CONCEPTUALISATIONS OF TEACHING AND LEARNING

IN THE POLICIES OF THE NZQA:

CRITIQUE AND CASE STUDIES

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF EDUCATIONAL ADMINISTRATION

AT MASSEY UNIVERSITY, NEW ZEALAND

JOHN PERRY

2000

ABSTRACT

The study originated from a concern that the nature of teaching in polytechnics was undergoing a fundamental change. Increasingly, it seemed, teaching and learning were being seen as the means for achieving measurable outcomes, rather than as processes, valuable in their own right, encompassing outcomes that are difficult to define and measure.

The research aimed to discover whether, in the context of changes associated with the educational reforms, which began impacting upon teaching in New Zealand polytechnics in the late 1980s and continued into the 1990s, polytechnic lecturers were conceptualising teaching and learning in a similar way to the conceptualisation implied by the reforms.

A major part of the study involved exploratory case studies of six polytechnic lecturers, aimed at discovering how the lecturers conceptualised teaching and learning. Data were collected by means of semi-structured interviews. Attention was given to not only the surface meanings clearly expressed by the lecturers, but also to deeper meanings and influences that may not have been clear to the individual lecturers, and, thus, not accessible by direct questioning. Three automotive engineering and three nursing lecturers were chosen for the case studies.

Documents and legislation relating to teaching and learning in polytechnics were analysed to find how teaching and learning were conceptualised. The conceptualisation inferred from the document analysis was attributed to the New Zealand Qualifications Authority (NZQA) which , in effect, is the government's "arm" developing and implementing policies and changes affecting teaching and

learning in polytechnics, including changes related to the National Qualifications Framework.

The findings reveal a marked contrast between the lecturers' and the NZQA's conceptualisations. The NZQA is inferred to conceive that the means are separated from the ends of teaching and learning; learning and knowledge are capable of precise description, pre-specification and accurate measurement; knowledge comprises the sum of its discrete components; and knowledge has a universal character. Whereas, with exceptions on some points, the lecturers are inferred to conceive that teaching and learning involve a continuing process in which the means and the ends are integrated; that teaching, learning and knowledge include more than can be described precisely, pre-specified and measured accurately; that holistic knowledge involves more than the sum of its component parts; and that knowledge is related to its context.

The NZQA's conceptualisation is argued to be consistent with economics discourses while the lecturers' .conceptualisations are argued to be consistent with education discourses.

An interpretation of the differences between the NZQA's and the lecturers' conceptualisations, through the frames of poststructuralism and critical discourse analysis, suggests that the lecturers may be resisting the power-holders economics-based discourses because they are simultaneously influenced by, what are for them, more influential, educationally-based discourses.

A further analysis of documents indicated a change to the NZQA's conceptualisation, but no change to the means-ends conception implicit in its objectives/outcomes model of curriculum development and teaching.

The validity of the findings from the document analysis and the case studies is supported by their consistency with educational literature. However the research was qualitative and exploratory and no claim is made that the findings are generalisable. The research, nevertheless, does raise an important question concerning the consequences for knowledge, if today's professional lecturers become tomorrow's technician-lecturers. It also suggests the need for more than one curriculum model in courses.

ACKNOWLEDGEMENTS

Firstly, I wish to thank the six polytechnic lecturers who willingly gave their time to talk about their teaching practice. I valued the opportunity to share their thoughts and experiences and was impressed by their professionalism and commitment to their work. I felt good about the work they were doing. I hope they do, too.

I am deeply indebted, too, to my supervisor, Professor John Codd, who quietly encouraged me, provided valuable feedback and helped me to get back on track when the first approach I chose to take simply did not work. At the same time, I am grateful to have had the opportunity to develop my topic in my own way. It has been an excellent learning experience. I wish, too, to thank Dr Janet Burns for her support and encouragement. Associate Professor Wayne Edwards is another member of the Massey staff to whom I am particularly indebted. He encouraged me to enrol for an M.Ed.Admin. in the first place and encouraged me to keep going at a stage when I was about to give up.

Recently, I read in the acknowledgments in a colleague's thesis that he had come to appreciate how selfish this kind of study is. He is right. My wife, Elizabeth, has had a lot to put up with over the last few months - and longer! Yet, so often she has unselfishly put her interests aside to discuss ideas, make suggestions and proof read my drafts.

Special thanks are due, too, to other family members - my mother, my brothers, their wives and our children, Megan, Marianne and Matt -all of whom have given me support and encouragement. Perhaps now that I have finally finished, my grandchildren, Alexander and Emily-May, will see me more often.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

"We must measure the achievements of our students against pre-determined standards."
(Smith, 1992: 6)

"The building blocks of the framework are units of learning, designed around clearly specified outcomes."
(NZQA, 1991a: 36)

THE INSPIRATION, THE CONCEPT AND THE QUESTIONS

The inspiration and the concept

It was concern about the conception of teaching and learning implied by statements such as the above that inspired this thesis. In that sense the author is grateful to the Minister of Education, who made the first statement in his speech of welcome, at the *Qualifications for the 21st Century International Conference*, in 1992; and to the New Zealand Qualifications Authority (NZQA) which published the second, in *Designing the Framework.*

The early 1990s was a period when changes initiated by the government and developed and implemented by the NZQA began to impact upon the practice worlds of polytechnic lecturers and administrators, including the author's practice world. By 1995, the date when the present study was first begun, the changes, together with the thinking in which they were embedded, appeared to be changing the very nature of teaching and learning.

