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A COMPARATIVE ANALYSIS
OF INTRODUCTORY ACCOUNTING PAPERS
AT NEW ZEALAND POLYTECHNICS OFFERING
THE NATIONAL DIPLOMA IN ACCOUNTING

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ABSTRACT

This study provides a comparative analysis of introductory accounting papers at New Zealand Polytechnics offering the National Diploma in Accounting (NDA). The introductory papers, Accounting Principles and Accounting Practices, provide the core courses in accounting education at New Zealand Polytechnics and form part of the National Certificate in Business Studies (NCB). The NCB is a prerequisite qualification for the NDA.

New prescriptions for the NCB introductory accounting papers were adopted at the beginning of the 1990 academic year. The prescription changes are an attempt to introduce higher learning skills such as analysis, interpretation and judgment to students at the earliest stages in their accounting studies. These changes are in accordance with both the recommendations suggested by the New Zealand Society of Accountants' (NZSA) Horizon 2000 - and beyond study and current trends worldwide. The changes also arose as a result of dissatisfaction amongst Polytechnic accounting tutors in the late 1980's with the emphasis in introductory accounting courses being placed on developing procedural, 'number crunching' skills rather on developing conceptual, analytical skills.

This study uses Bloom's taxonomy of educational objectives as the basis for evaluating the course outlines and the level of learning skills required in the assessments for the introductory accounting courses at the Polytechnics offering the NDA.

The study seeks to determine whether the Polytechnics offering these introductory courses (Accounting Principles and Accounting Practices) have changed the emphasis of the learning objectives and expected learning outcomes.

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CHAPTER 1. INTRODUCTION

1.1. AIM OF THE RESEARCH

The purpose of this research study is to provide a comparative study and critical analysis of the learning objectives and learning outcomes (assessments) for introductory accounting papers at New Zealand Polytechnics which have been accredited or are seeking accreditation to teach the National Diploma in Accounting (NDA). These introductory papers form part of the core requirements for the National Certificate in Business Studies (NCB) which is a prerequisite for entry into the NDA.

1.2. IMPORTANCE OF THE RESEARCH

The New Zealand Society of Accountants (NZSA) is considering changes to the educational requirements for entry into the profession in the light of changes that have been recommended overseas. This suggests that accounting education as it is currently practised may undergo major reorientation between now and the year 2000. Future trends are likely to follow the path of the American Accounting Association (AAA) in approaching accounting education as an information development and distribution function for economic decision making and emphasizing students' learning to learn as a primary educational objective.

As a result of discussions in the late 1980's by Polytechnic tutors, representatives of the Department of Education and the New Zealand Qualifications Authority (NZQA),¹ changes were made to the prescriptions for the two introductory accounting courses for the NCB. The changes became effective from the 1990 academic year. The main thrust of the changes is to promote and place a greater emphasis on understanding the conceptual underpinnings of accounting in the first accounting paper (Accounting Principles), making it primarily a course for the users of financial statements. The

¹ The New Zealand Qualifications Authority (NZQA) came into force on 2nd July 1990. From that date, the NZQA assumed the responsibilities previously undertaken by the Authority for Advanced Vocational Awards (AAVA) relating to the NCB and NDA.

traditional technical skills of recording transactions and preparing financial statements now form the basis of the second introductory paper (Accounting Practices). These changes are in line with the recommendations of Horizon 2000 - and beyond [NZSA, 1984]. Prior to these changes, both papers (previously titled Accounting 1A and 1B) covered the technical, preparer skills required in accounting, often referred to as 'number crunching'.

This study has merit in that it seeks first to determine whether the teaching institutes included in the study provide adequate and appropriate learning/behavioral objectives for their introductory accounting courses, given the general aim of those courses. The study's analysis of the assessments set by each institute to determine whether they are appropriate given the specific learning objectives stated in the course outline is of importance to those institutes.

Furthermore, for three important reasons in accounting education, the quality of the foundation courses offered at accredited Polytechnics is of significance to tertiary educators in accounting and the accounting profession. Firstly, they establish a base for later study in accounting in NDA accredited (and degree-granting) Polytechnics and in Universities. Secondly, they are part of an overall strategy for education for entry into the professional accounting body in New Zealand. Thirdly, many students commence their accounting studies at a Polytechnic, and later wish to transfer to a university (or another Polytechnic) and offer papers passed at the original Polytechnic, for credit to a degree. In these situations, the institutes granting cross credits require evidence that the content and level of the courses are compatible with similar courses offered at their own institute. The results of this study should be of use for this purpose.

Finally, this study seeks to determine whether the objectives of the changed NCB prescription for Accounting Principles to provide a course of study for users of financial statements and to develop an enquiring mind have been achieved. This is also of interest to accounting educators and the accounting profession.

1.3. SCOPE AND LIMITATIONS OF THE STUDY

The theoretical basis of this study for evaluating the learning objectives and learning outcomes is Bloom's taxonomy of educational objectives, the details of which are given in Chapter 3. Bloom's taxonomy has been used as it provided one of the bases for discussions on NCB prescription changes mentioned above.

The study is limited to Polytechnics which have been accredited or are seeking accreditation to offer the NDA, for which the NCB is the foundation qualification. This limits the number of institutes to six; Auckland Institute of Technology, Manukau Polytechnic, Carrington Polytechnic, The Waikato Polytechnic, The Open Polytechnic of New Zealand and Nelson Polytechnic.

The study is limited to the two introductory accounting papers offered by these institutes in 1990 and 1991. These years have been chosen because the change in the NCB prescription issued by NZQA took effect from the 1990 academic year.

1.4. ORGANISATION OF THE STUDY AND REPORT

Chapter Two provides a brief history of tertiary accounting education and entry requirements into the accounting profession in New Zealand. An overview of this historical background is considered relevant as the NCB is a prerequisite qualification for the NDA qualification, which in turn is a prerequisite for entry into the profession. Chapter Three deals with two related issues. Section 3.1 summarises relevant previous research in accounting education and outlines the current environment and thinking on accounting education issues. Section 3.2 outlines the structures of Bloom's taxonomy of educational objectives used for this study. Chapter Four details the research method used and provides an explanation of analyses undertaken for the study. Chapter Five reports and analyses the results of the study. Chapter Six provides a summary and conclusion.

CHAPTER 2. A BRIEF HISTORY OF TERTIARY ACCOUNTING EDUCATION AND ENTRY REQUIREMENTS INTO THE ACCOUNTING PROFESSION IN NEW ZEALAND

This chapter begins by briefly outlining the history of tertiary accounting education in New Zealand. This is followed by an explanation of the requirements for entry into the accounting profession in New Zealand. This is considered relevant because the NCB accounting papers evaluated in this study provide the basis for further studies and qualifications in accounting which are necessary for entry into the profession.

The first accounting body in New Zealand was the Incorporated Institute of Accountants. It was formed in 1984 and provided examinations for would-be accountants. The New Zealand Accountants and Auditors Association was founded in 1898 and allowed membership for persons who had not passed an examination, but who possessed the necessary professional skills [NZSA, 1984].

In recognition of the need for one accounting organisation, the New Zealand Society of Accountants was established by an Act of Parliament in 1908. This body continues to represent and speak for the accounting profession in New Zealand.

In 1911 the NZSA asked the University of New Zealand to conduct examinations for entry into the profession. This university was the original tertiary education authority in New Zealand [Graham, 1960]. Membership to the profession could be gained by completing an approved university degree or the NZSA professional examinations in accountancy, tuition for the latter being provided by the Polytechnics. Discussion has continued since the early 1900's as to whether entrance to the profession should be by way of examination and if so, what type of examination, and who should control it [NZSA, 1984].

In 1967 and 1971 the NZSA proposed a new system of entry requiring prospective members to have completed an approved university degree, passed a uniform final examination and completed three

years approved practical experience. Whilst a "*slender majority*" of members approved the proposals in 1967, a larger majority rejected them in 1971 [NZSA, 1984, p.81]. Following the members' rejection of the graduate entry requirement, the Education Committee of the NZSA undertook a comprehensive review of the Society's educational requirements.

The review produced a "*compromise proposal for entry via an approved university degree or approved technical institute [Polytechnic] diploma plus a uniform [final] examination controlled by the NZSA. This system was to replace the use of professional examinations set by the NZSA...*" [Mathews and Perera, 1990, p.3]. This revised system came into operation in 1985, with a two-year transition period. Nationwide professional examinations in accountancy were held for the last time in 1987 [NZSA, 1987a].

The approved Polytechnic diploma, known as the National Diploma in Accountancy (NDA), was introduced in 1988 [NZSA, 1987a]. Only individually accredited Polytechnics are able to offer the NDA. The accreditation process is carried out by the Department of Education and the NZSA. The NCB is a prerequisite qualification for the NDA. The NCB is a stand-alone qualification providing courses of study at the introductory and intermediate levels of accounting and related subjects. The NDA provides courses of study at the advanced levels of accounting.

In 1984 the NZSA undertook a study of the present and future profiles and position of the accountancy profession. Amongst other things, the study, "*Horizon 2000 - and beyond*", considered education to be one of the key forces shaping the future of accountancy, and concluded that "*education for life (as opposed to a specific vocational preparation) is increasingly important with an emphasis on thinking rather than on knowing*" [Mathews and Perera, 1990, p.5].

In 1987, following the review of entry requirements and the Horizon 2000 study, the NZSA Education Committee published a Body of Knowledge (BOK) required of all entrants to the profession [NZSA, 1988]. The BOK comprises "*compulsory core topics, advanced elective topics, other elective topics and professional knowledge*" [Mathews and Perera, 1990, p. 6]. The BOK is incorporated in papers for the

NCB and the NDA and undergraduate university courses. The entry requirement to the NDA is the NCB. This is a qualification comprising 12 papers and for students wishing to study for the NDA, 10 of these papers are compulsory [NZSA, 1990]. The compulsory papers comprising the core are:

Principles of Accounting or Accounting Principles

Accounting Practices

Introduction to Commercial Law

The Economic Environment

Organisation and Management

Business Communication

Quantitative Business Methods

Financial Accounting

Management Accounting

Business Computing

This study analyses the first two papers listed above as they are the core accounting papers for the NCB and are also the foundation papers for further studies in accounting. The following chapter provides a summary of the relevant literature concerning current issues in accounting education and outlines the structures of Bloom's taxonomy of educational objectives used for this study.

CHAPTER 3. LITERATURE REVIEW AND THEORETICAL BACKGROUND.

This chapter summarises relevant previous research in accounting education and discusses the current issues in accounting education relevant to this study. This is followed in Section 3.2 with an outline of the structures of Bloom's taxonomy of educational objectives used for this study.

The issues discussed in Section 3.1 are not restricted to one country or one group of academics or professionals. These issues are of worldwide concern and are the basis of continuing discussions both nationally and internationally.

