with professorial priorities), evaluating universities to ensure that the Governments residual ownership interests are protected, and maintaining the New Zealand National Qualifications Framework. Indeed, the latter was developed partly in pursuit of neo-liberal economic aspirations (see Young, 2008).

Arguably, the changeover to the 360 degree points system at UC, albeit again in the wake of similar changes by other universities, not to mention other tertiary institutions, has increased the compatibility between the representational scheme that participants use at UC and means by which this control at a distance is exercised. It has also made easier inward and outward transactions in credit for study within New Zealand and, to some extent, internationally, as analysed above. Applying the rhetoric of the reforms, this has allowed UC to at least match its so-called competitors (i.e. other universities) in these matters, as well as in providing standard information about qualification requirements and the courses that make up the commodities (i.e. personal courses of study, and knowledge and skills bundled into

qualification packages) that the customers (i.e. the students, and the people who are employing or will employ the students because of the knowledge and skills they have been credited with) are purchasing.

However, this changeover when coupled with the National Qualifications Framework has also opened up what many UC staff see as a threat, not in terms of economic demand and market share particularly but in terms of educational standards. The Framework attracted a certain degree of suspicion at UC from the outset because of its application to tertiary education institutions other than universities and qualifications of these other institutions that have been designated as bachelor degrees and similar. The 360 points degree system means that credit and qualifications gained by students at many non-university degree-conferring institutions is expressed in the same metrics, and so reinforces an impression that might be conveyed by the Framework that this credit and these qualifications are equivalent to credit and qualifications from UC and other universities that UC recognises. This issue is part of the broader one alluded to earlier of how standards can vary within and between institutions, whether traditional pecking orders of institutions (e.g. Oxbridge versus the rest in the Commonwealth) are valid, whether institutions can be assessed and world league tables compiled (e.g. see Center for World-Class Universities, 2008), whether institutions that are accredited in particular subjects are superior in those subjects to ones that are not, and whether learning acquired formally and in traditional face-to-face modes is comparable with distance learning, supported open learning, and experiential learning acquired, say, in work situations (e.g. see Raban, 1990). It is related to the finding of Bekhradnia (2004) that aspiring to guarantees of automatic recognition of learning, using even well-established points systems, is a mirage.

As alluded to already, this issue of standards and equivalence is of longstanding at UC and its predecessors. It was of concern within UNZ, especially after the controversial practice of using external, British-set-and-marked examinations was ended. The examinations were conducted by the university colleges and differed among them but counted towards the same UNZ degree. During the 1960s, the issue came to be associated with accountability of UC and the other newly-established universities. According to Gardner et al. (1973), industry, commerce, public bodies and the public were asking about the relevance of university teaching and research, and of their contribution to the national economy, including how they compared with schools, teachers' colleges and technical institutes. They wanted to know how the functions and qualifications of these two sets of bodies were interrelated, and about the large amounts of public money being channelled into universities, about the efficiency of their processes, and about how devolved responsibility and authority were being exercised. Indeed, ideas that resulted in the National Qualifications Framework arose out of this, but for it to have come about, the further development seems to have been necessary, that is, of the acceptance of the fundamental neo-liberal principles that have underlain the reforms (e.g. the rights of individual student consumers vis-à-vis public institutions, the commoditisation of learning as another economic product, the use of metrics to measure services and performance, the use of metrics to value learning as a personal asset, the allocation of resources between purchasers and providers in financial forms based on performance metrics, and the use of metrics to set control boundaries for individual academic staff). As accounting ideas consistent with these principles extended throughout public services (see Broadbent and Guthrie, 2008), not to mention modern industrial societies, so did curricular accounting, including as it is (continuing on a path dependent trajectory) now at UC.

5. Conclusion

Curricular accounting is put forward in the introduction as a new accounting practice that has emerged during social and institutional transformations that have occurred in higher education alongside the same in public services. The possibility was raised that like other accounting practices, curricular accounting enables the emergence of organisational forms whose many interdependencies make them increasingly complex; and that directly and indirectly (e.g. through the organisational forms that it facilitates for universities), curricular accounting has had wide ranging societal consequences. In order to support these ideas, inquiries were carried out as related in the method section and the data gathered, processed and analysed during these inquiries are reported in the analysis section. The analysis report is wide ranging, and so a synthesis is appropriate. This is done by returning to the three questions derived from Burchell et al. (1980, see p. 23 especially) on which the researcher focused.

How does curricular accounting function officially at the University of Canterbury c. 2009?

The first subsection of the analysis deals with this question directly, but a fuller picture, as to its economic, social and political functioning, is obtained by reading the subsequent sections, because what has shaped curricular accounting (i.e. standards and equivalence, growth and size of the institution, developments in funding, and public sector reform ideas) are part and parcel of this functioning. For example, curricular accounting has been shown to have opened up possibilities for UC to attract more students, to maintain and show that it is maintaining qualification standards, to justify the funding it receives from students and Governments, and to compete in enterprising ways in national and international market places.

How has curricular accounting emerged and developed at UC and its forerunners, namely, the College, the University College and UNZ: who has been involved and what issues shaped it?

Having taken an analytical approach predicated on path-dependency, there is a risk that some post-development rationalisation was inevitable. However, having identified such basics as qualifications, courses, levels, student records and student fees from the 1870s (i.e. the College was not a village-like community where people shared learning informally and without institutional or socio-economic purpose), and how these evolved subsequently, the evidence seems clear enough that curricular accounting did emerge and develop at Canterbury, once ideas and experiences had been carried there by English (and Scottish) settlers and academic immigrants. The other people to have shaped it were the various participants at the institutions in question and who have comprised the UGC, NZVCC, NZQA and TEC, and many more, both in New Zealand and elsewhere. Among the issues to have shaped it were those around academics aspiring to high educational standards, comparable with and equivalent to some British and other highly regarded universities; and internal desires and external pressures for growth, and having a system suited to the size and diversity of the institution. Much development predated the reforms of the 1980s onwards but during the reform period curricular accounting was further synthesised into its present, quite coherent state, and this has not been mere coincidence. The further issues to have shaped it during this period were those around being in step with developments in funding based on student fees and EFTSs; and not so much maintaining institutional legitimacy, although that was a consideration when push came to shove when around 1990 there public sector reforms reached zealous proportions and new schemes ran rife, but for various participants to capitalise on some of the reform ideas. For example, academics and students interested in newer and/or less high-status subjects gained through professional capture and restrictive practices being reduced, leading to increased course choice and resources, the latter being

allocated more openly and in their favour via delegated budgeting. People whose background had once been a barrier to participating in university gained through access to UC continuing to increase with these reductions and availability of student loans and allowances. The four issues enumerated are closely related, as should be evident from the analysis report.