Intuitively, the author questioned the assumption that improved education would be achieved by changes which emphasised such aspects as efficiency, the measurement of educational outputs, accountability and an education system mainly designed to serve the country's economic needs. There seemed to be greater concern for students to attain measurable outcomes rather than, for

example, to learn how to learn so that they could continue to learn, or to develop enthusiasm for learning and to enjoy learning. There was, the author believed, a difference in the way in which teaching and learning were being conceived by the government and the NZQA, on the one hand, and by at least some educators, including himself, on the other hand.

More specifically, it seemed that:

- Learning was being conceived as a product or an end rather than as a process.
- Skills and knowledge were being conceived as being definable and measurable rather than to include forms that were difficult to capture in words and to measure.
- Learning and knowledge were being conceived as a measurable product rather than as a human quality.
- Learning and knowledge were being conceived as the sum of discrete pieces of knowledge at the expense of their holistic character.

The question at this point in relation to planning the present study was whether intuitive knowledge was a sound basis from which to initiate research. However, a brief study of Schon's writing (1983, 1987) and that of others, such as Polanyi (1957, 1967) and Benner (1984), confirmed that intuitive knowledge is indeed a worthwhile form of knowledge and that it ought to be recognised, particularly the intuitive knowledge of an experienced professional practitioner in a particular field.

At the time the study began, the author was a senior administrator in a polytechnic with thirty-six years' experience in teaching and educational administration - eleven years in the primary school sector and twenty-five in polytechnics. Thus the decision to initiate the present research is argued to be soundly based.

The next question in planning the study was whether how people think about or conceive teaching and learning matters anyway. Does it make any difference to what students' learn? Codd (1989: 166) argues that how we see things is influenced by the theories that we hold. He concludes that the dichotomy which is often presumed to exist between observation and action is false and that there is "...a strong case for the position that all practice is theory laden". Croft (1993), in his discussion of assessment, provides what is in effect an example of Codd's point. He suggests that the "knowledge and expectations that teachers and other experts have developed about the performance of other learners" (p.6) influences them when they attempt to define or set standards in standards-based assessment. Croft believes that often teachers do not set standards based solely upon performance as espoused by advocates of standards-based assessment, but actually base their "standards" upon comparison with other students (which is actually norm-referenced assessment, not standards-based assessment). In other words, the teachers and other experts are influenced, more or less unconsciously, by the standard (or theory) that they carry in their minds.

Thus an implication from Codd's and also from Croft's writing is that teachers' personal theories influence how they see things and what they do, without them being consciously aware of how they are being influenced. Both Wittgenstein's (1953) writing and Hanson's (1958) writing also support the notion that people's concepts and theories unconsciously influence them to see situations in particular ways. [Also see the discussion relating to Kuhn's (1970) and Carr and Kemmis's (1986) views on scientific paradigms, in Chapter Four]. However, the influence of personal theories may not always be unconscious.

In the following quotation Boud (1993: 33), who also supports the notion that people have their own personal theories, implies that people are at least vaguely aware of their theories, even if they cannot articulate them:

> Each of us has our own theories and conceptual frameworks which influence and inform what we do and how we do it; ...//...However, these theories are usually unarticulated, quite private and perhaps difficult to justify.
>
> (Boud, *ibid.: 33*)

Boud's personal theories are rather like Schon's (1983, 1987) *knowing-in-action*, which is an intuitive form of knowledge learned from experience (see Chapter Four).

Hanson (1979) describes empirical evidence of what, in effect, constitute personal theories held by teachers at a conscious level. He found that teachers considered they were the ultimate authorities on the teaching-learning process because of their expertise in specialised fields. They considered they had the right to organise the learning process in the way they chose and that their position as teachers gave them the right to differ from stated policy and instructions. The following observation by Beeby (1974) also supports the notion of teachers consciously holding personal beliefs or theories. He makes the point that unless teachers understand and personally accept qualitative changes which are being introduced by educational reformers, no change will occur:

> The saddest lesson every official educational reformer has to learn is that teachers, under the pressure of instructions they have not understood or accepted, have an infinite capacity for going on doing the same things under another name, so that only the shadow of progress can be achieved by regulations and exhortation.
>
> (Beeby, 1974: 25)

Thus there is evidence for believing that theory and practice are inextricably linked, that teachers' theories affect their teaching practice and thus, one would assume, how and what students learn. There is also evidence suggesting that teachers hold views or personal theories which influence how they think and what they do. It appears that sometimes teachers may not be aware of these views or theories;

sometimes they may be only vaguely aware of them; and sometimes they may be fully aware of them. Or perhaps the "truth" lies somewhere between the two extremes: that is, teachers hold and are influenced by views and theories of which they are only partially aware. The point to be made here is that the notion of personal theories is not entirely clear, nor is the matter of how these theories might be constituted.

The present study explores and elaborates teachers' personal theories or conceptualisations of teaching and learning. In the present climate of educational reforms, understanding how teachers think about their work is particularly important. It seems that, along with "new" requirements, new ways of thinking are being imposed upon teachers, students and the population in general (see Chapter Four), more than likely without their full awareness.

The general purpose, then, of the study is to try to ascertain whether there are differences between the way teachers think about their work and the thinking implied by those imposing changes. If such differences are shown to exist, knowing what implications the differences might have for teaching and learning becomes important. A more specific statement of the purpose of the present study and of the research questions follows:

Purpose and the research questions

The purpose of the research is to discover whether in the context of changes associated with educational reforms in New Zealand over the last decade and a half, polytechnic lecturers hold personal conceptualisations about teaching and learning that are different from the official conceptualisation implied by the reforms and subsequent developments; and, if so, to discover whether educational and related literature offers a critical and theoretical understanding of the different conceptualisations and their possible implications.