SECTION 3.1. ACCOUNTING EDUCATION

The environment in which accounting operates is dynamic, therefore it should naturally follow that accounting education is also dynamic. However, the fundamental flaw of accounting education is that while it has tended to remain static, the profession and the environment in which the profession operates has been changing [Patten & Williams, 1990]. Smith & Usry [1989] and the AAA [1986] believe there is little doubt that the current content of professional accounting education worldwide, which has remained substantially the same over the past 50 years, is generally inadequate for the future accounting professional.

A United States study undertaken by Needles & Powers [1990], comparing 17 models for accounting education published by seven organisations during the past 23 years, found that until recently little substantive change has occurred in the recommended objectives and structure for the model accounting education programme in the U.S., despite considerable dissatisfaction with accounting education and its output. Needles and Powers expect that similar findings would result from similar studies in other countries.

Until the mid-1980's accounting programs were more technical than conceptual with a concentration on technical procedures - the *how* being taught at the expense of the *why* [Carlson, 1976; Cherry & Reckers 1983; and MacKay, 1980]. Zeff [1979, 1980] has expressed alarm that the phenomenal expansion of authoritative standards over the last decade has promoted a pronounced drift toward 'legal accounting' education and de-emphasizing the theoretical/conceptual framework of accounting. The result is that textbooks and courses require students to learn more factual rules and procedures to be applied in a rather rigid fashion. Learning theory suggests that such methods of learning are inadequate, primarily because they are not conducive to creative thinking and do not motivate students to self-development [AAA, 1986].

Zeff [1979], recommends that theory should come at the front as well as at the back of the curriculum to provide a framework to assist students to think creatively and to be informed critics and interpreters of exposure drafts and future pronouncements yet to come. Accounting programs need to introduce as early as possible creative thinking and problem solving skills [Curtis, 1987]. Zeff advocates a reorientation toward the more conceptual and away from the details of practice, asserting that "*concepts are enduring; practice is not*" [1989, p.209].

A strong fundamental understanding of accounting is necessary for successful accounting careers. The Bedford Committee [AAA, 1986] and the reports of the follow-up committees [Schultz, 1989] have stimulated significant discussion and heightened the awareness of the need for sweeping changes in the education of accountants. A complete reorientation of accounting education is needed, though the direction of this reorientation is difficult to specify clearly [AAA, 1986; Accounting Education Change Commission (AECC), 1990].

The introductory accounting courses should be given special attention when considering reorientation. They must serve the interests of students who are not going to enter the profession as well as those who are. The AAA [1986] recommends that the focus should be on developing analytical and conceptual thinking, not on memorizing professional standards. The overriding objective in

developing course content and teaching methodology should be to create a base upon which continued learning, independent logical thinking and analysis can be built [Courtis, 1987; Mayer-Sommer, 1990; Mueller and Simmons, 1989, Zeff, 1989]. However, no one model of accounting education is expected to be appropriate for all colleges and universities.

Wright [1990] suggests that a part of the learning process in accounting involves enhancing the student's ability to assess: "*What is it I need to know in the way of economic background information to address this question adequately?*" [p. 197]. Zeff [1979] agrees arguing that theory and "*economic consequences*" should be given a much larger role in accounting courses. Zeff further argues that the early and continued inclusion of theory in the curriculum "*should enable [students] to make wiser policy decisions*" [p.593]. This view has increasing support [Kinney, 1990; Wyer, 1984].

The proceduralists clearly value the acquisition of technical skills, while the conceptualists favour the nurturing of thought processes [Wyer, 1984]. Mister, Strawser and Zlatkovich [1984] assert that procedurally oriented elementary accounting courses do not serve the needs of those business students who are not accounting majors, and questions the appropriateness of such courses for accounting majors as well. Wyer [1984] believes that while the rhetoric seems to focus on the superiority of the conceptual approach, practice belies such an emphasis, and suggests some stimulus is needed to overcome the inertia of the *status quo*. Sloan [1983] insists that a broad view of accounting is essential and that accountants must understand the underpinnings of the transactions, not just how to account for them.

Several writers have used a developmental approach to examine accounting education [Shute, 1979; Perry, 1970; Wilson, 1979]. However, most of the literature stops short of the comprehensive analysis that is needed.

Shute [1979] reported on a study of the role of cognitive reasoning in accounting education. He based his work on the Piagetian typology/framework of levels of cognitive development. Piaget [1977]

described the development of the human mind in terms of four stages: sensory-motor, preoperational, concrete-operational, and formal-operational. Shute focused on the last of Piaget's four levels of thinking: the formal-operational stage. This type of thinking adds *"the ability to reason abstractly about things that might not be observable in the real world"* [1979, p.4].

Shute [1979] observes that: *"In accounting, formal operational ability seems to be necessary for one to understand concepts such as income determination, the balance sheet and income statement relationship and the efficient market hypothesis"* [p.9]. Wyer [1984] cites *"combinatorial, probabilistic, and correlational reasoning"* as examples of *"the abilities that are characteristic for formal-operational patterns"* [p.132].

Shute's study examined three facets of development:

1. the level of cognitive development of accounting students;
2. the distribution of cognitive levels required to solve accounting examination questions; and
3. the relationship between students' cognitive levels and their performance in accounting exams.

He found that only slightly more than one-third of the students were classified at the formal-operational level and that less than six percent of the total examination questions required that level of reasoning. Shute further notes that *"there are some very preliminary indications that the whole area of professional judgment may involve the same processes identified as formal-operational thought"* [1979, p.39].

He concluded that the lack of a relationship between academic success in accounting and cognitive level may be due to *"the lack of higher level cognitive demand in the examinations"* [1979, p.35]. Although Shute's research is based on questions used by one institution, it is possible that the results can be generalized other institutions. Shute acknowledges that cognitive theory alone cannot serve all the goals of an accounting education. This study is concerned with similar issues to Shute's study, namely the level of cognitive demand in the assessments of the Polytechnics included in this study, and the distribution of cognitive levels required to solve assessment questions.

A scheme developed by Perry [1970] describes the stages of intellectual and ethical development. His model explicitly integrates both thinking processes and ethical growth, considered by him to be critical

in the creation of accounting practitioners. Perry's scheme describes the evolution in students' interpretations of their lives as a progression in the way students perceive their experiences. It focuses on: *"...the structures which the students explicitly or implicitly impute to the world, especially those structures in which they construe the nature and origins of knowledge, of value, and of responsibility"* [p.1]. Perry [1970] based his scheme on his experience with and research on college students. It is specifically designed for the circumstances of the majority of accounting students. Perry's work has wide acceptance providing the basis for many dissertations and other research studies [Wyer, 1984].

Perry's [1970] comments on a *"good teacher"* are also relevant to this study. He describes a good teacher as *"one who supports in his[her] students a more sustained groping, exploration and synthesis. His[her] acts of evaluation must subtend more than discrete rights and wrongs, and extend through time to assist discrimination among complex patterns of interpretation"* [p.211].

Wilson [1979] also conducted research on the accounting curriculum using the work of Perry. He observes that *"...the teaching of financial accounting rarely seems to progress beyond Level I - knowledge is absolute; one question and one answer"* [p. 397]. To remedy this restriction, Wilson proposes an alternative pedagogy designed to challenge the student to move beyond the elementary stages of development. The model includes a curriculum that emphasizes concepts and original sources in the early stages with mechanics covered after the initial experience with theories. The pedagogy would emphasize *"the discussion and resolution of accounting and reporting issues raised in a case context"* [p.400]. The new NCB prescriptions were developed with a similar aim in mind as stated in the course prescription for Accounting Principles.

Shute [1970] and Wilson [1979] present useful first steps in the resolution of the conceptual-procedural discussion. The former attempts to link cognitive development to facets of accounting education and the latter expands the inquiry to include ethical factors in addition to the intellectual.

Criticisms of contemporary financial accounting education for its "*excessive concentration on extant accounting practices and authoritative rules to the exclusion of a more decision-oriented analysis*" has resulted in several broader objectives being recommended [Wright, 1990, p. 183]. They include developing:

1. An understanding of the role of accounting information in the financial markets and managerial decision making. [AAA, 1986].
2. An ability to exercise conceptually oriented reasoning in addressing 'unresolved' and ambiguous situations [AAA, 1986; Bastable, 1977; Courtis, 1987; Inman, Wenzler and Wickert, 1989; Kinney, 1990; Novin, Pearson, and Senge, 1990; Subotnik, 1987; Wright, 1990; Zeff, 1979, 1989].
3. An appreciation of the complexity of issues facing the profession toward the goal of producing leaders in the profession who might play a role in improving and advancing the discipline itself [AAA, 1986; Cherry & Reckers, 1983; Patten & Williams, 1990; Shute, 1979; Zeff, 1989].
4. Textbooks that do justice to economic reality [AAA, 1986; Nørgaard & Hussein, 1990; Subotnik, 1987; Zeff, 1979, 1980, 1988].

The first three objectives are stated or alluded to in the general aims of the NCB Accounting Principles paper issued by NZQA.

Overall, a review of the accounting education literature does little to help answer the question of *how much* emphasis and time should be placed on the technical procedures (the *how*) and how much on the underlying concepts (the *why*). What emerges is a sense of confusion concerning where the emphasis is currently being placed, as well as where it should be placed [Cherry & Reckers, 1983]. However, the literature does indicate a growing dissatisfaction with the concentration of the *hows* of accounting, as opposed to the *whys*.

The NZSA [1984] Horizon-2000 study lists the key forces shaping New Zealand's future as automation and education. The study stresses that *"an important aspect of rising educational levels is the increasing importance of thinking as compared with knowing, of education for life rather than for a particular vocation"* [p. 4]. Horizon-2000 believes the future opportunities and problems for accountants will centre round the application of higher-order skills such as analysis, interpretation, judgment: *"The development of the judgemental aspects of professional work is therefore a matter of economic survival"* [p. 11].

The prescription changes introduced in New Zealand in 1990 for the NCB introductory accounting courses, are an attempt to introduce these higher-order skills to students at an early stage in their accounting studies. These changes arose as a result of dissatisfaction amongst Polytechnic tutors in the late 1980's with the emphasis in introductory accounting courses being placed on developing procedural, number crunching skills rather than on developing conceptual, analytical skills.

The following section outlines one established and accepted method of analysing these different levels of skills.

SECTION 3.2 BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES

This section outlines the theoretical basis of Bloom's taxonomy of educational objectives which is used in the analysis sections of this study.

Instructional or learning objectives play a key role in the instructional process in education. Pipe (1975) defines an objective as a *"description of intent stated in measurable terms. (And a performance of behavioral objective is one which describes the intent in terms of observable performance on the part of a learner)"* [p.52].

Objectives are defined more simply by Mager [1962] as: "*specific statements of planned learning outcomes*" [p.10]. Pipe (1975) believes it is important to distinguish between a goal and an objective, describing a goal as "*a description of intent stated in terms that are not measurable* [p.52].