How has curricular accounting become intertwined with other aspects of life; and what consequences have arisen?

The examples just provided help answer this question. The calculative practices and other characteristics of curricular accounting are very much aspects of life for participants in the UC enterprise (e.g. academics, students, administrators, and academic and administrative governors, accreditors). They are one of the binding forces in the representational scheme they work to, at least as much as financial and management accounting, control and auditing. Students study towards qualifications specified in regulations that feature credit pints and levels. They do so following learning designs compiled and staged by academics, who loosely speaking work to learning outcomes and rules of assessment. Study is separated into knowledge and skills that relate to subjects, and then into courses specified as to points, which loosely translate to hours of student effort, and to level; and students are assessed on what they are supposed to have learnt. Qualifications are distinguished by levels (e.g. *bachelor, honours, master, doctor*); and bachelor degree qualifications are further distinguished into stage-based levels (e.g. *100-level*). Graduates use their learning and qualifications to enrich their lives, including to secure employment and/or to go on to further study in New Zealand and many other places. Furthermore, although UC has its idiosyncrasies, it is not so peculiar as to suppose that this particular scheme might not shed light on many other universities.

Most UC participants find the representational scheme sufficient for going about their activities, and many who do not acquiesce and work with it anyway. However, there are those who are prepared to dispute the status quo as not being good enough, or being flawed, or too right wing or not sustainable enough, etc., and campaign for change, and from time to time this activity when combined with internal or external social, economic, technological, political and other types of occurrences gives rise to modifications of how basic ideas incorporated in the representational scheme apply, and so to revisions and future versions of the representational scheme. For example, there is discomfort among UC academics over the connection or disconnection between learning, learning outcomes, levels, assessment, student workload and points. The CATS system, on which the 360 point degree system is based, is under challenge from the ECTS system, alongside the many other issues that the Bologna Process is raising (see Ministry of Education and New Zealand Qualifications Authority, 2008), not to mention issues arising from the Melbourne Model, which incorporates elements of Bologna (see Devlin, 2008) and debate about which is spilling across the Tasman Sea into New Zealand. The issue of equivalence of quality of qualifications, courses of study, assessment, learning, knowledge, skills and teaching among universities and between universities and other tertiary education institutions continues. Similarly, the notion of academic credit for work-based and other learning, formal and not-so-formal, outside of the ambit of tertiary education institutions (i.e. outside either on-campus or distance courses staged by said institutions) being given to people seeking qualifications is likely to arise. Again, notwithstanding UC having its idiosyncrasies, it is likely that similar issues pertain at many other universities.

As was argued in the literature review, consequences of curricular accounting, like many other things, can be so far-reaching and open-ended that it is impossible to identify all or even most of them. Much is included in the analysis report about the implementation of

curricular accounting taking calculative practices to areas where once there was none, and curricular accounting being used to fulfil various functions, both among UC participants and in transactions and relations outside UC. Curricular accounting has aided, abetted and made possible a variety of changes to not only ways that, among other things, the institution and academic activities are performed, controlled and governed but also how, among other things, university participation, learning, knowledge, skills, qualifications and courses are regarded by students, academics and other staff, employers and similar parties interested in graduates, and parties with other interests in universities, tertiary education and education generally.

Finally, on the matter of further research, the last sentence or two at the end of the previous three paragraphs infer things that it would be useful to know but that have not been studied from either accounting standpoints or standpoints that entail multidisciplinary studies involving accounting. There seem many possibilities for functional, interpretative and critical studies.

Notes

1 The word *courses* has the particular meaning throughout this paper of units or modules into which study at a tertiary education institution is formally organised and the smallest piece of learning for which credit is formally awarded.

2 Although there is some variety in schemes of the different countries that have adopted these measures in an era of user pays and markets, student loans tend to be only repayable out of earnings of the borrowers once they exceed a certain taxable income, and so the loans are more akin to a deferred income tax. Student allowances are grants, rather than loans, and only certain students are eligible for most of them, usually those whose parental and personal incomes are below a means-tested threshold.

3 Although the Province lasted as a polity only from 1853 to 1876, its identity as a region continues, including through descriptions on maps, newspapers titles, sports teams, various brands and similar.

4 The CATS acronym is also used to indicate *credit accumulation and transfer system* but the words *system* and *scheme* do not seem to mean different things.

5 Examples of groupings in universities would be departments that make up hierarchies and coalitions of academics with shared beliefs and approaches towards learning and teaching.

6 Calendars have been recognised as the authoritative source of course regulations since the 1950s as far as the University College and UC are concerned (e.g. see Parton, 1979) but even before then they had much official standing, including that they included extracts of UNZ regulations as well as matters pertinent to the College/University College. Analysed in detail were Calendars for 1873, 1879, 1890 through to 2000 at 10-year intervals, 2005 and 2009. Those for some intervening years were consulted for particular changes. Although their format has been changed over the years, and all manner of information has been included at various times, all the Calendars included formal details of awards and courses, among other ever-present content.

7 The arithmetic is such that as a minimum, a student must acquire 84 points at *300-level*, 132 points at *200-level* and 144 points at *100-level*. If higher numbers of points are acquired at the upper levels, these can be substituted for points at a lower level.

8 The naming of undergraduate levels in this fashion officially at UC and elsewhere in New Zealand is relatively recent. Unofficial usage of this naming scheme goes back to the mid-1970s and derives from computerisation of the course catalogue and student records. Courses at Stage I or First Year were assigned alphanumeric codes that included numbers between 100 and 199; courses at Stage II or Second Year were assigned codes that include numbers between 200 and 299; and courses at Stage III or Third Year were assigned codes that include numbers between 300 and 399. This coding scheme continues today. Codes from 400 upwards were used for postgraduate courses and other purposes. How these codes are applied today is outlined in note 11.

9 The activities in question would vary according to discipline and level but could include such items as formal teaching contact, informal contact, Web-based learning, practicals, lab-work, placements and tutorials, research, teacher-directed and self-directed study and assessment, including time taken for examinations (UC, 2008b).

10 As indicated later, the notion of 1 point representing 10 study hours was contentious when the system was introduced and is still not incorporated in official UC policies (see UC, 2009d).

11 The wording of this sentence reflects a view among many at UC that universities are independent of government and their courses and qualifications not formally part of this official framework.