The questions, then, to which answers are sought in the study are:

1. What are the main features of the conceptualisation of teaching and learning that can be inferred to underlie legislation and policy aimed at reforming education and at implementing the reforms in polytechnics, particularly through the NZQA?

2. What are the main features of the conceptualisations of teaching and learning revealed in case studies of six polytechnic lecturers (three nursing lecturers and three automotive engineering lecturers)? More specifically:

2.1. What are the similarities and differences amongst the conceptualisations of the three automotive engineering lecturers?

2.2. What are the similarities and differences amongst the conceptualisations of the three nursing lecturers?

2.3. What are the similarities and the differences between the automotive engineering lecturers' and the nursing lecturers' conceptualisations?

2.4. What, if any, combined conceptualisation of teaching and learning can be constructed from, and be consistent with, the conceptualisations of the six individual lecturers?

(Question (2.4) was later deleted - see Chapter Two, "Development of Research Questions During the Study".)

3. If a combined conceptualisation of teaching and learning can be satisfactorily constructed for the six lecturers, what, if any, are the main differences between the six lecturers' conceptualisations and the conceptualisation of teaching and learning implicit in recent legislation and policy?

[Question (3) was later amended to read: "What, if any, are the differences between the NZQA's and the six lecturers' conceptualisations of teaching and

learning?" - see Chapter Two, Section Three "Development of Research Questions during the Study".]

4. What critical and theoretical understanding does educational and related literature offer regarding the governments' and the six lecturers' conceptualisations of teaching and learning?

5. What implications for teaching and learning in polytechnics are suggested by the critical and theoretical understanding of any differences between the lecturers' conceptualisations of teaching and learning and conceptualisations implicit in policy?

[See also discussion of "the question of 'ownership' of the 'official' conceptualisation of teaching and learning" in Chapter Two, Section Three, "Development of Research Questions During the Study".]

If, as argued, theories shape what we see, it is particularly important to clarify the philosophical perspective taken in the present study. This is accomplished in the next section as a preliminary to reporting upon and discussing in the following chapters research aimed at answering the above five questions.

CHOICE OF PHILOSOPHICAL BASE TO THE RESEARCH

Writers describe three distinctive philosophical paradigms in which educational research has been based in recent years. They are sometimes described by the terms positivism, interpretivism and critical theory (or critical social science) (Carr and Kemmis, 1983, 1986; Codd, 1993a; Fay, 1987). At other times alternative terms are adopted. Foster (1986), for example, terms the three paradigms "the functionalist perspective, the phenomenological alternative and the critical model" (p. 59). Codd (1993b), in outlining curriculum issues, refers to the objectives

model, the deliberative approach and the critical approach. And Habermas (1972), in his theory of *knowledge constitutive interests*, describes essentially the same three paradigms under different names. He theorises about how knowledge is socially constructed according to three different scientific interests - a technical, practical or emancipatory interest.

Although positivism and interpretivism are rejected as philosophical bases for the study, they are described below in order that readers might judge for themselves the reasons for their rejection. They are also described because they are the philosophies which underpin some of the opposing views described in the study.

Positivism

Positivism, as it applies to social sciences, characteristically attempts to adopt the aims, concepts, methods and models of explanation used by the natural sciences. Fundamental to this paradigm is the view that truth exists in the form of universal theory or laws that can be discovered by means of scientific methods. Truth is conceived to be universal and to exist independent of any particular social or historical context. The data of social sciences, as in the natural sciences, are phenomena that can be observed objectively from the neutral stance of the researcher in accordance with methods adopted from the natural sciences. Anything that cannot be observed directly by the senses and quantified is excluded from the research (Carr and Kemmis, 1983; 1987). This means that values, beliefs, purpose and other subjective human experience - the main concerns in the present study - are excluded. As Hughes (1990: 94) states in his criticism of positivism, "those features which make social life a distinctively *human* product are analysed out". Thus positivism was rejected as a theoretical base for the present study.

Interpretivism

At first interpretivism may seem to be a more satisfactory theoretical base than positivism for the present study. Hughes (*ibid*), for example, points out that, in direct contrast to positivism, interpretivism places the subjective elements of human experience at centre stage. Purposes, intentions and values are the focus of interpretivism's attentions. Interpretivism certainly is better suited than positivism as a theoretical base for the study.

Greenfield (1975) describes interpretivism's notion of social reality as images in the minds of human beings having no particular form apart from that attributed to them by humans. Carr and Kemmis (*1983; 1987*) explain how, within the interpretivist view, society may still be seen to have an objective character. But this character is not seen to be derived from an independent reality or laws to which individuals are somehow subject. Rather it is seen to be derived from the way in which people externalise and objectify their understandings formed in the process of interpreting their external world. Consequently, people's notion of their social world may come to assume a degree or form of objectivity. Their social world becomes 'real' and 'objective' insofar as they interpret and react to it in that way (i.e., it becomes a material force in the construction of their reality). Considered in this way, the apparent or assumed objectivity of the social world is accommodated within the conception of social knowledge as a social construction.

Interpretivism may accept that humans externalise and objectify social reality in the course of interpreting their social institutions, but this is still conceived by interpretivism as an objectification of reality or truth which is actually located in the human mind.

To interpretivists, then, reality and truth are human creations existing in people's minds, rather than existing in universal forms. Further, there are multiple truths

related to the understandings and values of particular individuals or groups of individuals in time and space, rather than universal truths across time and space. But deciding which of the multiple or relative truths ought to prevail is potentially problematic under interpretivism. Smith (1987: 108) suggests the resolution of the problem of multiple truths resides in "agreement based on dialogue among people who hold different interests and values".