Learning objectives make clear what learning outcomes we expect from our teaching. When properly stated, they serve as guides for both teaching and evaluation. Objectives establish direction. A clear description of the intended outcomes of instruction "*aids in selecting relevant materials and methods of instruction, in monitoring pupil learning progress, in selecting or constructing appropriate evaluation procedures, and in conveying instructional intent to others*" [Gronlund, 1981, p. 31].

Gronlund [1981] recommends as a convenient means of preparing and stating instructional objectives for a particular course, a two-step process:

1. State each **general instructional objective** as an intended learning outcome that encompasses a readily definable domain of pupil responses. Each general objective should begin with a verb (e.g., knows, understands, applies), contain only one general learning outcome, and be relatively content free. Gronlund recommends that typically, from eight to twelve general objectives will suffice.
2. Define each general objective with a list of **specific learning outcomes** that describes the specific observable responses students will be able to make when they have achieved the general objective. This can be achieved by listing beneath each general instructional objective a representative sample of specific learning outcomes stated in terms of pupil performance. Each specific learning outcome should begin with an action verb (e.g., identifies, describes), be relevant to the general objective, and be relatively free of course content so that it can be used with various units of study.

Tyler [1949] recommends three approaches to preparing and determining objectives:

1. listing the activities to be accomplished;
2. listing the contents to be covered; and
3. specifying the general patterns of behaviour.

Tyler's third approach is widely accepted as it is concerned with intended educational outcomes of the course of study. Intended outcomes are usually described by the kind of behaviour expected from the student as a result of the study undertaken by the student. Intended outcomes are often stated as behavioral or performance objectives.

Mager [1962] recognises a behavioral objective as having the following essential ingredients:

1. A statement of what the student should be able to do at the end of the learning session (the **terminal behaviour**).
2. The **conditions** under which the student should be able to exhibit the terminal behaviour.
3. The standard to which the student should be able to perform (the **criteria**).

A useful guide for developing a comprehensive list of instructional/behavioral objectives is provided in Bloom's Taxonomy of Educational Objectives [1956]. This gives a detailed classification of objectives. Bloom's taxonomy divides behavioral objectives into three major domains:

1. The Cognitive domain, which is concerned with knowledge outcomes (e.g. recall) and the development of intellectual abilities and skills;
2. The Affective domain, which is concerned with attitudes, interests, appreciation, and modes of adjustment; and
3. The Psychomotor domain, which is concerned with motor skills.

Each of these three domains is further divided into categories and subcategories. This study will be concerned primarily with the cognitive domain. The psychomotor domain is not considered to be appropriate in a study of accounting education. While the affective domain has greater relevance at

the advanced stages of accounting education, there are issues belonging to the affective domain, such as ethics and professional judgment, which could be considered to be relevant in introductory accounting courses [Patten and Williams, 1990].

The major categories of the cognitive domain, in hierarchical order are:

1. Knowledge
2. Comprehension
3. Application
4. Analysis
5. Synthesis
6. Evaluation.

It should be noted that these categories for classifying objectives in the cognitive domain start with the relatively simple knowledge outcomes and proceed through increasingly complex levels of intellectual ability. This hierarchical pattern of classification is characteristic of all three domains of the taxonomy. Bloom [1956] stipulated a number of principles the taxonomy should meet for it to be useful and easily understood. They are:

1. The processes which it stipulates are cognitive processes.
2. The arrangement of categories is hierarchical according to complexity of processes.
3. The hierarchy of categories is cumulative.
4. The mental processes designated in the taxonomy are learned behaviours.
5. They should be neutral.
6. They should be comprehensive.

A brief summary and description of the major categories in the cognitive domain are shown in Table 3.1. Table 3.2 provides examples of general instructional objectives and clarifying verbs for each category of the cognitive domain of the taxonomy. Table 3.3 displays the general learning outcomes expected for introductory accounting courses associated with the major categories in the cognitive

domain. These tables have provided a useful reference for evaluating the course outlines and assessments of the six institutes included in this study.

Once the hierarchy of educational objectives has been established for a course, it is very important that testing devices be employed to ensure that student achievement is measured in terms of the same hierarchy. For example, if one-fourth of the course objectives deal with *applications* skill, then one-fourth of the testing emphasis should measure performance in these same *application* areas [Karns, Burton, and Martin, 1983]. Gronlund [1981] supports the adoption of Tyler's approach believing that instructional objectives will function most effectively in student evaluation if "*special efforts are made to construct, or select, evaluation instruments that relate closely to the intended outcomes*" [p.62]. The ultimate purpose of assessment is to improve student learning. Thus, any assessment should be evaluated in terms of the extent to which it contributes, directly or indirectly, toward this end and achieves those learning objectives stated at the beginning of a course of study.

Bloom's taxonomy may be criticised on various grounds. The major criticism of Bloom's taxonomy advanced by Ormell [1974] is that it omits a vital ingredient in education: the development of imaginative understanding, which Ormell defines as a "*continuity of fluent response to 'if...then'...questioning*" [p.3]. Ormell asks whether the fundamental error in Bloom's and other derivative classifications is the behavioral assumption on which they are based: "*Is it not absurd to try to classify educational objectives in terms of behaviours when the primary objective of education (on most interpretations of education) is the mind of the child?*" [p.5].

Ormell further criticises Bloom's treatment of the idea of 'understanding', which is not included as a major heading in the taxonomy on the grounds that it is not a precise idea. Ormell asserts that to exclude understanding as a general educational objective on grounds of imprecision, is to evade the central issue, as understanding is a prime objective of education. Despite his criticisms, Ormell believes that the taxonomy undoubtedly works.

Several writers suggest that understanding is implicit in the comprehension category [Scannell and Stellwagen [1960] and Williams and Guy, [1974] (see Table 3.3). In Table 3.2, Gronlund [1981] lists 'understands' as illustrative of a general instructional objective.

The Tables that now follow have been used as a basis for this study, which is primarily concerned with the first three categories of the cognitive domain.

The issues of current concern in accounting education discussed in this chapter, together with the importance of learning objectives outlined, and Bloom's taxonomy of educational objectives provide the background and the basis for the evaluation undertaken in this study.

Chapter 4 then follows with an explanation of how the study was carried out.

TABLE 3.1.
BLOOM'S TAXONOMY OF EDUCATIONAL OBJECTIVES
MAJOR CATEGORIES IN THE COGNITIVE DOMAIN OF THE
TAXONOMY OF EDUCATIONAL OBJECTIVES

**Descriptions of the Major Categories
in the Cognitive Domain**

1. **Knowledge.** Knowledge is defined as the remembering of previously learned material. This may involve the recall of a wide range of material, from specific facts to complete theories, but all that is required is the bringing to mind of the appropriate information. Knowledge represents the lowest level of learning outcomes in the cognitive domain.
2. **Comprehension.** Comprehension is defined as the ability to grasp the meaning of material. This may be shown by translating material from one form to another (words or numbers), by interpreting material (explaining or summarizing), and by estimating future trends (predicting consequences or effects). These learning outcomes go one step beyond the simple remembering of material, and represent the lowest level of understanding.
3. **Application.** Application refers to the ability to use learned material in new and concrete situations. This may include the application of such things as rules, methods, concepts, principles, laws, and theories. Learning outcomes in this area require a higher level of understanding than those under comprehension.
4. **Analysis.** Analysis refers to the ability to break down material into its component parts so that its organizational structure may be understood. This may include the identification of the parts, analysis of the relationships between parts, and recognition of the organizational principles involved. Learning outcomes here represent a higher intellectual level than comprehension and application because they require an understanding of both the content and the structural form of the material.
5. **Synthesis.** Synthesis refers to the ability to put parts together to form a new whole. This may involve the production of a unique communication (theme or speech), a plan of operations (research proposal), or a set of abstract relations (scheme for classifying information). Learning outcomes in this area stress creative behaviours, with major emphasis on the formulation of new patterns or structures.
6. **Evaluation.** Evaluation is concerned with the ability to judge the value of material (statement, novel, poem, research report) for a given purpose. The judgments are to be based on definite criteria. These may be internal criteria (organization) or external criteria (relevance to the purpose) and the student may determine the criteria or be given them. Learning outcomes in this area are highest in the cognitive hierarchy because they contain elements of all of the other categories, plus value judgments based on clearly defined criteria.

Source: Gronlund. [1981, P.568].

TABLE 3.2.
EXAMPLES OF GENERAL INSTRUCTIONAL OBJECTIVES AND CLARIFYING VERBS
FOR THE COGNITIVE DOMAIN OF THE TAXONOMY

Classification Category	Illustrative General Instructional Objectives	Illustrative Verbs for Stating Specific Learning Outcomes
Knowledge	Knows common terms Knows specific facts Knows methods and procedures Knows basic concepts Knows principles	Defines, describes, identifies, labels, lists, matches, names, outlines, reproduces, selects, states
Comprehension	Understands facts and principles Interprets verbal material Interprets charts and graphs Translates verbal material to mathematical formulas Estimates consequences implied in data Justifies methods and procedures	Converts, defends, distinguishes, estimates, explains, extends, generalises, gives examples, infers, paraphrases, predicts, rewrites, summarises
Application	Applies principles to new situations Applies theories to practical situations Solves mathematical problems Constructs charts and graphs Demonstrates correct usage of a procedure	Changes, computes, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses
Analysis	Recognizes unstated assumptions Recognizes logical fallacies in reasoning Distinguishes between facts and inferences Evaluates the relevancy of data Analyses the organizational structure of a work (art, music, writing)	Breaks down, diagrams, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, points out, relates, selects, separates, subdivides
Synthesis	Writes a well-organized theme Gives a well-organized speech Writes a creative short story (or poem) Proposes a plan for an experiment Integrates learning from different areas into a plan for solving a problem Formulates a new scheme for classifying objects (or events, or ideas)	Categorises, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organises, plans, rearranges, reconstructs, relates, reorganises, revises, rewrites, summarises, tells, writes
Evaluation	Judges the consistency of written material Judges the adequacy with which conclusions are supported by data Judges the value of a work (art, music, writing) by use of internal criteria Judges the value of a work (art, music, writing) by use of external standards	Appraises, compares, concludes, contrasts, criticises, describes, discriminates, explains, justifies, interprets, relates, summarises, supports

Source: Gronlund [1981, P.569].

TABLE 3.3
AN ILLUSTRATION OF THE RELATIONSHIP OF THE LEVELS
OF LEARNING IN THE COGNITIVE DOMAIN TO GENERAL
LEARNING OUTCOMES FOR ELEMENTARY ACCOUNTING
COURSES

<u>Major Categories in the Cognitive Domain</u>	<u>General Learning Outcomes</u>
Knowledge	Knows basic accounting terms and concepts
Comprehension	Understands basic accounting terms and concepts
Application	Applies basic accounting techniques to new situations
Analysis	Analyses accounting information into its component parts
Synthesis	Combines accounting information into new patterns or structures
Evaluation	Interprets and evaluates basic accounting information

Source: Williams and Guy, [1974].