12 How these postgraduate courses are coded is not as schematic as undergraduate courses for bachelor degree are. PhD thesis courses are usually coded from 700 to 799, and are sometimes referred to as doctoral level. Master degree thesis courses, usually of one year's duration and done in the second year of a full-time degree, are usually coded from 600 to 699, and are sometimes referred to as masters level. First-year master degree courses (which can also be used to attain a postgraduate-level, one-year bachelor degree with honours) are coded in some subjects from 400 to 499 but in other subjects from 600 to 699, and are sometimes referred to as masters level and sometimes as honours level. Codes between 500 and 599 are also used but for various purposes that need not be gone into here.

13 Whānau is a Māori-language word for extended family that is increasingly attaining the status of a word in New Zealand English.

14 During the UNZ period, the College / University College maintained these for students identified as Canterbury students (and subsequently Canterbury alumni) even though like all other students they were studying for an award that UNZ would confer. Until the 1910s, the records comprised ledger style volumes, which as an incidental to this study are now housed among UC's official archives. A sort of double entry was used, such that each student appears among the lists of student names (including whether matriculated, courses of subject lectures attended and examination results), which are divided into sections by first letter of surnames; and among the record for each subject, which comprises the roll of the students who attended the series of lectures in a subject in a term. Cross referencing was achieved in these ledgers by allotting to each course a three-digit code, which in the by-student records is appended to the name of each student who took the course.

The ledgers in question were superseded in the 1910s by card records. These were in use until the 1980s and are still part of UC's student records and have to be referred to regularly. There is one card for each student who was enrolled between 1910 and 1980. The cards up to the 1950s contain handwritten details of name, initial year of enrolment, matriculation, courses taken over the years, College examination results, UNZ examination results and awards conferred. These were superseded by typewritten ones in the 1960s, and then in the late 1960s, the first use of computer-printed records started. However, these comprised merely a printout of end of year results by student, one copy of which was cut and pasted, literally, onto each applicable student's record card. In the 1980s, the cards were superseded by records stored in a computer database, and so today electronic and paper transcripts can be generated, as necessary.

15 A major test is defined as a test that counts for greater than 20% of the final mark for a course.

16 The College also constructed agricultural science facilities at Lincoln but in 1896 these were separated from the College and reconstituted as Canterbury Agricultural College. This then became another affiliate of UNZ. It is now Lincoln University, although between the dissolution of UNZ in 1961 and 1990, it was a constituent college of UC but retained an unusual amount of autonomy.

17 For staff names from 1873 to 1973, see (Gardner et al., 1973); and for short biographies of those College staff prominent in UNZ, see Parton (1979).

18 Particularly before World War I, the College's academic staff were recruited deliberately from within Britain, although persuading academics of the desired quality to come to New Zealand was not easy. They had mostly gained degrees from Oxbridge (the proportion of staff that held Oxbridge degrees among their retinue of qualifications peaked at over 60% about 1910), although some other British institutions were represented as well (e.g. Imperial College, University of Glasgow). Although this dominance abated after World War I, as late as the 1950s, recruitment for some professorial and other senior posts included setting up a committee in Britain to shortlist and interview candidates, alongside similar efforts in New Zealand. Use was made of the Universities' Bureau of the British Empire, the forerunner of the Association of Commonwealth Universities (Gardner et al., 1973).

19 The college in Dunedin kept the name "University of Otago".

20 If the idea of UNZ, its functions and its relations with affiliates was inspired by any British institution, it was the University of London, rather than Oxbridge (Gardner et al., 1973).

21 Some secondary schools that offered “university classes” were permitted to affiliate at first but this possibility ceased in 1885, after when only tertiary institutions offering courses leading to UNZ qualifications were affiliated.

22 The awarding of scholarships predated the establishment of university classes in New Zealand. They had been available during the 1860s to an intellectually gifted few in the colony in order that they could pursue university study in Britain.

23 Even after the College was established, most Board members and other wealthier settlers continued to send their sons to universities in Britain (Gardner et al., 1973), demonstrating their belief in the superiority of these universities and suggesting that they would have been keen to mimic them in how the College (and UNZ) was run. This practice was impeded by World War I and thereafter the College became more accepted.

24 The first full-time student did not enrol until 1879 (Gardner et al., 1973). This preponderance of part-time students applied in New Zealand as a whole. An early policy objective of the New Zealand Parliament was that a university degree should be accessible to all, and to achieve this exemption from lectures, evening classes, Saturday classes and other means to allow part-time study were common from the early days (Hunter et al., 1911). Even by 1925, well over half the total of students at the College and the other affiliates were part-time, as noted by the 1925 Royal Commission, which reported widespread occurrences of late afternoon and evening lectures at the colleges in question to accommodate part-time attendance (Parton, 1979).

25 Even by 1930 some 30% of students attended lectures at the College without (or before) having matriculated, and so were ineligible to sit annual College examinations that followed these lectures.

26 Particularly influential, according to Gardner et al. (1973), was Macmillan Brown, one of the College’s three foundation professors (1874-1895), and a member of UNZ Senate 1879-1935, including as vice-chancellor 1916-23 and chancellor 1923-35. A graduate of Glasgow and Oxford, at his inaugural address to members of the College, he held up the Scottish and German universities as models for New Zealand to follow, rather than the English ones.

27 Use of the two world wars as markers of time is not just a matter of convenience. Both wars and their aftermaths had implications for the institution, and its staff, students and alumni, many of whom were caught up in the fighting, as well as for relations between New Zealand and Britain, and New Zealand’s standing as a nation in its own right separate from its colonial settler past.

28 When UNZ was dissolved c. 1960, UC was one of four universities established in its place, and four more have been established since, although each of them emerged out of institutions or university branch facilities that existed in 1960 (see Gould, 1988).

29 The buildings and other features at Ilam are of contemporary design: there was no attempt to replicate Oxford of the Middle Ages. However, a few buildings were named to commemorate academics (e.g. James Hight, John Macmillan Brown) and students (e.g. Ngaio Marsh, Ernest Rutherford) of the earlier period. The original buildings vacated in the 1970s are now an Arts Centre and tourist attraction.

30 UNZ appointed academics based in Britain as examiners, particularly in traditional academic subjects, as distinct from the professional subjects. This use of British-based examiners arose in the 1870s from a concern to maintain a high standard and secure fairness among students from the various affiliates, although many academics in New Zealand demurred from this view (see Hunter et al., 1911). Arrangements at the British end were handled by an agent. As well as setting examination papers, the examiners marked the students’ scripts, which were sent to Britain for this purpose, and communicated the results to UNZ through the agent. The duration of this process was such that the ceremonial conferment of degrees could not take place until April, which has remained the normal time to hold capping ceremonies at UC.