Interpretivism was rejected as the theoretical base for the present study not because it conceives truth to be multiple or relative, but more because it assumes that people understand their social situations and that (relative) truth will be available through individual and collective understandings. Instead, the contrary argument advanced by critical theorists was accepted. They believe that people often "misunderstand" their social situations (Carr and Kemmis, 1983, 1986; Fay, *op. cit.*; Foster, *op. cit.*; Freire, 1970; Habermas, *op. cit.*). If indeed this is so, the interpretive paradigm is seriously flawed, because its fundamental data is false (Carr and Kemmis, 1983). Also, as Clare (1990) points out, interpretivism omits the critique of social and political forces. It focuses upon people's understandings rather than the ways in which understanding is shaped by the social and political context (Carr and Kemmis, 1983, 1986; Fay, *op. cit.*; Foster, *op. cit.*; Freire, 1970; Habermas, *op. cit.*). Thus another reason for the rejection of interpretivism as the theoretical base for the present study is that it does not encourage the examination and questioning of social and political influences upon teaching and learning and the construction of knowledge.

Critical theory

Critical theory, like interpretivism, acknowledges that consciousness defines reality, but, as indicated, maintains that it is equally true that "reality" may systematically distort (or shape) consciousness (Carr and Kemmis, 1983.). Codd (1993a) describes how, since its beginnings in the Frankfurt School, critical theory

has been concerned with the critique of culture and ideology in advanced "democratic" capitalist societies. It is not a body of theory in the usual sense, but a form of enquiry which takes a critical perspective in opposition to manifestations of ideology or dogma. In so doing, it rejects theories that take existing social questions as given or leave unquestioned the basic contradictions of wider society. Thus its "purpose is to analyse and reveal the discrepancy between the actual and the possible, between social conditions as they are and the new conditions that could be produced by social action" (Codd, *ibid.*: 14).

There may, as Anderson (1989) suggests, be a danger of the critique and subsequent action being biased towards the views of the critical theorist. But exponents (for example, Carr and Kemmis, 1983, 1986; Fay, *op. cit.*; Foster, *op. cit.*; Freire, 1970; and Habermas, *op. cit.*) seek to involve those who are being researched as co-researchers who, on the basis of their new understandings, democratically make decisions and take action for change. This is the emancipatory aim of critical theory. It inevitably involves issues of power and politics (Carr and Kemmis, 1983, 1986; Codd, 1993a; Fay, *op. cit.*; Foster, *op. cit.*; Freire, 1970; Grundy, 1987; Habermas, *op. cit.*).

In his theory of *communicative competence*, Habermas (*op. cit.*) theorises that democratic speech and communication imply the existence of what are in effect universal moral values. He analyses an *ideal speech situation* to reveal rules which enable people to share meanings and come to understandings. He argues that the moral values of truth, justice and freedom are an inherent part of these rules [see Carr and Kemmis (1983, 1987) and Foster (*op. cit.*) for a more detailed exposition of Habermas's *ideal speech situation*). In other words, the moral values are embodied in the structure of language itself; and, accordingly, critical theory can be grounded in the very structure of human interaction.

Thus, critical theory was chosen as the main theoretical base for the present study for three main reasons: First, it encourages consideration of not only those aspects of teaching and learning that are amenable to linguistic description, observation and measurement; but also aspects that are less tangible, more difficult to describe and that defy quantification and measurement. Secondly, through the *critique* of current practices and assumptions, it promises to reveal how ideological influences encourage some important educational considerations to be taken for granted and accepted without discussion. Included in these assumptions is the question of what counts as knowledge, or how knowledge is constructed. Thirdly it offers the potential for participants in the research process to gain new insights and, in accordance with their new understandings, to take action towards change for the better, based upon the moral values of truth, justice and freedom which are implicit in democratic communication.

While critical theory provides the main philosophical basis to the study, concepts from poststructuralism are included as well. Poststructuralism assists with the analysis, discussion and understanding of discourses, particularly the analysis of discourses in the case studies and the official documents.

Poststructuralism

As Court (1994) points out, poststructuralism encompasses a comparatively recent body of ideas that are still being developed and one cannot therefore be definitive about it. Court also points out some developments are taking place under the name *postmodern theory* and, while some writers may distinguish between poststructural and postmodern theory, others do not. No distinction is attempted in the following brief description. Here the description is of poststructuralism as developed by Weedon (1987) in her *feminist theory of poststructuralism*.

Within the various interpretations and developments of poststructural theory, Weedon (*ibid.* : 20) discerns shared fundamental assumptions about language,

meaning and subjectivity. She develops her feminist poststructuralism encompassing these three assumptions.

Drawing upon de Saussure's (1974) pioneering work on language (see Chapter Six for further discussion relating to de Saussure), Weedon argues that language does not describe the world as it actually exists and thereby communicate the already fixed meaning to people, but is the medium in which meanings and understanding are created. It is a view which is consistent with the Marxist view of human consciousness being produced by social relations, rather than the opposite, of human consciousness producing social relations.

But Weedon rejects the Marxist view that access to true consciousness can be gained through historical materialistic science. Like other poststructuralists, she rejects metanarratives such as the claim that scientific theories can give access to the truth - in the sense of universal truths (see Harker 1993). Weedon states that, "As most scientists themselves would acknowledge, it (science) can only ever produce specific knowledge, with particular implications" (Weedon *ibid.*: 28). She points out that "both the sciences and the social sciences often do make claims to objectivity, at the very least in their style of writing, which function as a way of masking assumptions and interests, and of discounting subjective investment" (*ibid.*). Despite her rejection of the Marxist metanarrative, Weedon adopts Marxist notions to explain how ideology and subjectivities are created in the context of specific social arrangements.