CHAPTER 4. RESEARCH METHOD

The information required for this research could only be obtained from the six Polytechnics included in the study. The information needed was the course outlines or prescriptions and the assessments for the two introductory accounting papers (100 and 101) offered by each institute for the 1990 and 1991 years. The steps taken to obtain the data required from the Polytechnics are outlined in Section 4.1. This is followed in Section 4.2 with an explanation of how the information was analysed.

4.1. DATA COLLECTION

The first approach to the Polytechnics to obtain the necessary information was by telephone because it was thought possible that a study of this nature may be rather sensitive, particularly given that applications for degree-granting-status were being prepared by five of the institutes included in this study.

All Heads of Departments readily agreed to provide the information sought and expressed interest in the results of the research. A letter was then sent to each Head of Accounting Department at the six Polytechnics. It briefly explained the nature and purpose of the research study and requested copies of the course outlines and all assessments for the institute's two introductory accounting courses, 100 Accounting Principles and 101 Accounting Practices for the 1989 and 1990 years. A follow-up letter was sent two months later to those institutes which had not responded to the first written request.

Originally, it was assumed that most Polytechnics had introduced the new introductory accounting courses for NCB in 1989. However, when the information was received from most of the Polytechnics, it was apparent that five of the six institutes had introduced the new courses in 1990. Only one institute had introduced them in 1989. As a result, the 1989 papers covered a different prescription and were inappropriate for the study. Faxes were then sent requesting information for

the 1991 first semester Accounting Principles course. As five of the Polytechnics operate a semester system of teaching, the 1991 Accounting Practices paper was not requested, as this course would not have been completed until late November 1991.

This 1991 information for Accounting Principles was duly received from all the institutes. However, one institute operates a full year, as opposed to a semester programme and as only 20 percent of the assessments had been completed at that point in time, this institute has not been included in the 1991 evaluation of Accounting Principles.

Thus, the NCB papers 100 Accounting Principles (1990 and 1991), and 101 Accounting Practices (1990) have been analysed according to the procedures explained in the following section.

4.2 EVALUATION OF COURSE OUTLINES AND ASSESSMENTS

The analyses undertaken involved an evaluation of the internal consistency of the assessments with the specified or implied course objectives. It also involved a critical appraisal of the appropriateness of each Polytechnic's course objectives and assessments in the light of current trends in accounting education in New Zealand.

The descriptions of the major categories of the cognitive domain as provided in Table 3.1 and the illustrative objectives and verbs in Table 3.2 have been used as the basis for determining the level of classification (cognitive demand) in this study.

Each course outline was examined for the following information:

1. A stated general aim(s), purpose(s) or objective(s) of the course (macro objective).
2. Clearly stated specific learning/behavioral objectives; that is, the intended learning outcomes expected (micro objectives). This, together with the macro objective, showed whether the course was conceptually or procedurally oriented.

3. The level of cognitive demand required for the topics.
4. The time allocated for each major topic within the course.
5. Recommended text plus additional reading references.
6. Administrative information, for example the weighting of marks allocated to each assessment.

As all of the Polytechnics have used the NZQA prescriptions for both the Accounting Principles and Accounting Practices papers as the bases for their course outlines, these have been used as the basis for the evaluation of the individual courses examined in this study. This is not unexpected as all the institutes are teaching the same NCB papers. Any changes made by a Polytechnic to the NZQA prescriptions, have been minor, except where stated otherwise. Details of the NZQA prescriptions for 100 and 101 are provided in Appendices I and II. Where an institute has not provided clearly stated specific learning objectives, the NCB objectives have been assumed to apply, as the major topics covered in each course by each institute are the same as the NCB topics.

Each assessment was also examined in detail. The purpose was to determine:

1. whether the assessments relate closely to the intended outcomes as specified in the course outline (that is internal consistency within the institute).
2. whether the assessments are appropriate given the classification either stated or implied in the course outline. This involved consideration of the level of cognitive demand in the assessments, based on Bloom's classifications in Tables 3.1 and 3.2.
3. whether the teaching time allocated for a topic was commensurate with the assessment weighting allocated to the same topic.
4. whether the overall objectives of the course had been achieved.
5. whether the assessments are procedurally or conceptually oriented. This relates to the criticisms made of accounting education as discussed in Section 3.1, and also to external objectives implied by the adoption of the new NCB Accounting Principles and Accounting Practices courses.

Points 1 - 4 above, regarding assessments, relate to objectives internal to each institute, while Point 5 relates to external objectives; namely NCB and educational objectives.

The results of the above analyses enabled an inter-Polytechnic comparison to be carried out. These results are shown in Tables 5.1 - 5.3. As the Polytechnics were told that institute names would not be used in this report, the institutes have been labelled A, B, C, D, E, and F.

The major categories of the cognitive domain used in this evaluation, in hierarchical order are: knowledge, comprehension and application. Although analysis, synthesis and evaluation are important classifications in Bloom's taxonomy, they are unlikely to be the primary objectives of introductory accounting courses. However, they were borne in mind throughout the study and examination of the information.

Where assessments use illustrative verbs from the analysis, synthesis or evaluation categories in Table 3.2; for example, distinguish, compare, contrast, describe, they have been examined closely to determine whether the questions do truly relate to that higher level of cognitive demand. Although it may be argued they do, this analysis has treated them as belonging to the comprehension category, as many questions using these verbs have been allocated a small number of marks. This appears to indicate that comprehension is the critical factor looked for in the answer, as opposed to the higher demands of analysis, synthesis and evaluation. Only where an assessment question using verbs illustrated in those three higher level categories in Table 3.2 has been allocated substantial marks have they been considered to belong to those higher categories of cognitive demand.

Where the following verbs have been used, they have been classified in the comprehension category of the cognitive domain; compare and contrast, describe, distinguish, explain, list and explain, give examples of, identify, outline.

Questions requiring students to prepare journals, ledgers and financial statements, or calculate, determine, show, compute the amount of, have been classified in the application category.

In summary, the analyses undertaken involved a critical appraisal of the appropriateness of each Polytechnic's course objectives and assessments, both internally, and in the light of current trends in accounting education in New Zealand. Summaries of those evaluations for each Polytechnic are provided in Appendices III, IV and V. An inter-Polytechnic summary is provided and explained in the following chapter.

CHAPTER 5. RESULTS OF THE STUDY

This chapter reports the results of the evaluations undertaken as described in the previous chapter. The results are summarised in three sections. Analyses of the 1990 and 1991 100 Accounting Principles papers are provided in Sections 5.1 and 5.2 respectively, whilst the analysis of the 1990 101 Accounting Practices paper is provided in Section 5.3. Summaries of the evaluations for each Polytechnic are provided in Appendices III, IV and V.

Within each section, the course outline and assessments of each Polytechnic has been analysed to evaluate the internal consistency between the stated (or implied) learning objectives and the assessment of those stated (or implied) objectives through tests, assignments, essays and exams. Where an institute has provided course details headed National Certificate in Business Studies, but has not provided general or specific learning objectives, then the learning objectives of the relevant NCB paper are assumed to be implied by that institute's adoption of the NCB prescription.

The tables contained in each section of this chapter provide an inter-Polytechnic comparison. Each table is followed by an analysis of the findings of the study.

SECTION 5.1. ACCOUNTING PRINCIPLES 1990

As the course name implies, this is a principles type course providing students with a basic understanding of financial statements and their components. It is essentially a course for users of financial statements. Therefore, an understanding of the underlying principles and concepts of accounting is the main focus of the course.

The new 100 prescription was introduced at Polytechnic D for the first time in 1991, so is not included in the following table and analysis.

TABLE 5.1

ACCOUNTING PRINCIPLES 100: 1990 SUMMARY OF ANALYSIS					
	Polytechnics				
	A	B	C	E	F
1. Purpose, general objectives of course clearly stated.	√	√	X	√	√
2. Specific learning objectives clearly stated.	√	√	X	√	√
3. List of weekly topics taught.	√	√	√	X	√
4. Weekly reading references provided.	X	√	X	X	X
5. a. Additional reading references provided.	X	√	√	√	X
b. Do reading references refer to users perspective?			√	X	√
7. Assessments test the learning objectives.					
a. stated in the course outline	√*	√		√	√
b. implied by adoption of NCB prescription			X		
c. at level stated/implied in course outline	√*	√	X	√	√
8. Assessment weighting allocations compatible with teaching time allocations per topic	X*	√	X	√	√
9. Weighting of Application: Comprehension in assessments	27:33	44:56	64:36	25:75	32:68
* See comment (4) paragraph 3.					

√ = Yes X = No

The following analysis of the results of the study is presented under separate sub-headings consistent with the summary in Table 5.1.

1. Course (Macro) and Learning (Micro) Objectives

All institutes except C provided general course and specific learning objectives. The macro objectives were brief, but clear and concise.

The specific learning objectives provided, are, in the main, exact copies of the NCB objectives as detailed in Appendix I. A minor exception is where A specifies that students should be able to prepare Balance Sheets and Profit Statements from given information.

A more significant exception is found in polytechnic C. C's course information and list of weekly topics taught is headed National Certificate in Business Studies and an examination of the weekly topics listed, indicates few changes from the NCB prescription, despite different topic headings. However, notes supplied with the course outline state that:

- a) whilst five methods of depreciation will be covered, only two will be tested;
- b) interpretative comments only will be required for analysis and interpretation of accounts; reports will not be required;
- c) financial statements will relate to service organisations only (including consumables).

It appears that these restrictions limit the coverage of the course in a way not intended for this NCB paper.

- d) data entry is to include general journals and ledgers.

The NCB prescription states that students are not expected to learn detailed accounting procedures.

2. Additional Reading References

The additional reading references provided have been taken from the NCB prescription. Of the three institutes which provided these, only C's references do not relate to a user oriented course of study in accounting. A, C and F state that additional references will be referred to throughout the course.

3. Textbooks

All the textbooks recommended in the course outlines or course information, except Robb's Dictionary are essentially preparer, practical texts, with varying levels of conceptually oriented explanations, despite Accounting Principles being a user oriented course. The selection of these texts illustrates the difficulties in obtaining a suitable user oriented text appropriate for the New Zealand situation and for this type of course. The texts may also have been chosen on the grounds of economy for students; that is, to cater for this paper and Accounting Practices.

Of those chosen as the student text by the Polytechnics, Harrison, et al., Gaffikin, et al. and Kirkwood, et al. do establish a balance between the conceptual issues and practical applications of accounting, and are therefore not entirely inappropriate for this course. However, the same cannot be said for Dixon, et al. It is considered both inappropriate and inadequate for this user oriented course. Its conceptual underpinnings of accounting are weak and the examples are not sufficiently comprehensive. It is not always well presented in logical sequence. Although C uses this text, its course outline states that a series of notes relevant to the topics being covered are handed out in class. It is expected that these notes would make up for the deficiencies of the text. A's text is also not regarded as adequate for this course on its own, but it is noted that the tutor will be referring also to other reference material available in A's library.