31 Between 1883 and 1913, 60% of the graduates of the College had entered the so-called learned professions (e.g. teachers, lawyers, engineers, clergy, doctors) (Gardner et al., 1973).

32 Regarding masterate and doctorate degrees, even as late as the 1950s, the annual number awarded by UNZ for the whole of New Zealand were only 220 and 15, respectively. There was a fivefold and tenfold increase in these numbers by 1981 (UGC Review Committee, 1982).

33 Teachers of science were among those who argued successfully for a BSc.

34 Incidentally, conferring new awards required amendments to be made to UNZ's Royal Charter, proposals as to which were scrutinised by the Privy Council at Westminster, and many were not approved (see Parton, 1979), demonstrating British influence was legal as well as social or cultural.

35 In today's terms, it consisted of 100-level and some 200-level study, at most.

36 Of 858 degrees conferred by UNZ by 1900, 80% were of the BA variety (Parton, 1979). The BSc was second most popular but even in 1920 the ratio of BAs to BScs was 7:1, and it was still 2:1 in 1946 (Gardner et al., 1973).

37 G. S. Sale was professor of classics at Otago and C. H. H. Cook was professor of mathematics and natural philosophy at the College. It is no coincidence that Latin and mathematics were compulsory subjects and remained so until these gentlemen had retired in the 1910s.

38 Part of the delay was that it was not until the 1920s that improvements of sufficient magnitude were achieved in standards of secondary education such that students enrolling at the College and other affiliates were better prepared than previous generations.

39 *Second year* and *Third year* were obtained by distinguishing *Advanced* courses into two stages.

40 The reduction in units was to recognise that in contrast to Arts students Science students had to fulfil periods of laboratory work during Stages 2 and 3.

41 The BCom. was something of an exception proving the rule. Although it was changed c. 1930 in the aftermath of the change to the BA, its actual simplification as a nine-unit degree did not occur until c. 1960.

42 See Parton (1979) about the protracted consideration during the 1930s about who should set and mark examinations at the different levels. The system was changed from a preponderance and then some examinations being set and marked in Britain to examinations being set and marked in New Zealand, and then set and marked at the constituent colleges, albeit that up to the mid 1950s, the internal examiners were restricted to the ranks of the professors and up to c. 1970 an external assessor had to be appointed for at least some examinations.

43 In addition to many functions being transferred to affiliates so as to be consistent with their new roles as universities with award granting powers, some residual functions had to be vested in other statutory bodies, notably the UGC (Parton, 1979). The remit of the UGC was much wider than merely granting funds (about which see below), giving rise to Gardner et al. (1973) likening it to a Ministry of Universities. Although it included some functions relating to programme development and assessment, in practice these were vested in a Curriculum Committee, which although under UGC's umbrella was a collaboration among the individual universities. It scrutinised proposals for major new programmes and qualifications from UC and other universities from an inter-university standpoint after they had passed through a local decision making (e.g. at UC) (Gardner et al. 1973; Gould, 1988; Parton, 1979; UGC Review Committee, 1982). When the UGC was itself abolished c. 1990, this function was taken over by the NZVCC within which CUAP has emerged to perform it (NZVCC:CUAP, 2007).

44 A significant impetus for having undergraduate diploma qualifications, which are of much shorter duration than bachelor degrees, seems to have arisen from the Hughes Parry Committee of 1959. It was concerned about increasing the number of full-time students and tailoring qualifications to full-time and part-time study respectively (Parton 1979). The New Zealand economy in the 1950s onwards had a greater need for qualified people and diplomas meant part-time students gaining a qualification much quicker than if they had to complete an entire degree.

45 For example, a proposal by Professor Arnold Wall for a course with a syllabus unique to the College was declined by the UNZ Senate in the 1920s because it was contrary to the notion of courses having common syllabuses across New Zealand (Parton, 1979).

46 Other proposals around at the time that were also threatening were proposals to create two additional university colleges (and so, would be universities) in the Waikato and Manawatu regions and to permit courses to be offered extramurally, all of which eventuated during the 1960s. These were additionally controversial because of the adverse affect they might have on existing university colleges/would-be universities.

47 The naming of undergraduate levels used officially by UNZ changed in the 1940s from *First year* to *Stage I*, etc., probably because of the longstanding reality that many students studying the courses in question did so out of turn with when they entered the University College, particularly as part-time students. In everyday parlance,

the two sets of terms are used interchangeably alongside the even more recent official terms of *100-level*, etc. whose origins are explained above (see note 6??).

48 The initial statutes named 14 institutions in Britain and the other dominions. After a decade or two, a few applications were approved from holders of degrees from institutions in the USA and continental Europe. By 1920, the statutes referred to the open-ended categories of British chartered universities, and British and foreign universities recognised by the Senate.

49 The situation can best be illustrated with a sample of the annual number of applications, whether approved or declined, that the Senate dealt with. In 1888 and again in 1908, there were three applications for conferrals of degrees. In 1928, it was 11 for conferrals of degrees, one for grant of credit towards a degree and one for recognition of matriculation from elsewhere. In 1948, it was 10 for conferrals of degrees, 28 for grant of credit towards a degree and 55 for recognition of matriculation from elsewhere. In 1958, only the numbers of successful applications are available: these were 15 enrolments to higher degrees with graduate status, 30 for grant of credit towards a bachelor degree and 108 for recognition of matriculation from elsewhere (Source of data – “Minutes of Proceedings of the Senate and Board of the University” (1871-) for the respective years).

50 It is as well to remember that even in the 1970s supermarkets were a relatively new phenomenon in New Zealand and they seem to have been regarded with a mix of suspicion and condescension among UC’s academics, especially when it came to applying their circumstances of giving customers (in this case students who traditionally were regarded as supplicants) an unbridled choice in courses and qualifications.

51 There were two notable exceptions to the study that was encompassed within this initial points system. First, it was never applied to postgraduate qualifications and courses. Second, engineering courses at Stages I to III were not included, and this remained the situation until Stage I courses of this ilk were brought into the scheme in 2000. The other engineering courses, which were referred to as *professional* level courses, were included from 2004. These exceptions reflect the primary reasons for the system. Both postgraduate qualifications and engineering qualifications were made up of compulsory courses and limited numbers of electives.

In the case of engineering, it was rare for students to take any course outside of the Engineering Faculty offerings. There was no need then to apply any credit point system. In the case of engineering, this changed as a much wider interface began developing with the rest of UC in the 1990s. For example, the computer engineering degree came to share about 50% of its courses with electrical engineering offerings and the rest were from the general schedule of courses offered in computer science, which were also available to the BA, BSc., BCom., etc. The credit point system in these cases made it much easier to manage engineering students who now had broader enrolment choices because there was less regulatory prescription (Personal communication from Richard Duke, Dean of College of Engineering at UC).