In particular, Weedon adopts Althusser's (1971) notion of "ideology in general" to explain how people are controlled by the prevailing ideologies of the ruling class. Ideology - the prevailing system of ideas, beliefs and so on - functions to interpellate the individual as a subject. In other words, it constitutes the individual's subjectivity in language, in a way that appears obvious to the individual, but a way that is actually an effect of the ideology. People believe that

they, as rational unified people, are the author of the ideology which constructs their subjectivity, rather than the agent of a specific ideology sustaining particular material relations. They believe they are the authors of their own thoughts and actions, or inaction. But poststructural theory, Weedon explains, positions them as subjects caught up in the intersection of ideologies (discourses), not of their own making.

Not just one, but many subject positions are seen by poststructuralists to co-exist at the same time through the medium of language and these are located in historically specific ideologies associated with particular social institutions and practices. Weedon introduces Foucault's (cited in Weedon, *ibid.*: 35) concept of *discursive field* to provide understanding of the relationship amongst language, social institutions, subjectivity and power (see Chapter Six for further discussion of Foucault's views on discourses and power). Discursive fields comprise "competing ways of giving meaning to the world and of organising social institutions and processes" (Weedon, *ibid:* 35). Competition amongst fields implies the involvement of power and its effect upon people, as they live their lives within overlapping discursive fields such as the school, the political system, the church, their family and the legal system - and struggle to establish their subjectivities.

Thus poststructuralism conceives that human subjectivity is formed at the intersection of competing discourses which represent political interests that are constantly vying for status and power. Individuals can exert some agency but are embedded in the discourses in which their subjectivities are formed. As Weedon puts it:

> The site of this battle for power is the subjectivity of the individual and it is a battle in which the individual is an active but not the sovereign protagonist.
>
> (Weedon, *ibid.*: 41)

In summary, the critical theory philosophical base to the study encourages the critique of policies and practices in an effort to ensure that those affected

understand the "true" effect of such policies and practices upon their lives. It further encourages the emancipation of people through democratic action in accordance with the moral principles of truth and justice, in order to improve their lives. Poststructural theory encourages the notion that human subjectivity is formed to some extent at least, perhaps mainly, by ideologies embedded in the multiple discourses in which people participate as they live their daily lives. While individuals may exert some agency over their own subjectivity, much or most of the influence of the ideologies is likely to be unnoticed and thus unquestioned.

PREVIEW

From the above philosophical base the next chapter, Chapter Two, describes the methods adopted and the procedures followed in the research. It concludes with a discussion of the questions of validity and reliability.

Chapters three, four, five and six review literature related to the study. The review aims to provide a theoretical background to facilitate an interpretation and understanding of the conceptualisations of teaching and learning "revealed" by the present study (question 4 above). Many of the writers also, often indirectly through their criticisms, provide insights into how the government and the NZQA conceptualise teaching and learning. More specifically: Chapter Three reviews some of the developments associated with the objectives model. This review leads to the introduction of the NZQA's objectives/outcomes model. Criticisms of the NZQA's model are discussed and this discussion, in turn, leads to discussion concerning possibility of a process model as an alternative to the objectives/outcomes model. Overall, the chapter contrasts the notion of teaching and learning in which the means are separated from the ends with the notion in which the means and the ends are integrated. Chapter Four considers further criticisms of the NZQA's objective/outcomes model and its characteristics. Chapter Five provides an understanding of how knowledge is influenced by its

social context. It also considers the effect of the social context on the construction of curricula. Chapter Six discusses writing which elaborates an economics paradigm which is argued to be pervading society and, in doing so, adversely affecting education.

Chapter Seven presents and discusses the findings from four analyses of official policy documents. The first analysis suggests that, at the time of the interviews in the study (late 1995 and early 1996), the "official" policies reflected the influence of an economics paradigm. The second analysis leads to inferences about how the NZQA conceptualised teaching and learning at that time. The third analysis, which examines more recent documents (i.e., 1996 to 1999), suggests that there has been no change regarding the economics influence upon government policies. The fourth analysis, which also examines more recent documents (i.e., 1996 to 1999), suggests the NZQA's conceptualisation of teaching and learning has been modified.

Chapter Eight analyses case studies of three automotive engineering lecturers and three nursing lecturers. Conceptualisations of teaching and learning are inferred from the case studies. Five of the conceptualisations are very similar. The sixth is similar in some respects.

Chapter Nine reviews and discusses the findings from chapters seven and eight, making use of diagrammatic representations. It also relates the findings to the research questions. Then the findings are interpreted in terms of the literature reviewed. Implications for teaching and learning in polytechnics are suggested, including the warning that important forms of knowledge may "disappear" in the future. The chapter concludes with a discussion of the present study's strengths and weaknesses, suggestions for further research and a concluding statement.

CHAPTER TWO

METHODS AND PROCEDURES

INTRODUCTION

A major part of the study involved exploratory research of six lecturers' conceptions of teaching and learning. This was accomplished by means of case studies. Within the case studies, interviews were the main method of data collection. In addition, a form of discourse analysis was used both in collecting data while the interviews were in progress and to analyse and infer the lecturers' conceptualisations of teaching and learning following the interviews. Discourse analysis was also used to collect, analyse and interpret data in order to infer the NZQA's conceptualisation of teaching and learning from documents pertaining to official policies and from the implementation and criticism of such policies. These methods, then - case study, interviews (as a method) and discourse analysis are discussed in Section One of this chapter.