4. Assessments and the Level of Cognitive Demand

The assessments of E and F, and the theory and conceptual questions of B, test the stated learning objectives very efficiently across all topics. Most questions require students to demonstrate a high level of understanding of financial statements, and comprehension of accounting concepts. For example, a frequent requirement of questions is to compare and contrast, describe, suggest, explain what happens.

Application type questions requiring preparation of statements and calculation of figures, comprised 44% of B's assessments. This is a high percentage for a course which is essentially a course for users of financial statements. The same comments applies to institute C. 55% of C's total assessments require students to 'prepare' journal entries, ledger and final accounts. A further 9% require students to calculate figures. The result is that too few questions assess students understanding of the financial statements and conceptual issues. Fund statements are included in the course, cash flow statements are not. Given the revised SSAP 10, this omission is undesirable. Furthermore, the NCB prescription specifically states that "*students are not expected to achieve competency in detailed accounting procedures and calculations*" [p.1].

While it is not possible to determine adequately whether the objectives of A's course have been achieved without access to total assessments, it is possible to conclude that the exam questions are compatible with A's stated learning objectives. However, it is logical to expect that A's topics 3 and 5 (see Appendix II) would have been assessed in the final exam as they had not been covered at the time of the test. This is viewed as a weakness of A's final exam.

Each assessment of B covers a stated portion of the course. This results in the final exam being equivalent to another test, as opposed to assessing an overall understanding of the course. However, given the type of questions asked, this is not viewed as a serious weakness.

Table 5.1, (9) shows the proportions of the assessments requiring students to demonstrate either application or comprehension skills. This summary shows at a glance whether the assessments were concerned with placing greater emphasis on testing application or comprehension skills as described in Section 3.2.

Approximately two-thirds of Institute C's assessments test application skills. This was not the intention of the new NCB prescription and is not in accordance with current thinking in accounting education as discussed in Section 3.1. This contrasts with Institute E and F's assessments, which allocated only 25% and 32% respectively, to application category questions. Institutes A and B have chosen a balance between the application and comprehension type assessments.

5. Weighting Allocations

Overall, the weightings allocated to topics in the assessments are reasonably consistent with the teaching time allocated to those topics. However, the weightings given to exam questions on business failures and internal control (13%) by E were significantly higher than the weighting accorded these issues in the course outline (5%). However, they were reasonably searching questions requiring a high

level of understanding and comprehension with is in keeping with the stated learning objectives of the course.

Institute F allocated 10% of the teaching time to tests. As the programme does not state any topics taught in weeks when tests were held, it is not possible to be conclusive in this section of the analysis.

6. Summary and Conclusion

To conclude, all the assessments of E and F, and 45% of the assessments of B are very closely linked to their stated learning objectives and accomplish the overall aim of the course; that is, to provide students with a clear basic understanding of financial and accounting reports and statements, and their components. Without access to all of A's assessments it is difficult to come to an informed conclusion regarding the entire course.

The comments in (1) and (4) above with reference to Polytechnic C, provide the basis for concluding that the learning objectives implied by the adoption of the NCB prescription have not been achieved, nor adequately assessed by C. The learning outcomes are therefore incompatible with the implied learning objectives. Approximately 65% of assessments tested application of preparer-type skills and knowledge, yet the course objectives relate essentially to a course for users of financial statements.

The overall results indicate that the Polytechnics have adopted a more conceptual approach to the teaching of this introductory accounting course, (with the exception of Polytechnic C) in this, the first year of the new NCB prescription.

SECTION 5.2. ACCOUNTING PRINCIPLES 1991

The following table provides a summary of the analysis undertaken for the Accounting Principles paper for 1991. As Polytechnic E operates a full year as opposed to a two-semester programme, it has not yet completed the 100 course for this year and therefore has not been included in the study for this paper.

The following analysis of the results of the study is presented under separate sub-headings consistent with the summary in Table 5.2.

TABLE 5.2

ACCOUNTING PRINCIPLES 100: 1991 SUMMARY OF ANALYSIS					
	Polytechnics				
	A	B	C	D	F
1. Purpose, general objectives of course clearly stated.	√	√	√	√	√
2. Specific learning objectives clearly stated.	√	√	√	√	X
3. List of weekly topics taught.	√	√	√	√	√
4. Weekly reading references provided.	√	√	X	√	√
5. a. Additional reading references provided. b. Do reading references refer to users perspective?	X	√ √	√ X	√ X	X
7. Assessments test the learning objectives. a. stated in the course outline b. implied by adoption of NCB prescription c. at level stated/implied in course outline	X X	X X	X X	X X	√ √
8. Assessment weighting allocations compatible with teaching time allocations per topic	√	X	√	X	X*
9. Weighting of Application: Comprehension in assessments	57:43	68:32	50:50	44:56	40:60
* It is difficult to determine a conclusive answer given the time allocation to tests (13%), as the programme does not state topics taught in Test weeks					

√ = Yes X = No

1. Course (Macro) and Learning (Micro) Objectives

General course objectives were provided by all institutes. They were brief, but clearly stated. F was the only institute that did not provide specific learning objectives, so the NCB learning objectives are assumed to apply.

D's course outline is virtually an exact copy of C's 1990 Accounting Principles course outline. Although headed National Certificate in Business Studies, it changes a number of learning objectives stated in the NCB document. The comments made in Section 5.1, (1), paragraph 3 also apply here to Polytechnic D.

2. Additional Reading References

A and C provide additional reading references or notes during the course rather than in the course outline. Institutes B and D have provided the NCB list of additional references. No reference is made to additional readings by institute F.

3. Textbooks

The comments made in Section 5.1 (3) are also applicable here.

4. Assessments and the Level of Cognitive Demand

Polytechnic F was the only institute to make changes to its Accounting Principles 1990 course outline for this, the 1991 year, and those changes were relatively minor. So it was expected that the 1991 assessments would be similar to the 1990 assessments, in both the topics covered and the type or category of questions asked; that is application versus comprehension.

However, the analysis shows that in all cases, the 1991 assessments place greater emphasis on testing application skills. (See Table 5.2 (9)). There is a significant increase in the number of questions requiring students to 'prepare', 'calculate' and 'show how the following would appear'.

Evaluation of the test and final exam of Polytechnic B leads one to believe that the aim of the course was to enable students to calculate figures and prepare financial statements. 68% of the final exam primarily assesses accounting preparer skills. Interestingly though, no journal entries were required in the test or exam. There is little assessment of the learning objectives stated for data collection, accounting systems and budgeting, and the questions on business failures require a relatively low level of understanding of the objectives. The exam was of 2 hours duration. A 3 hour exam would have enabled coverage of these topics.

B's assessments are incompatible with the stated learning objectives of the course, and with the NCB prescription's learning objectives. 'Calculate' and 'prepare' are predominantly used all the assessments. Given this there are few situations where students are required to compare and contrast, discuss, explain, or justify. This is in stark contrast with the same course in 1990, yet the course outlines and objectives are for the most part identical, with only very minor changes in 1991, such as additional objectives stated for budgeting.

Polytechnics A and C allocated 57% and 50% of assessments respectively, to testing preparer skills, such as preparing journal entries, ledger accounts and financial statements. The result is that too few questions assess students understanding of the financial statements and conceptual issues. Despite this criticism, the conceptual questions asked in the assessments of both these institutes are of a good standard, requiring sound comprehension of accounting concepts and principles. However, one question in C's assessments concerning Partnership accounting (6%) really belongs in the Accounting Practices course.

The questions asked by D in assignment 1 are reasonably searching for an introductory accounting course. Evidence of research was stated as a requirement from students which is commendable. Students are expected to be familiar with relevant SSAP's. e.g. depreciation, inventory.

D's assignment 2 has the stated objectives of testing principles, application and technical skills over the breadth of the course. However, as this assignment, and part of assignment 1 involved number producing questions, the problem of students working together and copying arises. This would not be readily detectable, and there appears to be no way of knowing whether the assignment assessed an individual's understanding of the work assessed. This must reduce the validity of the assessments. 40% of total marks allocated by institute D for unsupervised assignments may be too generous.

Other assessments, such as the multichoice questions set by A (6.5%) cover a good range of topics and learning objectives. They are only allocated .5 of a mark each which is appropriate for the type of questions asked. By contrast, F's multichoice questions (4.5%) are simplistic with marks easily obtained.

Although A set no separate questions to assess understanding of data collection or systems, this topic is integrated well with a question on internal control requiring a sound knowledge and understanding of a basic accounting system.

F's final exam contains 10 questions, some of which contain parts 1, 2 and 3. Whilst this enables a broad coverage of the course and is suitable for some topics, it has the potential to require insufficient depth of comprehension in other areas.

Repetition of similar type questions is found in the test and the exam of Polytechnic B; 8% and 11% of the total assessments respectively.

5. Weighting Allocations

Polytechnic D allocated 50% and 19% of class time to its topics 2 and 3 respectively, yet 76% and 3% of the assessments relate to those topics.

Polytechnic F allocated 13% of the teaching time to tests. As the programme does not state any topics taught in weeks when tests were held, it is not possible to be conclusive in this section of the analysis.

6. Summary and Conclusions

Although Accounting Principles is primarily a course for users of financial statements, three of the five Polytechnic courses evaluated in this section, allocated 50% or more of the assessments to testing application category skills, as described in Section 4.2.

When the results of this analysis are compared with the results of 1990, it appears that the four institutes included in both years studies are reverting back to placing more emphasis on preparation of accounting data skills in the first introductory accounting paper. This is not consistent with the specific learning objectives published by those institutes and was not the intention of the new NCB prescription for Accounting Principles.

SECTION 5.3. ACCOUNTING PRACTICES 1990

All the Polytechnics included in this section of the study used the NCB prescription for Accounting Practices 101 issued by the NZQA as the basis for their Accounting Practices course outline or course information, in most cases providing the student with a copy of the NZQA's NCB prescription. (See Appendix II). This is therefore used as the basis for the analysis undertaken in this section.

In the absence of specifically stated learning objectives, it has been assumed that they are as stated in the NCB prescription, given that that was adopted by each institute.

As the course name implies, this is an applications type course requiring students to record transactions and prepare financial statements using both manual and computer applications. This requires the application of accounting rules, methods, concepts, principles, laws and theories to given situations. It also requires knowledge and understanding of accounting systems. Learning outcomes in this area require a higher level of understanding than those under comprehension.

Two polytechnics have been excluded from the evaluation of Accounting Practices. Polytechnic E introduced the new NCB 101 prescription in 1991. As it operates a full year as opposed to a two-semester programme, it has not yet completed a full 101 course and therefore has not been included in the study for this paper. No information was received from Polytechnic B for this paper.

The following table provides a summary of the analysis of the Accounting Practices course for the four Polytechnics, A, C, D and F.