52 Lest it is forgotten, a note here is in order about research, an activity that absorbs academics and that seems vital in terms of standards of learning and teaching, and so of courses and qualifications. In the College days, research was severely limited by lack of library and other facilities and “sadly insufficient” (Gardner et al., 1973, p. 129), although an annual list of research work began being published in 1919. By the 1930s, a list of staff publications was appearing in the Calendars and Annual Reports. The University College Council took steps to increase the volume of research activity and the resources it commanded in 1944, spurred on by philosophy lecturer, Karl Popper (Parton, 1979). Research that academics were engaging in became a little more prominent and the number of published items increased from 19 in 1948 to 274 in 1971 (Gardner et al., 1973). Today, research, research outputs and the PBRF, the acronym of Performance-Based Research Fund, are a significant part of daily discourse, as reflected in the number of items listed in the UC research Report for 2008 being in excess of 3,000.

53 As indicated earlier, this was changing in 2009, when some departments began to assign values of 15 points and multiples of 15 points to postgraduate courses in addition and corresponding to their course weights as already expressed in portions of an EFTS.

54 A significant subsequent development may be that in 2007 New Zealand acceded to the Lisbon Convention (Council of Europe, 1997), reaffirming and enhancing recognition in other signatory countries of its qualification system and its registered qualifications, including those conferred by UC (NZQA, 2007).

55 Given the existence of university league tables and sources such as the Good University Guide 1010 (2009), one might have doubts about equivalence of quality of national or international points.

56 Elaborating this matter quantitatively, the differences between old system and the new one were that the amount of study required at *300-level* in requirements for three-year bachelor degrees increased from 12 old

points \equiv 56 new points to 84 new points \equiv 18 old points; and at *200-level* they increased from 24 old points \equiv 88 new points to 132 new points \equiv 36 old points. The amount of *100-level* study allowed to count was reduced from 72 old points \equiv 216 new points to 144 new points \equiv 48 old points.

57 Under the *new degree structure* of 1975 to 2004, a 6-point, 100-level course had a course weight of 0.1550 EFTS, compared with a 6-point, 200-level course with a course weight of 0.1850 EFTS, and a 6-point, 300-level course with a course weight of 0.2550 EFTS. Thus, the nominal workload required to obtain 6 points at 300-level was greater than that to obtain 6 points at 200-level, and similarly at 100-level.

58 It is curious that an array from 3 to 12, as in the *new degree structure* system, was less of an issue than the array of 11 to 28. Perhaps more people found the numbers 3 to 12 easier to work with than 11 to 28.

59 The term *honours* is also used at UC and elsewhere in New Zealand as an appendage to bachelor degrees, but refers to a fourth year of study after one has completed a three-year bachelor degree and can constitute the first year of a two year master degree.

60 The original distinction between the BA(Hons) and MA was that the former was taken immediately after a BA, while there was an interval between completing a BA and taking an MA. The courses were the same, and a holder of a BA(Hons) was eligible for an MA after an appropriate interval and without further examinations. That has now changed, and a BA(Hons) or other bachelor degree with honours is usually the first year of a two-year master degree.

61 Various issues of definition and availability affected collection and processing of the data provided in these charts and those in the next two Figures. The reliability of the charts lies in the trends they illuminate, rather than precision of individual data points.

62 Whereas from the 1920s up to the 1990s the year was divided into three terms, after 2000 the academic year was divided into two semesters. Under the earlier arrangement, and the prior one of two terms up to 1920, courses had usually lasted the entire academic year, with examinations annually in October. To fit with the new arrangement, during the 2000s, the duration of virtually all courses was reduced to one semester, with examinations bi-annually in June and October. In bringing this about, the majority of courses of three terms duration were replaced by two courses each of one semester duration. A minority were rearranged so that three terms work was fitted into one semester. The change to semesters both accommodated reducing course sizes for the reasons of student choice and staff preferences, etc., and prompted further changes to course sizes so that they fitted within a semester.

63 There was a period c. 1880 when many College part-time students were also attending the forerunner of the College of Education.

64 The change of name from the College to the University College was significant to something that did not happen rather than something that might have. That is, UNZ continued, despite calls for its dissolution and for the creation of four separate universities out of its principal affiliates (e.g. by UNZ's Board of Studies in 1918; and by Hight in 1924, in advocating a University of Canterbury, while professor of history, economics and political science – he was pro-chancellor of UNZ 1938-48). But to distinguish them from other bodies that used the name *college* and to confirm their status to the outside world, the affiliates were permitted to use *university* in their title (Parton, 1979).

65 Hight and Candy (1927) include a register of students up to the 1920s with short bibliographies.

66 Growth in students was accompanied by improvements to the preparedness of students: entry to the University College without matriculation fell permanently to under 10% by 1957. However, much of this fall may be associated with classifying students as eligible to matriculate simply by them attaining the age of 20, which is the Age of Majority in New Zealand.

67 This is the number of individual students, and it is estimated that over 13,000 are full-time and over 6,000 are part-time. The relative proportions of full-time and part-time students have been similar to this throughout UC's existence, carrying on from previous periods when part-time study was significant, if not ascendant.

68 The restrictions arose from Government imposed restrictions in the 1970s (UGC Review Committee, 1982).

69 The ratio of lecturers to professors increased from 1:1 in the early days to 2:1 by 1925, to 5:2 by 1950. As elsewhere in New Zealand (see Parton, 1979), the increase in staff numbers was accompanied by the number of New Zealand first degree holders preponderating by about 1950, except in the professorial ranks in which there was still a slight majority of academics from Britain or similar.

70 *Clan* refers to a mechanism of control particularly suited to organisations focused on internal maintenance with flexibility, concern for people and sensitivity for those putting their trust in clan leaders. The dominant leadership style in a clan culture is that of a mentor or facilitator with an emphasis on building loyalty and cohesion. In university circles, it would be manifested by senior academics acting as clan chiefs, gathering occasionally as a gerontocracy to bring about harmony and consensus to situations in which intra-institutional differences were occurring. The mechanism relies to a great extent on socialisation. It is efficient in mediating transactions between interdependent individuals when goal incongruence is low and performance ambiguity is high. Direct evidence of a clan culture is difficult to come by, not merely for lack of studies of this matter at the College, etc. but because the College predates ideas of organisational culture and, in particular, of clan control of organisations, which was first mooted by Ouchi (1980). However, reading Gardner et al. (1973), including between the lines, and poring over the fine minutiae of formal College and UNZ meetings as recorded in the meticulous minutes that were kept, there seems to have been a leaning towards the clan as the foremost mechanism of control in the College. This fits with what is not only possible for universities but also with what one might expect in terms of the proficiency and legitimacy needed for them to be sustained (Berrio, 2003; Bourne and Ezzamel, 1984; Mintzberg, 1991; Pounder, 2001; Sporn, 1996).