Section Two describes the procedures followed and techniques used in the study, including particular techniques relating to the interviews. It also describes the ethical considerations that were taken into account. Section Three discusses developments that evolved during the study: firstly, concerning amendments to the research questions; secondly, concerning the elaboration of the notion of an "official" conceptualisation of teaching and learning; thirdly, concerning a frame for the analysis and interpretation of data. Section Four discusses the concepts of validity and reliability and their relevance to the study.

SECTION ONE: METHODS

This section discusses case study, interviewing and critical discourse analysis.

Case study

Adelman, Jenkins and Kemmis (1976) describe case study as an umbrella term for a family of research methods used in research where the enquiry is focused around "the study of an instance in action" (p. 140). Stake (1978, cited in Burns, 1994: 4) refers to the instance as a "bounded system". Anderson (1990) very logically stresses the importance of defining the case that is to be studied. He points out that "the researcher should have a clear vision of what the case is and what unit of analysis the case examines" (p. 159).

In the present study "the case" or the focus of the case studies is defined by the first three research questions as they are set out in Chapter One. Initially, this meant exploring how each of the lecturers conceptualised teaching and learning.

Conceptualisation of teaching and learning is a notion which is coined for the purposes of the present study. It is defined as the more or less consistent themes underlying people's thinking and actions relating to teaching and learning. In other words, people's theories, both explicit and implicit, which influence the way they conceive teaching and learning and their actions in relation to teaching and learning.

Anderson (1990) refers to the case study researcher's questions occurring at two levels: those which are asked of specific individuals in the case and those which are asked of the case itself. [*cf.* Minichiello et al.'s (1995) "critical inner dialogue", in section headed *Listening and rapport* below.] In the present study, on one level, the lecturers were asked questions about their teaching, their understanding of learning, what they wanted their students to learn, and how they knew that their students were

achieving what was required. On another level the interviewer was working "in detective like fashion" (Anderson, *ibid.*: 159) to elicit data that would help to reveal how the lecturers actually conceived teaching and learning. At this level the researcher's questions aimed to explore whether lecturers' conceptualisations included the sorts of less tangible, more difficult to define and intuitive aspects of teaching and learning that he believed, as described in Chapter One, were being excluded by the "official conceptualisation" of teaching and learning.

A case study based upon the positivist paradigm might simply have relied upon factual data collected by questionnaires; perhaps supplemented by "discussions" with the lecturers, from which responses could be allocated to precoded categories - all designed to allow some sort of statistical comparison to be made. It would not have included the less tangible, more difficult to define and intuitive aspects of teaching and learning, because, as explained in Chapter One, these aspects are excluded by the positivist paradigm.

Alternatively, a case study based upon the interpretivist paradigm might have focused upon clarifying and understanding the explicit views of the lecturers themselves. This approach might seem to make good sense, because, after all, it is the lecturers' conceptualisations that are being studied.

However, the present study was based upon the critical paradigm, which focused attention upon the possibility that the lecturers may have come to accept, without their conscious awareness, the official conceptualisation of teaching and learning. Critical theory suggests this may occur in the same way that ideology hegemonically (Boggs, 1976; Codd, 1990; Fay, *op. cit.*) comes to be accepted as common sense, or, at least, to remain unquestioned (see discussion in Chapter Six). Thus, the study attempted to analyse the lecturers' responses at a deeper than surface or explicit level. This deeper analysis applied to both the preliminary interpretation of data as they were

collected by the researcher, particularly in order to "steer" the discussion in particular directions; and to the later analysis of data.

Three points which Yin (1984: 23) makes in defining case study assist in an explanation of how case study was used in the present study. They are that case study is an empirical enquiry that:

(1) investigates a contemporary phenomenon within its real life context; when

(2) the boundaries between phenomenon and context are not clearly evident; and in which,

(3) multiple sources of evidence are used.

The phenomena under investigation in the present study, conceptualisations of teaching and learning, are argued to exist in the minds of the lecturers in the form of abstract concepts, which have material effects upon their teaching practice. For this situation, case study provides a way of collecting data from, or close to, its "real life context" - Yin's first point. However, the boundaries between the phenomena (the conceptualisations) and the context (the lecturers' descriptions of their teaching practice) are not clearly evident -Yin's second point - and require teasing out by the researcher. Thus it is useful, and indeed necessary, to include information from the contexts in which the instances are embedded.

In relation to Yin's third point, in one sense multiple sources of evidence were not used in the study. The interviews were the main source of data about the six lecturers. While it may be preferable to include more sources of data, such as observation of teaching and/or discussion with students, this was not done, as to do so would have increased the size of the study to an extent that it would have been unmanageable for the researcher. However, the six case studies, themselves,

comprised multiple evidence for drawing conclusions concerning the way the group of six lecturers conceptualised teaching and learning. And, the conceptualisations derived from the case studies were compared with the views implied by educationists, whose criticisms of the NZQA's "developments" were discussed in the literature review. Thus, in another sense, multiple sources of evidence were used.

The case studies in the present research serve an exploratory purpose. The findings are not claimed to be generalisable. Rather, as Codd (1994) points out in relation to case study in general, the concern is with interpretation and understanding. The thrust is towards building-up theory grounded in the case, rather than establishing predictive or law-like generalisations. Thus the findings from the case studies combined with the other findings from the study offer the possibility of contributing to further research and theory building.

The case study methodology used was integrated with the methodology of in-depth interviewing, particularly as it is described by Minichiello et al. (*op. cit.*), and critical discourse analysis.