Table 5.3

ACCOUNTING PRACTICES 101: SUMMARY OF ANALYSIS

		Polytechnics			
		A	C	D	F
1.	Purpose, general objectives of course clearly stated.	√	√	X	√
2.	Specific learning objectives clearly stated.	√	√	X	X
3.	List of weekly topics taught.	√	√	√	√
4.	Weekly reading references provided.	X	√	√	√
5.	Additional reading references provided.	X	√	X	√
6.	Computerisation:				
	a: stated in course course outline	√	X	√	X
	b: Assessed	√	√	X	√
7.	Assessments test the learning objectives				
	a. stated in the course outline	√	√		
	b. implied by adoption of NCB prescription			√	√
	c. at level stated/implied in course outline	√	√	√	√
8.	Assessment weighting allocations compatible with teaching time allocations per topic.	X	X	√	X

√ = Yes X = No

The following analysis of the results of the study is presented under separate sub-headings consistent with the summary in Table 5.3.

1. Course (Macro) and Learning (Micro) Objectives

Only Polytechnic D has not stated the general purpose or objectives of the course. Although specific learning objectives have not been provided by Polytechnics D and F, their lists of weekly topics taught, indicate to some extent, the objectives expected to be achieved. However, these are not clearly stated as expected learning outcomes.

2. Additional Reading References

The additional reading references provided have been taken from the NCB Accounting Practices prescription. Polytechnic C also recommends Westwood and Wheeler. Although no additional reading references are provided by A, it is stated that the tutor will be referring to other reference material available in the library. In F's course outline students are also referred to a number of magazines, periodicals and journals with which they are expected to be familiar. This is commendable.

3. Textbooks

Kirkwood, et al. is a useful basic text for a preparer, practice type course such as this. It is well presented in logical sequence, has good illustrations, explanations and examples, and covers all the topics in the course adequately. However, given that Accounting Principles is a prerequisite for Accounting Practices, it should not be the sole text used by the students as most of the conceptual issues have already been covered. A text(s) providing greater depth would be desirable for this course.

On the other hand, Dixon, et al. is not considered an appropriate text for this course. Its conceptual underpinnings of accounting are weak, and the examples are not sufficiently comprehensive. A's text is also not regarded as adequate for this course on its own.

4. Assessments and Level of Cognitive Demand of Assessments

Overall, the assessments are of a high standard. However, several issues are worthy of comment. The assignments set by D require an understanding of computerised accounting systems and hands on application of computer packages. They provide a broad assessment of the course and require students to demonstrate a range of skills and a good depth of understanding and comprehension. A's

computer assignment has not been supplied so cannot be assessed. F set a theory question on this topic in the exam.

The assignments set by D and F require students to demonstrate a good understanding of fundamental accounting concepts and principles covering both the content and the structural form of accounting systems. The learning level demanded in parts of these assignments exceeds the comprehension level, requiring a mix of the higher levels of analysis, synthesis and evaluation.

However, there is a possibility that students may have worked together on the assignments set by C and D, and part of F's. Part of F's and all of C's assignment involved mechanical record keeping, with very few marks allocated for explanations. Students could easily have copied each others work as the questions are number producing exercises. Any copying would probably go undetected, unless the answers showed significant and unusual errors. It would also be difficult to detect copying for parts of D's assignments. This raises the question of the validity of the assignments; do they assess the individual student's learning?.

The assessments of C contain repetition. For example, an incomplete records question in Test 2 (7%) assesses the same application skills as an exam question (6%). Further questions concerning debtors reconciliations in Test 1 (4%) and the exam (9%) are virtually the same. The assignment is a manual preparation of books of first entry to Trial Balance, plus presentation of final accounts. Manual preparation of books of first entry is also required in Test 2 (9%) while preparation of the final accounts is required in Test 1 (12%) and the exam (18%). Repetition is regarded as unsatisfactory unless it is for the purposes of retesting a poorly done earlier assessment. The degree of repetition leads to the conclusion that this was not the case for C. Institutes A and F reduce the risk of repetitive assessment by stating the topics that tests will assess.

Polytechnic A has integrated various components of the course well in the assessments, and applications have not always been assessed in isolation as with the other institutes. This is regarded

as commendable. For example, the test question for non-trading concerns incorporates a bank reconciliation. D's assignments, requiring computer applications also integrate the topics in the course well.

Although the use of multi-choice questions in tests and exams has enabled understanding and application of a range of issues to be assessed, the questions were not searching questions and the marks would be easily obtained. A and F used multichoice questions accounting for 5% and 4% of their total assessments respectively.

On the other hand, the use (by all the Polytechnics) of general journal entries as an assessment tool, covering a range of knowledge, skills, and breadth and depth of the prescription is to be commended.

5. Weighting Allocations

As shown in the summary above, the assessment weightings allocated to individual topics are generally in line with the teaching time allocated to those same topics. Exceptions include A and F; for example, F allocated 71% of assessments to the first topic, yet the class time allocated was much less than this. In the case of A, C and F, there is a discrepancy concerning accounting for clubs and societies.

In this area of analysis, there is some leeway where a Polytechnic has allocated time for review or revision.

6. Summary and Conclusions

To conclude, the general and specific learning objectives stated in the course outlines or implied by the adoption of the NCB prescription, for the most part, have been achieved very efficiently through the assessments. The assessments are considered quite appropriate for the type of course and the

learning objectives. Exceptions would be certain types of assignments for the reasons given in (4) above. Most of the practical preparer type questions are very similar across the assessments of all the Polytechnics, which is not unexpected. The assessments of A, D and F however, enable a better evaluation of students learning outcomes, than do those of C. This may be partially explained, firstly, by the fact the A and D incorporated computerised accounting into their courses, and secondly, by the degree of repetition in C's assessments.

CHAPTER 6. SUMMARY AND CONCLUSIONS

The purpose of this study was to provide a comparative analysis of the learning objectives and learning outcomes (assessments) for introductory accounting papers, Accounting Principles and Accounting Practices, at NDA accredited Polytechnics in New Zealand.

Chapter One outlines the importance, scope and limitations of the study. Chapter Two provides a brief history of tertiary accounting education and entry requirements into the accounting profession in New Zealand. Relevant previous research and the current issues of concern in accounting education are discussed in Chapter Three. Of particular importance, is the discussion on the need for a reorientation in introductory accounting courses towards a more conceptual approach, as opposed to the traditional approach of teaching students to 'prepare' financial statements from given data in their first accounting course. Chapter Three also outlines the theoretical basis of Bloom's taxonomy of educational objectives which is used in evaluating the two courses in this study. Chapter Four details the research method used, while Chapter Five provides summaries and analyses of the study.

It is concluded that overall, the 1990 Accounting Principles courses offered by the Polytechnics included in the study, have achieved the stated learning objectives and accomplished the overall aim of the course to provide students with a clear basic understanding of financial statements, and their components. With the exceptions noted in Section 5.1, the aims of the new NCB prescriptions have been achieved.

The same conclusion cannot be drawn from the analysis of the 1991 Accounting Principles courses in Section 5.2. This analysis leads to the conclusion that the Polytechnics are reverting back to the practice of placing a greater emphasis on students acquiring application category skills in this paper than was intended in the new NCB prescription, which all of the Polytechnics adopted.

However, the analysis of the Accounting Practices courses in Section 5.3 shows that all the Polytechnics have achieved the stated objectives.

Finally, given the changes to the introductory NCB papers, the recommendations of Horizon 2000 and discussions on the need for a reorientation of accounting education, a similar study concerning introductory accounting courses at Universities, and intermediate and advanced level financial accounting courses at both Universities and Polytechnics, would prove useful. This would determine whether a satisfactory emphasis is being placed on the conceptual underpinnings of accounting, and also whether independent logical thinking and the higher level skills of analysis, synthesis and evaluation, are being encouraged and developed in students of accounting at all levels.

APPENDIX I

The following is the prescription for the NCB paper 100 Accounting Principles issued by the NZQA. This is provided as all of the Polytechnics have used this as the basis for that paper and it therefore provides the basis for the evaluation of the individual papers examined in this study.

NCB PRESCRIPTION: 100 ACCOUNTING PRINCIPLES

AIM OF SUBJECT:

To provide students with a clear basic understanding of financial and accounting reports and statements and their components (from a small business to a public company).

At the completion of this subject students should be able to evaluate and understand the effect of transactions on a firm's financial statements, interpret results and understand how business performance is measured.

To this end the subject is expected to:

1. Lay a foundation for all subsequent accounting papers.
2. Ensure that a student who goes no further with accounting studies, can read and understand financial statements.
3. Encourage the development of an 'enquiring mind', i.e. to produce a thinking student.

Students are not expected to achieve competency in detailed accounting procedures and calculations.

TIME AND ASSESSMENT SCHEDULE: 100 ACCOUNTING PRINCIPLES

	Time in Hours	Highest Skill Level				Assmt in %s
		R	C	A	P	
TOPICS						
1. The Business Environment	4		.....		7
2. Financial Statements and Components	30		.....		50
3. Analysis & Interpretation of Financial Statements	18		.....		30
4. Data Collection	4		.....	.....	8
5. Business Failures	4		.....		5
	TOTAL 60				100%	

R = Recall C = Comprehension A = Application P = Problem Solving

1. THE BUSINESS ENVIRONMENT

The student shall be able to:

- C
- 1.1 Identify the purpose of a business.
 - 1.2 Compare and contrast the various forms of ownership of a business.
 - 1.3 Identify the resources of a business.
 - 1.4 Explain the circulation of resources as the basis of business activity.

- 1.5 Explain the information needs of interested parties.
 1.6 Understand the nature of Goods and Services Tax (GST).

2. FINANCIAL STATEMENTS AND COMPONENTS

2.1 BALANCE SHEETS

The student shall be able to:

- C 2.1.1 Understand the relationship between ownership of assets and financing of them (liabilities and owner's equity).
 A 2.1.2 Explain and apply the accounting equation and the effect of a variety of transactions on the Balance Sheet.
 A 2.1.3 Compare different methods of presentation.
 R 2.1.4 Distinguish between tangible and intangible assets.
 C 2.1.5 Explain the accounting concepts:
 - monetary unit
 - historic cost and revaluation of fixed assets
 - materiality
 - disclosure
 - going concern
 - accounting entity.

2.2 PROFIT AND LOSS (REVENUE/INCOME) STATEMENT

The student shall be able to:

- A 2.2.1 Define income and expenses and classify them into commonly accepted categories.
 A 2.2.2 Distinguish between capital and revenue income and expenditure.
 A 2.2.3 Explain and illustrate the effect of a variety of transactions on the accounting equation: $A = L + P(R-E)$.
 C 2.2.4 Explain the accounting concepts:
 - accounting period
 - realisation
 - materiality
 - disclosure
 - matching
 - prudence
 - true and fair view.
 A 2.2.5 Explain the effect of balance day adjustments on the financial statements (including provisions).
 C 2.2.6 Distinguish between abnormal and extraordinary items.