71 Even though choice did seem limited, Professor C. H. H. Cook calculated that in 1883 there were over 5,000 ways of proceeding to a BA (Gardner et al., 1973).

72 Until the 1940s or, in some cases, 1950s, students of the College or University College had to “keep terms” in order to be eligible to sit UNZ examination papers. What constituted “keeping terms” initially meant attending lectures and then passing annual College examinations. Later it included completing coursework, or coursework was substituted for annual College examinations, so that there was only one examination or set of examinations at the end of the course, the UNZ examination(s), and not two sets. The notion of keeping terms continued at UC, finally dying out in the 1990s, although before that calculating the final grade of a student on a course was often done using assessment administered during the course and administered at the end of the course.

73 The College seems to have been fortunate in this in some respects, as at other colleges finances were much less certain, UNZ and the Government not having a scheme that gave them a sound financial footing (see Parton, 1979). However, this was a two-edged sword in that this financial independence meant that as late as the 1940s the College did not receive as much Government support as was enjoyed by the colleges in Wellington and Auckland, including a much lower level of statutory recurring grant (see Gardner et al., 1973; Parton, 1979).

74 In the early years, students paid fees to attend a term’s lectures in a subject (a fee of one guinea (\$2.10) per term applied from 1875 to 1923) and fees to enter College examinations. Up to the 1900s, fee payments were recorded incidentally to academic records, in the ledger style volumes referred to earlier. To pay these fees and UNZ examination fees, and to meet other study and living expenses, some students obtained exhibitions and scholarships (which were superseded later by bursaries, allowances, loans and such like) but most still had to work, as did those without these awards, hence the circumstances that most students were part-time. Incidentally, for many years, the financial rewards for having a degree were not obvious compared with being without one (Gardner et al., 1973).

75 More of how curricular accounting figures in this change in economic and political policies is analysed in the next section.

76 As alluded to earlier, significant amounts of revenue notionally received from students originate from Government sources. For example, StudyLink provides students with loans and allowances, significant portions of which StudyLink pays directly to UC as course fees. The proportion of revenue identified with students actually paid over to UC directly by the Government is not publicly available. Payments by various ministries for research they commission are also excluded from the calculation of the proportion of UC revenue provided by the Government.

77 As the TEC was envisaged as a buffer body between the Government and the universities, NZVCC supported the concept “as a source of independent advice with some similarities to the former University Grants Committee” (‘Questions raised over HEFCE’s future’, 2008).

78 Up to 1991, capital grants (and some revenue grants) were made for specific purposes (e.g. to construct an approved building), but since the EFTS funding system was introduced (including since the Tertiary Education Organisation Component modification), these have become much less important, and UC and the other institutions have been permitted, if not encouraged, by Governments to raise capital in other ways (e.g. private

benefactors, sale and lease back, commercial borrowing, application of cash operating surpluses arising from charging depreciation expenses against revenue and making accruals-based operating surpluses).

79 By using a proportion and varying it downwards, the actual amounts granted between 1985 and the present were reduced in line with the fundamental economic and political policy shift referred to above whereby tertiary education was accorded the status of less of a public good and more of a private one.

80 These figures purported to be their actual expenditures per EFTS c. 1990. Calculations of these depended on how the accounting system in each institution portrayed the allocation of resources, including how accountants, senior managers and others chose to apportion overheads of common services and shared resources (Coy et al., 1991).

81 This seems to have led to students understanding the new points system, and more readily so than staff did (Personal communication, Jan Cameron, Assistant Vice-Chancellor (Academic), UC).

82 The previous seven faculties have continued alongside this new structure, and the various academic departments are both part of a faculty and part of a college. The colleges are organised along resource allocation lines while the faculties are organised along curricular lines.

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10	Doctorates
9	Masters
8	Postgraduate Diplomas and Certificates, Bachelors with Honours
7	Bachelors Degrees, Graduate Diplomas
6	Diplomas
5	
4	
3	Certificates
2	
1	

Figure 1 The New Zealand National Qualifications Framework (Source: NZQA, 2007; UC, 2007)

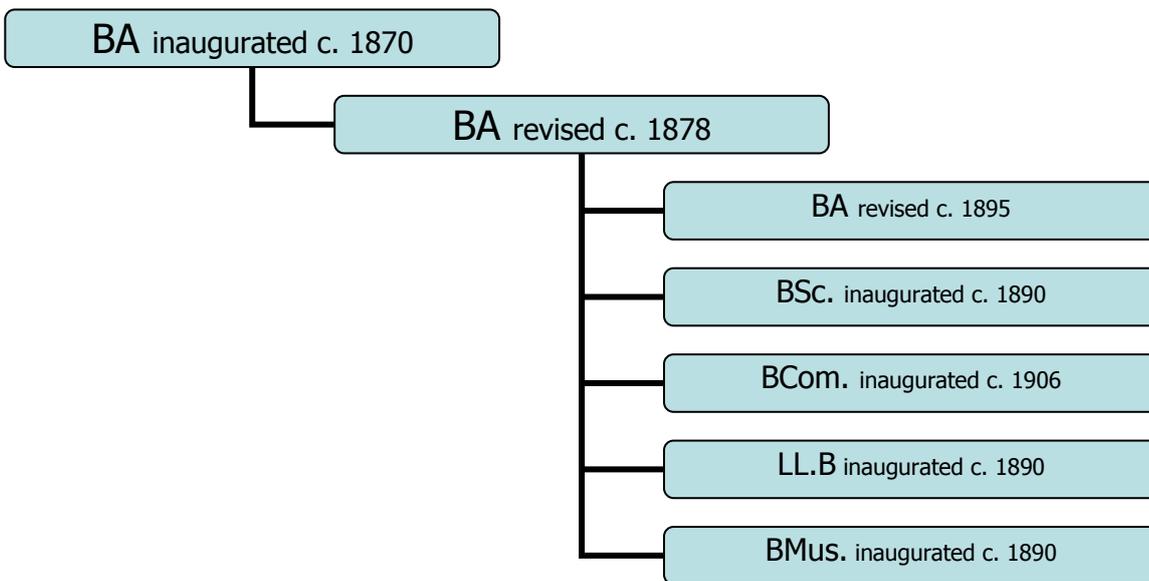


Figure 2 The Branching Out of Bachelor-level Qualifications between the 1870s and 1900s