In-depth interviewing

Rather than using a schedule of standardised questions in the manner favoured by the positivist paradigm, the present study adopted the more flexible strategy of semi-structured, in-depth interviews. Minichiello et al. (*op. cit.*) describe this form of interview as a "conversation with a specific purpose" (p.61) between the researcher and each participant, through which the researcher aims to "gain access to, and subsequently understand the private interpretations of social reality that individuals hold" (p.61). One of the aims in the present study was to gain an understanding of the lecturers' "realities" in relation to their conceptualisations of teaching and learning, even if aspects of their conceptualisations revealed by their responses were not actually evident to the lecturers themselves.

Critical discourse analysis

The process of inferring the lecturers' conceptualisations of teaching and learning from the data provided by the case studies and the interviews involved elements of critical discourse analysis.

Critical discourse analysis is also involved in the process of inferring the governments and the NZQA's conceptualisation of teaching and learning, most obviously in Chapter Seven where "official" documents relating to policy and/or its implementation are analysed. Also, a form of discourse analysis is used to analyse or tease out the NZQA's conceptualisation from criticisms of the educational reforms discussed in the literature review, in Chapters Three, Four, Five and Six.

In 1987, Potter and Wetherell (1987), referring to discourse analysis in general, wrote that "discourse analysis is just emerging, developing and changing" (p. 158). Luke (1995) writes that the most recent turn toward discourse studies is based upon Foucault's (1972, 1977, 1979a, 1980) poststructural analysis of social history and contemporary culture.

Foucault, as explained by Luke, describes "how in broader social formations (i.e., *epistemes*) and in local sites and uses discourse actually defines, constructs and positions human subjects" (Luke, *ibid.*: 8). This is the *constructing* character of discourse through which discourses "systematically form the objects about which they speak" (Foucault, 1972: 49, cited in Luke, *ibid.*:8) by shaping grids and hierarchies for the institutional categorisation and treatment of people. Foucault conceives these categories as knowledge-power relations and theorises that they are achieved by the construction of *truths* about the social and natural worlds.

It is through these truths becoming taken-for-granted definitions and categories that governments are able to rule and monitor their populations. Also, at the same time,

the truths become the categories and classifications by which people define themselves. By means of an historical analysis of pivotal, social institutions, Foucault identifies the examination, military training, incarceration, and the official regulation of human sexuality as *moments* at which such *discipline* takes place. What occurs is not straightforward top-down ideological manipulation by the power-holders. Rather, communities participate in discourses in their own, often idiosyncratic, ways; and in doing so both resist and become complicit with their own moral regulation. As Peters and Marshall (1996: 30) put it:

> In other words, 'subject' carries twin meanings of an active knowing subject and of an object being acted upon - a *product* of discourses.

(See Chapter Six for further discussion of the notion of discourse, more detailed discussion on the exercise of power and of the relationship between knowledge and power.)

Luke (*op. cit.*), referring still to Foucault, describes the internalisation and acceptance by a subject of a discourse as their own to "constitute the moment of noncoercive discipline par excellence" (Luke, 1995: 9). That is, discourses about the self become "technologies of the self" (Foucault, cited in Luke, *ibid.*:9).

Parker (1992) argues that the main methodological contribution of Foucault's poststructuralism has been to support scepticism toward speech, interview data and the acceptance as unproblematic sources of information about "reality" and "truth", "intent" and "motivation".

Critical discourse analysis, according to Luke, shares with sociolinguistics and ethnomethodology the assumption that language use should be studied in a social context. And it shares the view of ethnographers that people engage in the negotiation of knowledge, identity, and social relations in the everyday patterns of institutional life. However, it differs from mainstream research in its focus upon how

power and identity are legitimated, negotiated and contested towards political ends. Its concern is to analyse "how textural constructions of knowledge have varying and unequal material effects and how whose constructions come to 'count' in institutional contexts is a manifestation of larger investments and interests" (Luke, *ibid.*: 12).

Luke describes two ways in which critical discourse analysis of written and spoken text operates. The first relates to its critical function through which it seeks to intervene in what may appear to be the natural flow of talk and text in institutional life. Institutional discourses, Luke elaborates, serve to "naturalise and disguise" power relations which, in turn, are tied to inequalities in the social production of symbolic and material resources. He believes that critical discourse has the potential to destabilise *authoritative discourses* and bring to attention relations of inequality, domination and subordination.

Luke describes the second way in which critical discourse analysis operates as its *constructive moment.* In this respect, he explains how it aims to generate agency among teachers, students, and others involved. It provides them with the tools required to understand how texts represent the social and natural world in particular interests, and how they - the teachers, students, and others - themselves come to generate the very relations of institutional power which, for teachers for example, are embedded in sites such as their teaching practice, their staffrooms and educational policies.

Critical discourse analysis embraces elements of both critical theory and poststructuralism, the philosophical approaches underlying the present study. It aims, as critical theory does, to provide people with a "true" understanding of their situation and to encourage them to take the social action required to improve their situation. And its concerns with *moments of intersubjectivity* and with *intertextuality,* as described by Luke, have similarities with poststructuralism's intersecting discourses.

Luke follows Foucault in describing *intersubjectivity* to involve the social and discursive relations between people - writers and readers, speakers and listeners - people whose intentions are neither self-evident nor recoverable without recourse to another text. Thus reading and writing and listening and speaking are conceived to depend upon *intertextuality*; that is, the repeated and reiterated wordings, statements and themes that appear in different texts.

SECTION TWO: PROCEDURES AND TECHNIQUES

This section describes the steps and procedures followed in the study and the techniques used in the interviews.

Pilot interviews

The procedures followed when inviting lecturers to participate in the interviews and the interview strategies and the techniques used in the study were trialed in two pilot interviews, which were arranged with a lecturer of nursing. These interviews were audiotaped and later analysed. One was transcribed in full.