2.3 OWNER'S EQUITY

The student shall be able to:

- C 2.3.1 Distinguish between introduced and internally generated owner's equity.
 A 2.3.2 Describe and illustrate the components of owner's equity for sole traders, partnerships and companies.
 2.3.3 Describe the items included in and prepare a typical appropriation statement of a company.
 C 2.3.4 Explain the various ways in which reserves can arise.

2.4 FIXED ASSETS AND DEPRECIATION

The student shall be able to:

- R 2.4.1 Distinguish between depreciation, depletion and amortisation.
 R 2.4.2 Explain the cost allocation concept of depreciation.
 C 2.4.3 Identify the factors determining the depreciation charge.
 2.4.4 Apply various methods of calculating depreciation on fixed assets to given situations.

- 2.4.5 Describe the importance of procedures for controlling the purchase, storage/security and disposal of fixed assets.

2.5 INVENTORIES

The student shall be able to:

- C 2.5.1 Explain the nature and importance of inventories.
A 2.5.2 Compare the different methods of valuation commonly used and analyse their effect on profit and balance sheet.
A 2.5.3 Analyse the effect of under/over valuation of inventories on profit and asset values.
A 2.5.4 Describe the importance of procedures for controlling purchases, storage and sale of inventory.

2.6 FUNDS STATEMENT/CASH FLOWS

The student shall be able to:

- C 2.6.1 Explain the significance of cash flows.
A 2.6.2 Construct simple funds and/or cash flow statements.

3. ANALYSIS AND INTERPRETATION OF FINANCIAL STATEMENTS

(For both Sole Traders and Companies).

The student shall be able to:

- C 3.1 Explain the usefulness and purposes of financial statement analysis.
R 3.2 Identify the principal objective (return on owner's equity).
C 3.3 Identify the components of the return on equity
- profitability of operations
- asset utilisation
- financial stability.
A 3.4 Calculate ratios which measure effectiveness in each of these components.
A 3.5 Prepare a brief report commenting on:
- problems identified
- remedies available
- managerial performance.
A 3.6 Demonstrate the use of analysis in budgeting.
A 3.7 Identify other useful statistics which may be used in analysis of business, including financial market statistics.

4. DATA COLLECTION

The student shall be able to:

- C 4.1 Identify the principal source documents, including GST.
C 4.2 Describe briefly modern methods of collecting, processing, storing and reporting accounting data.
A 4.3 Prepare a chart of accounts.
R 4.4 Identify the appropriate system needs of different businesses.
C 4.5 Describe the inter-relationships within a system.

5 BUSINESS FAILURES

The student shall be able to:

- R 5.1 Describe the common causes of business failures.
C 5.2 Identify measures which may be taken to prevent business failure.
C 5.3 Understand the importance of credit control.
R 5.4 Understand the importance of internal control.

TEXTBOOKS for Accounting Principles recommended in AAVA's NCB Prescription

1. Gaffikin, M., Walgenbach, P.H., Dittrich, N.E. and Hanson, E.I. (1989). Principles of Accounting. 2nd Ed. Sydney: Harcourt, Brace, Jovanovich.
2. Rivett and Jones. (1986). Accounting: A Conceptual Approach. Commerce Clearing House.
3. Robb, A.J. (1981). Dictionary of Accounting Terms. Whitcoulls.
4. Hitching, C. and Stone, D. (1984). Understand Accounting. London: Pitman.
5. McDonald, R.C., Cooper, R.G. and Astill, B.J. (1983). Accounting for the Non Financial Executive. Auckland: Longman Paul.
6. Harrison, J., Horrocks, J., Newman, R. and Jenkins, R. (1987). Fundamentals of Accounting - A direct approach. 2nd Ed. Longman.
7. Dixon, B.R., Murphy, J.K. and Wells, P.K. (1988). Accounting: A Logical Approach. 2nd Ed. Auckland: Pitman.
8. Carrick, C. and Martin, C. (1987). Introduction to Accounting. McGraw Hill.
9. Financial Sections of Newspapers:
National Business Review
The Sunday Times
The Sunday Star
The Dominion
New Zealand Herald
The Evening Post
The Christchurch Press
The Otago Daily Times

The following texts are also included in individual Polytechnic's course outlines as additional reading references:

- A: A's Accounting Practice, Problem and Resource Book.
- C: Arnold, J., Hope, T. and Southworth, A. (1985). Financial Accounting. London: Prentice-Hall.
Wheeler, R.B. and Smyth, W.M. (1981). Introduction to Accounting. 3rd Revised Ed. Christchurch: Whitcoulls.
- D: Kirkwood, Ryan et al (1986). Accounting: An Introductory Perspective. Pitman.
Teixeira, A.M. and Emanuel, D.M. (1990). Accounting in New Zealand. Auckland: John Wiley and Sons.

APPENDIX II

The following is the NZQA prescription for Accounting Practices first introduced in 1990.

PRESCRIPTION: 101 ACCOUNTING PRACTICES

AIM OF SUBJECT: To record transactions and prepare financial statements for Sole Traders, Partnerships, Farms and or Clubs and Societies.

TIME AND ASSESSMENT SCHEDULE: 101 ACCOUNTING PRACTICES

TOPIC	Time in Hours*	Highest Skill Level**				Assmt in %s
		R	C	A	P	
1. Practical Accounting for Sole Traders	32	.....				60
2. Partnership Accounting	20	.....				25
3. Farm Accounting and/or Clubs and Societies	8	.....				15
TOTAL	60					100

* A recommendation and guide for the allocation of time.

** For each topic the highest skill level is shown by the position of the line. This also implies knowledge of the lower skills. R = Recall C = Comprehension A = Application P = Problem Solving.

1. PRACTICAL ACCOUNTING FOR SOLE TRADERS

The student shall be able to apply accounting techniques to:

- A 1.1 Record and store business transactions incorporating manual mechanical and computer applications.
- 1.1.1 Recognise and record the flow of revenue and expenditure transactions from the point of initiating the transactions to the storage of these transactions, including:
- source documents
 - journals (excluding tabular general journals and bills journals)
 - coding of transactions in accordance with chart of accounts
 - summarising into ledger accounts
 - preparation of trial balance.
- A 1.1.2 Reconcile transactions and accounts with other internal and external evidence including:
- reconciliation of bank account with bank statement
 - reconciliation of inventory record with physical stocktaking
 - reconciliation of control accounts with subsidiary records.
- A 1.1.3 Prepare the following subsidiary records:
- Petty Cash (including recording transactions in petty cash book, reimbursement and posting to the ledger)
 - Inventory records
 - Fixed Assets (including depreciation)
 - Receivables and Payables Ledgers.

- A 1.2 Preparation of Financial Statements for a Sole Trader
- 1.2.1 Prepare fully classified financial statements for a sole trader including:
- balance day adjustments
 - trial balance work sheets
 - balance sheets
 - statements of changes in financial position and cash flow statements.
- A 1.2.2 Prepare supplementary reports for a sole trader including:
- debtors aged trial balance
 - sales analysis
 - depreciation schedules

2. PARTNERSHIP ACCOUNTING

The student should understand the formation, operation and dissolution of business partnerships including the introduction of new partners and the retirement of existing partners.

- C 2.1 Explain the effect of the various profit sharing arrangements.
- A 2.2 Account for the formation of Partnerships:
- Opening the books of the partnership and recording the capital contributions of the individual partners.
- A 2.3 Prepare the Annual Accounts of a Partnership:
- Trading Account
 - Profit and Loss Account
 - Appropriation Account
 - Balance Sheet
- A 2.4 Account for the introduction of a new partner when:
- Goodwill is not shown in accounting records
 - Total goodwill is shown in accounting records
 - Partial goodwill is shown in accounting records
 - Assets and Liabilities are not recorded in the accounting records at agreed valuations.
- A 2.5 Account for the retirement of a partner when:
- Goodwill is not shown in accounting records
 - Total goodwill is shown in accounting records
 - Partial goodwill is shown in accounting records
 - Assets and Liabilities are not recorded in the accounting records at agreed valuations.
- 2.6 Account for the dissolution of partnerships
- Closing the books of a partnership, given details of the sale price of the assets.
- NOTE: The following items are excluded from this topic:
- Valuation methods for goodwill
 - Garner v Murray Rule
 - Piecemeal distributions
 - Conversion to a company
 - Life Insurance policies
 - Detailed knowledge of the various preferential rights of external parties.

3. FARM ACCOUNTING

The student shall understand the basic elements of farm accounts.

- R 3.1 Describe the specialised nature of farming activities.
- A 3.2 Prepare for a farmer the following financial statements:
- (i) Livestock and Produce operation statements
 - (ii) Income and Appropriation Statement
 - (iii) Schedule of Expenses
 - (iv) Balance Sheet

- (v) Statement of Cash Flows.

OR

4. ACCOUNTING FOR CLUBS AND SOCIETIES

The student shall understand the preparation and presentation of simple accounts and financial statements for Clubs and Societies.

- R 4.1 Describe the nature of clubs and societies and the effect of incorporation. (Incorporated Societies Act 1908).
- A 4.2 Prepare accounting reports in the most informative style for presentation to the Annual General Meeting and to comply with audit requirements.
- (i) Receipts and payments statements
 - (ii) Entrance fees, subscriptions and debentures
 - (iii) Trading activities
 - (iv) Income and expenditure statements
 - (v) Accumulated funds
 - (vi) Special funds
 - (vii) Balance sheets.

READING RESOURCES listed in the AAVA prescription:

1. NZ Society of Accountants Publications:
GU9
H3 Accounting for Clubs
Financial Reporting for Primary Producers (1989)
2. Gaffikin, M., Walgenbach, P.H., Dittrich, N.E., and Hanson, E.I. (1989). Principles of Accounting. 2nd Ed. Sydney: Harcourt, Brace, Jovanovich.
3. Robb, A.J. (1981). Dictionary of Accounting Terms. Whitcoulls.
4. Harrison, J., Horrocks, J., Newman, R. and Jenkins, R. (1987). Fundamentals of Accounting. 2nd New Zealand Ed. Auckland: Longman Paul.
5. Dixon, B.R., Murphy, J.K. and Wells, P.K. (1988). Accounting: A Logical Approach. 2nd Ed. Auckland: Pitman.
6. Carrick, C. and Martin, C. (1987). Introduction to Accounting. McGraw Hill.
7. Wheeler, R.B. and Smyth, W.M. (1981). Introduction to Accounting. 3rd Revised Ed. Christchurch: Whitcoulls.
8. Kirkwood, L. and Ryan, K. (1986). Accounting: An Introductory Perspective. Pitman.
9. Financial Sections of Newspapers:
National Business Review
The Sunday Times
The Sunday Star
The Dominion
New Zealand Herald
The Evening Post
The Christchurch Press
The Otago Daily Times

Other texts recommended by individual Polytechnics.

A: A's Accounting Practice, Problem and Resource Book.

C: Westwood, M. and Wheeler, R. (1990). Financial Accounting in New Zealand. Auckland: Longman and Paul.