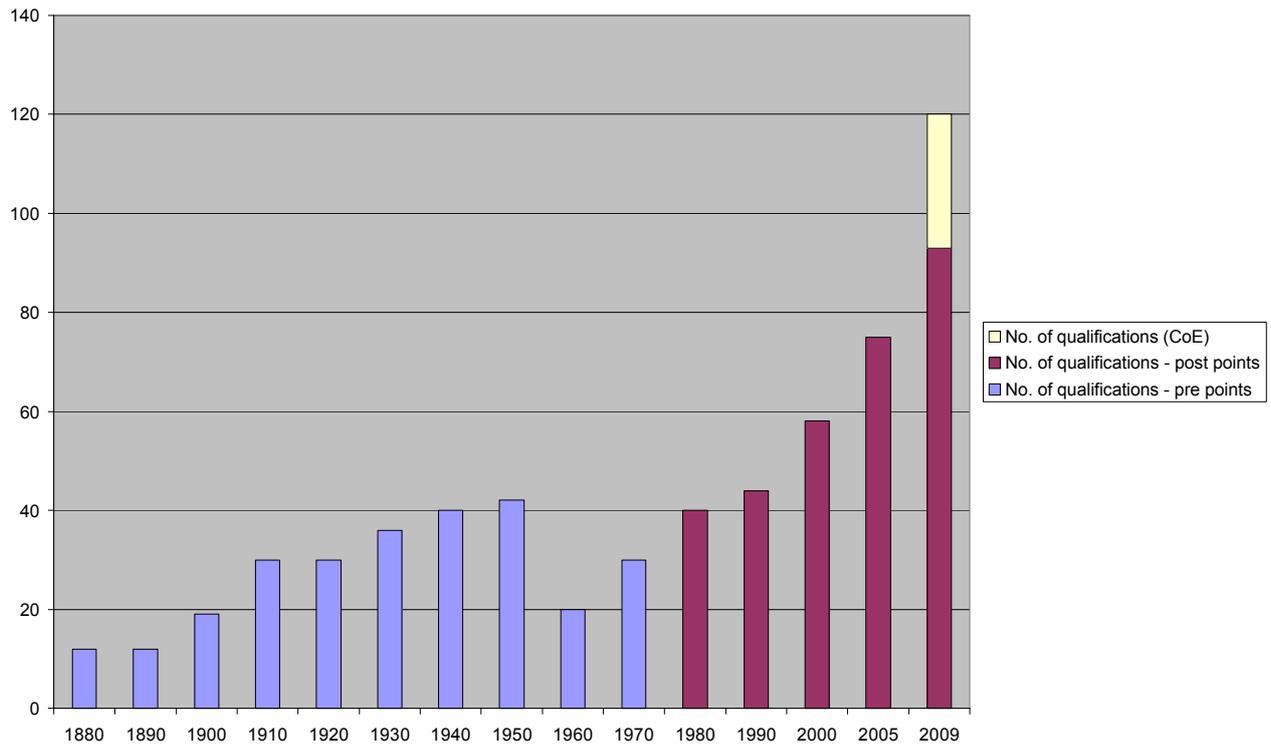


Figure 3 Number of qualifications that students have been able to study at UC decade-on-decade since the 1870s (the numbers up to 1960 are for UNZ qualifications, not all of which could be completed entirely through courses at the College/University College. The numbers are for meta-qualifications and do not include majors and endorsements within these)

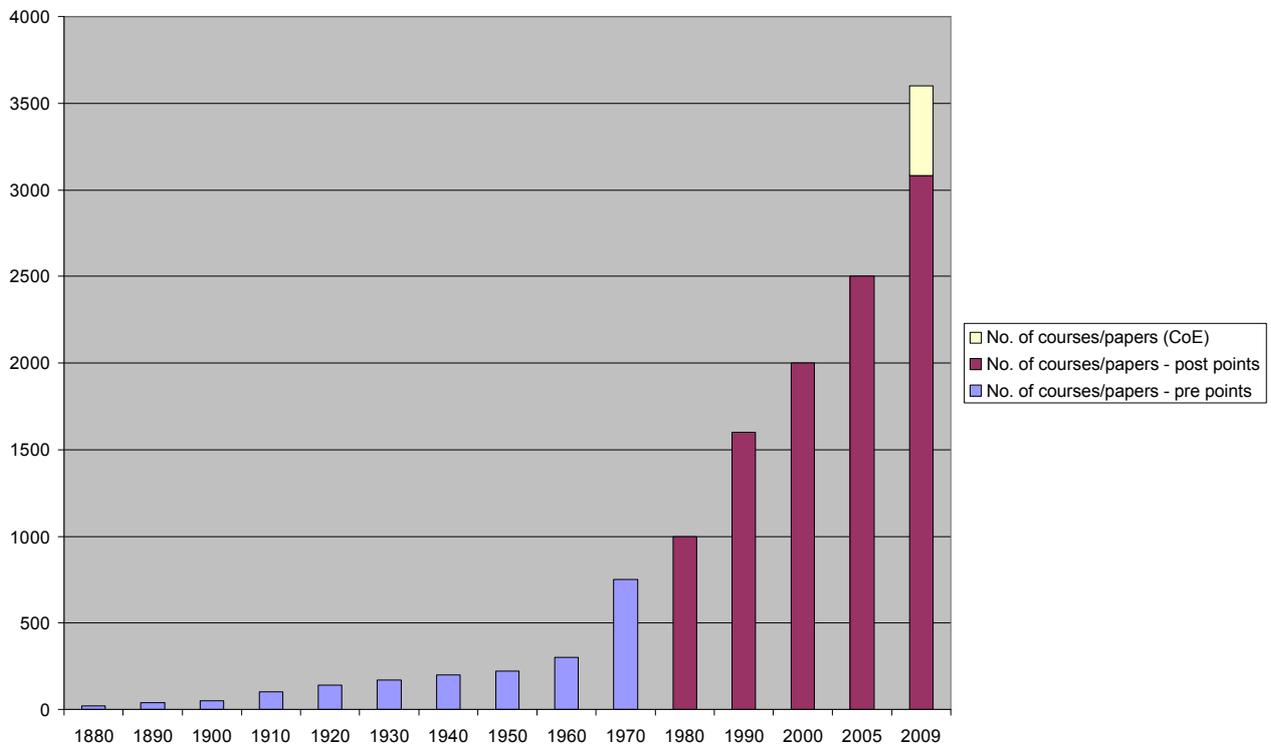


Figure 4 Number of courses that could be studied for at UC decade-on-decade since the 1870s