APPENDIX III

The following tables provide summary information on each Polytechnic's Accounting Principles courses for 1990. Assessments have been classified into categories A (Application) and C (Comprehension)

A: SEMESTER II 1990 100 ACCOUNTING PRINCIPLES						
Weightings:	Assessments					
	Test 40%		Exam 60%		Total 60%	
Topics and Time Allocation:	A	C	A	C	A	C
1. Business Environment (6%)						
2. Financial Statements & Components (50%)			24	14.5	24	14.5
3. Data Collection & Systems (7%)						
4. Analysis & Interpretation (23%)			3	18.5	3	18.5
5. Business Failures & Internal Control (7%)						
6. Revision (7%)						
					27	33

Note: The Test covering topics 1 and 2 was not received from the institute.

Text: A' Accounting Practice, Problem and Resource Book.

POLYTECHNIC B: Semester 1 1990 100 ACCOUNTING PRINCIPLES								
Weightings:	Assessments							
	T1 30%		T2 30%		Exam 40%		Total 100%	
Topics and Time Allocation:	A	C	A	C	A	C	A	C
1. Business Environment (7%)		4.5						4.5
2. Financial Statements & Components (50%)	16	9.5	8.5	12.5			24.5	22
3. Data Collection & Systems (10%)				9				9
4. Analysis & Interpretation (26%)					19.5	15.5	19.5	15.5
5. Business Failures (7%)						5		5
							44	56

Text: Harrison, et al.

POLYTECHNIC C: Semester 1 1990
100 ACCOUNTING PRINCIPLES

Weightings:	Assessments							
	T1 20%		T2 20%		Exam 60%		Total 100%	
Topics and Time Allocation:	A	C	A	C	A	C	A	C
1. Accounting & its Environment (7%)						5		5
2. a. Classified Balance Sheet (10%)* b. Classified Revenue Stmt (10%)* c. Balance Day Adjustments, Closing Journal Entries & Reversals (13%)	7.5	6.5	3.5	2.5	14	4	25	13
3. Funds Statement (7%)	1.5				9		10.5	
4. Business Failures & Internal Controls (7%)		1		3		1		5
5. Data Entry & Inventory (23%)			9		8	1	17	1
6. Depreciation & Disposal of Fixed Assets (7%)					9	4	9	4
7. Analysis & Interpretation (3%)	2	1.5	1	1		6	3	8.5
8. Consolidation & Review (3%)								
9. Tests (10%)								
							64	36

Text: Dixon, et al.

* Related ratio analysis is included.

POLYTECHNIC E: 1990
100 ACCOUNTING PRINCIPLES

Weightings:	Assessments					
	Assign 20%		Exam 80%		Test 100%	
Topics and Time Allocation:	A	C	A	C	A	C
1. Business Environment (7%)				7		7
2. Financial Statements & Components (50%)	6	9	6.5	27	12.5	36
3. Analysis & Interpretation (30%)			8	14.5	8	14.5
4. Data Collection (8%)	4	1		4	4	5
5. Business Failures (5%)				13		13
					24.5	75.5

Text: No one specified, but students are expected to refer to the texts listed in the NCB prescription.

POLYTECHNIC F: Semester 1 1990
100 ACCOUNTING PRINCIPLES

Weightings:	Assessments									
	T1 15%		T2 15%		Ass* 20%		Exam 50%		Test 100%	
Topics and Time Allocation:	A	C	A	C	A	C	A	C	A	C
1. Business Environment (7%)										
2. Financial Statements & Components (45%)	3.5	9.5	8	7			13	29	24.5	45.5
3. Data Collection & Systems (7%)		2						3		5
4. Analysis & Interpretation (17%)					7	13			7	13
5. Business Failures (7%)								5		5
6. Tests (10%)										
7. Revision (7%)										
									31.5	68.5

Text: Gaffikin, et al and Robb's Dictionary.

* The assignment was given to students who later completed it under supervision.

APPENDIX IV

The following tables provide summary information on each Polytechnic's Accounting Principles course for 1991. Assessments have been classified into categories, A (Application) and C (Comprehension)

A: Semester 1 1991 100 ACCOUNTING PRINCIPLES						
Weightings:	Assessments					
	Test 40%		Exam 60%		Total 100%	
Topics and Time Allocation:	A	C	A	C	A	C
1. Business Environment (6%)		5				5
2. Financial Statements & Components (60%)*	27.5	7.5	17	7	44.5	14.5
3. Data Collection & Systems (7%)						
4. Analysis & Interpretation (20%)			13	13	13	13
5. Business Failures & Internal Control (7%)				10**		10
					57.5	42.5

Text: A' Accounting Practice, Problem and Resource Book.

* Specifically includes preparation of balance sheets and profit statements from given information.

** 50% of the assessment of this topic implies knowledge and understanding of a basic accounting system.

POLYTECHNIC B: Semester 1 1991 100 ACCOUNTING PRINCIPLES								
Weightings:	Assessments							
	Ass* 20%		Test 30%		Exam 50%		Total 100%	
Topics and Time Allocation:	A	C	A	C	A	C	A	C
1. Business Environment (6%)		2		5				7
2. Financial Statements & Components (53%)	11	3	20	5	31		62	8
3. Data Collection & Systems (7%)		2						2
4. Analysis & Interpretation (20%)		2			6	10	6	12
5. Business Failures & Budgeting (7%)						3		3
6. Tests (7%)								
							68	32

Text: Gaffikin, et al.

* Comprises 10 assignments worth 2% each.

POLYTECHNIC C: Semester 1 1991
100 ACCOUNTING PRINCIPLES

Weightings:	Assessments							
	T1 20%		T2 20%		Exam 60%		Total 100%	
	A	C	A	C	A	C	A	C
Topics and Time Allocation:								
1. Accounting & its Environment (7%)				6				6
2. a. Classified Balance Sheet (13%)*		8	6			6	6	14
b. Classified Revenue Statement (13%)*	6.5				12		18.5	
(Analysis and Interpretation)	3	2.5			2.5	10.5	5.5	13
c. Balance Day Adjustments, Closing Journal Entries & Reversals (20%)					10		10	
3. Business Failures & Internal Controls (3%)				6		2		8
4. Data Entry & Related Controls, & Inventory (30%)**				2	6	2	6	4
5. Depreciation & Disposal of Fixed Assets (7%)					4	5	4	5
6. Tests (7%)								
							50	50

Text: Dixon, et al.

* Related ratio analysis is included.

** Questions involving data entry have also been included in assessments of Topic 2.

POLYTECHNIC D: Semester 1 1991
100 ACCOUNTING PRINCIPLES

Weightings:	Assessments							
	Ass1 20%		Ass2 20%		Exam 60%		Total 100%	
Topics and Time Allocation:	A	C	A	C	A	C	A	C
1. Business Environment (6%)						3		3
2. Financial Statements & Components (50%)*	4.5	15.5	11.5	8.5	23	13	39	37
3. Data Collection, Systems & Controls (19%)						3		3
4. Analysis & Interpretation (13%)**					5.5	9.5	5.5	9.5
5. Business Failures (6%)						3		3
6. Review (6%)								
							44.5	55.5

Text: Kirkwood, et al.

* Includes preparation of general journal, general ledger and balance day adjustments.

** Analysis is limited to brief comments and excludes a report.

POLYTECHNIC F: Semester 1 1991
100 ACCOUNTING PRINCIPLES

Weightings:	Assessments									
	T1 15%		T2 20%		Ess 15%		Exam 50%		Total 100%	
Topics and Time Allocation:	A	C	A	C	A	C	A	C	A	C
1. Introduction to Accounting (6%)										
2. Financial Statements & Components (40%)	4	11	9	1		15	13.5	18.5	26.5	45.5
3. Data Collection & Systems (7%)								3		3
4. Analysis & Interpretation (13%)			6	4			4	1.5	10	5.5
5. Accounting for Corporate Groups (7%)							3.5	1.5	3.5	1.5
6. Budgeting & Controls (7%)								4.5		4.5
7. Tests (13%)										
8. Revision (7%)										
									40	60

Text: Gaffikin, et al.

APPENDIX V

The following tables provide summary information on each Polytechnic's Accounting Principles (or equivalent) courses for 1990 (1991 for Polytechnic A). Assessments have been classified into categories, A (application) and C (Comprehension).

<u>POLYTECHNIC A: SEMESTER 1 1991</u>									
<u>101 ACCOUNTING PRACTICE</u>									
<u>Weightings:</u>		<u>ASSESSMENT</u>							
		TT 30%		ASS 10%		EX 60%		TL 100%	
		A	C	A	C	A	C	A	C
TOPICS AND ALLOCATION:									
1	Accounting for Sole Traders (47%) Computerised systems (20%)	19	11	10		10	4	39	15
2	Partnership Accounting (20%)					27		27	
3	Accounting for Clubs and Societies (13%)					19		19	
								85	15
Textbook A's Accounting Practice, Problem and Resource Book									

<u>POLYTECHNIC C: Semester II 1990</u>											
<u>101 ACCOUNTING PRACTICES</u>											
<u>Weightings:</u>		<u>ASSESSMENT</u>									
		TT 15%		TT 15%		ASS 10%		EX 60%		TL 100%	
		A	C	A	C	A	C	A	C	A	C
TOPICS AND ALLOCATION:											
1	Accounting for Sole Traders (53%)	15		7		10		18		50	
2	Partnership Accounting (27%)			8				13	8	21	8
3	Accounting: Clubs & Societies (13%)							21		21	
4	Revision (7%)										
								92	8		
Textbooks: Dixon, et.al.,											

POLYTECHNIC D: SEMESTER 2 1990
101 ACCOUNTING PRACTICES

		<u>ASSESSMENT</u>											
		<u>Weightings:</u>		TT 30%		ASS 10%		ASS 10%		EX 50%		TL 100%	
		A	C	A	C	A	C	A	C	A	C		
TOPICS AND ALLOCATION:													
1	Accounting for Sole Traders (56%) Accounting Systems (computerised)*	30								20		50	
				10		10						20	
2	Partnership Accounting (19%)									11	6	11	6
3	Accounting for Clubs and Societies (12.5%)									13		13	
4	Revision (12.5%)												
											94	6	
Textbook: Kirkwood, et al. and computer Guidebook Class set.													
* the timetable states that half the weekly class time is allocated to computerised accounting													

POLYTECHNIC F: Semester II 1990
125 ACCOUNTING SYSTEMS

		<u>ASSESSMENT</u>											
		<u>Weightings:</u>		TT 15		TT 15		ASS 20		EX 50		TL 100	
		A	C	A	C	A	C	A	C	A	C		
TOPICS AND ALLOCATION:													
1	Accounting for Sole Traders (53%) Accounting Systems)	11		11		6	14	18.5	8	46.5	22		
			4							4			
2	Partnership Accounting (20%)			4				13.5		17.5			
3	Accounting: Clubs & Societies (20%)							10		10			
4	Revision (7%)												
											78	22	
Textbooks: Kirkwood, et.al., and Robb's Dictionary													

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