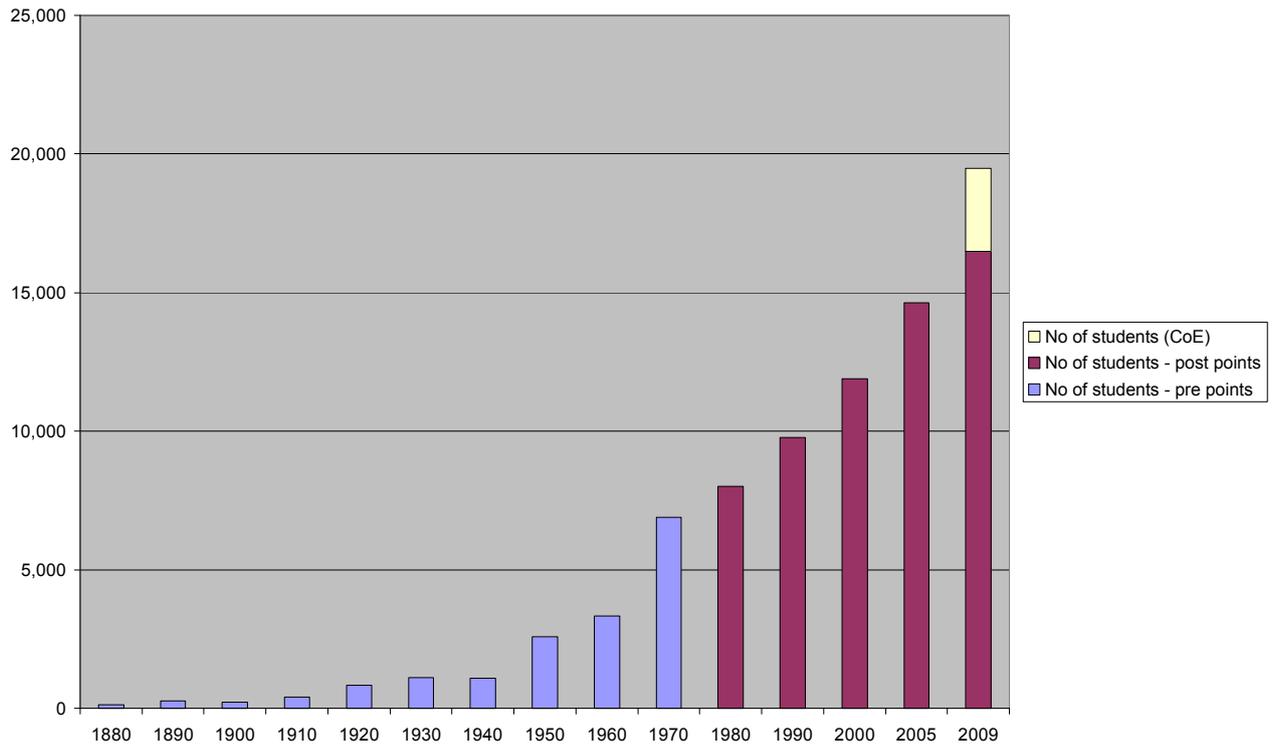


Figure 5 Number of individual full- and part-time students enrolled at UC decade-on-decade since the 1870s

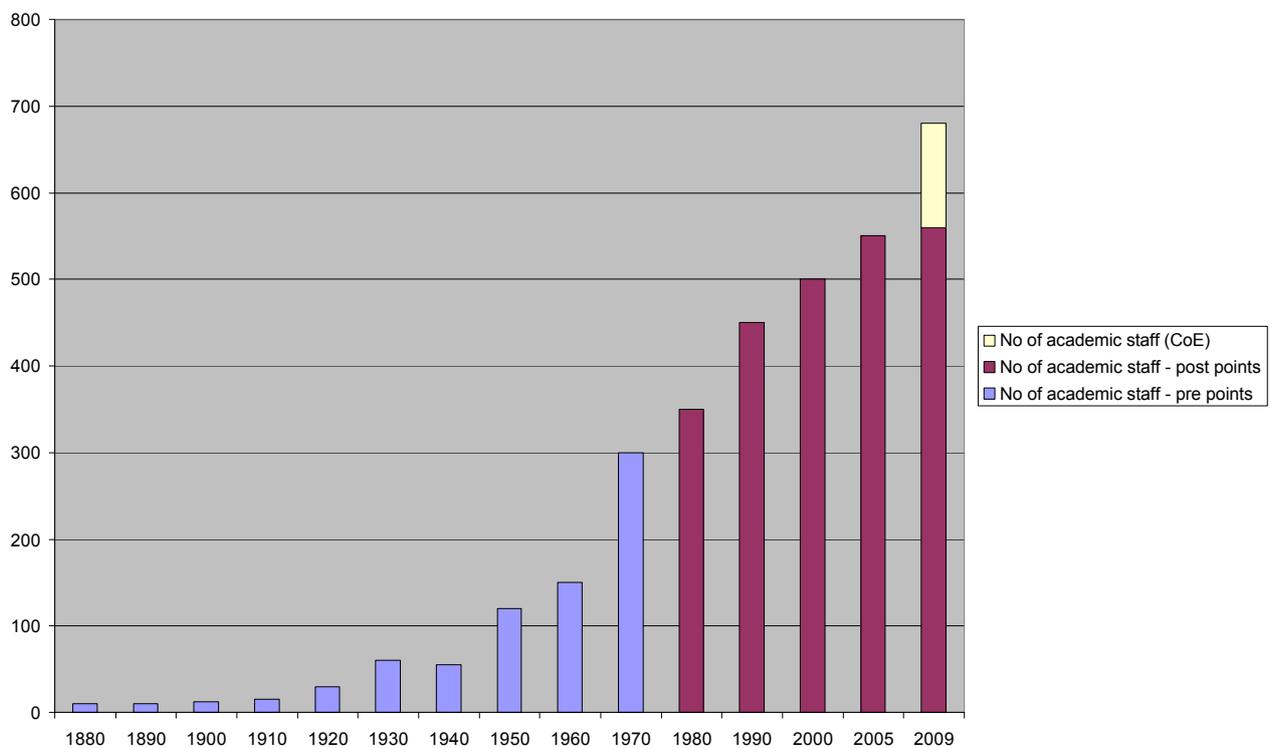


Figure 6 Number of individual full- and part-time academic staff based at UC decade-on-decade since the 1870s