Selection of participants (Lecturers)

No attempt was made to follow a random selection procedure as it was considered that such a procedure would be of spurious value in this study, particularly as there is no claim that the immediate findings are able to be generalised. Instead sampling was *purposive* (Bogdan and Biklen 1992; Creswell, *op. cit.*; Glaser and Strauss, 1967; Morse, 1989). Accordingly, participants were purposefully selected on the basis that they would "best answer the research question(s)" (Creswell, 1994: 148).

Lecturers from the two contrasting teaching areas - nursing and automotive engineering - were selected. It was believed that this selection provided a contrast between, on one hand, a course which included a concern with conceptual human

qualities, such as caring, that are not directly observable and, on the other hand, a trade course which appeared to be concerned with observable behavioural skills. Another, perhaps obvious but nonetheless important, criterion for the choice of lecturers was that, despite their already heavy workload they were willing, or even enthusiastic, about the prospect of being included in the research. A positive orientation towards the research was considered to be desirable in order to develop a productive rapport between the researcher and each lecturer.

The researcher approached three lecturers who were already known to him in a professional capacity and sought their assistance in identifying lecturers who possibly might be interested in participating in the research. Two of these "contacts" were teaching the nursing degree course and the other lecturer was teaching the automotive engineering course. Subsequently the researcher drew up a "possibilities" list of eight lecturers of nursing and five lecturers of automotive engineering. (The lesser number in automotive engineering was in keeping with there being comparatively fewer lecturer positions in that area.) The researcher then ranked the two lists hierarchically based upon the comments received and his own intuitive knowledge of the people concerned. Next he approached those occupying the first three places in each list. Two of the lecturers of nursing approached declined to be involved, so the researcher approached the next two on his list, both of whom accepted. All three of the lecturers of automotive engineering approached accepted the invitation.

For five of the lecturers, the initial contact was made by telephone. Through circumstances rather than for any other reason, the initial contact with the other lecturer was made in person. Following an indication of possible interest by the lecturers, the researcher made an appointment to meet with them. Discussion centred on the matters outlined in Point 2, of Appendix One: *Ethical Protocols for the Study*. During the meeting each participant was given a letter summarising the points discussed (Appendix Two). A follow-up meeting was then arranged and discussion of

the ethical considerations under Points 2 and 3 of *Ethical Protocols for the Study* completed. The ethical considerations detailed in the letter were also discussed. All six lecturers indicated that they wished to proceed as participants in the study. A time was arranged for the first interview.

Arrangements for Interviews

Times for interviews were arranged, as far as possible within the requirements of the study, to suit the lecturers. However, one preference related to the research design was for the second and third interviews to be as close as possible to the teaching session on which much of the discussion at those interviews was to be focused. The location of the interviews was arranged to suit the participants. Four of the lecturers were interviewed in their offices at the polytechnic. They considered that this arrangement offered the least interruption to their normal schedules. The other two lecturers opted for different arrangements. Three of the interviews of one of the nursing lecturers were held in an interview room reasonably close to her office at the polytechnic and, as a result of a change to her employment contract, the fourth was arranged at her home. The first interview of one of the engineering lecturers took place in his office at the polytechnic, but he chose for the next three interviews to take place at his home, where he felt he would be more relaxed away from the day-to-day pressures of his work.

Interviews: procedure, processes and techniques.

Many of the processes and techniques used in the interviews were developed from Minichiello et al's. (*op. cit.*) writing on in-depth interviewing.

Four interviews were arranged with each of the six lecturers who participated in the study. The interviews were semi-structured in the sense that before each interview a list of about eight questions or themes was planned to serve as a guide, rather like Minichiello et al's. (*ibid.*) *topic list*. The intention was to try to obtain information on

the matters covered by each theme, but to follow the "flow" of the conversation rather than sticking rigidly to the prepared questions or themes. Each interview was planned to last for approximately forty to forty-five minutes. However some took well over an hour.

The sequence and guiding focus of each interview was as follows:

- *Interview One*

  A forthcoming "teaching session" (either a single lesson or a series of lessons) was chosen as a focus for discussion in the next two interviews. Discussion then centred upon such aspects as where the session fitted into the overall programme and its significance in relation to the purpose of the training.

- *Interviews Two and Three*

  Discussion focused upon the nominated teaching session, including what was planned and then what actually happened. These two interviews were arranged as close as possible to the nominated lesson (or series of lessons).

- Interview Four

  This was essentially a follow-up interview to provide an opportunity for further discussion of any points which arose either during previous discussions or when the researcher listened to the audiotapes. It was also an opportunity to return to any of the planned questions or themes that had been missed as a consequence of the researcher "following the flow", rather than his original plan.

In the first interview with each lecturer, the conversation was begun with a question or questions relating to a particular theme or themes. From that point the conversations generally followed the flow, as described above. However, whenever the opportunity occurred, discussion was unobtrusively led back to the planned

themes. Minichiello et al. (*ibid.*) describe this interview model as *recursive*, as "reflexively defined structuring of the interview process" (p.83). Recursive questioning enables the interviewer to "treat people and situations as unique and to refocus the research in the light of information fed back during the interview process itself (Schwartz and Jacobs 1979).

In the second, third and fourth interviews the conversation was usually recommenced with several questions based upon the participant's responses during the previous interview. These were followed by recursive questions which were again unobtrusively related back to themes planned for the particular interview.
Not surprisingly, there were occasions when the conversation began to head off on a tangent and needed to be brought back on course. On such occasions an attempt was made to relate something that the interviewee said with a planned theme This tactical device is called a *transition* (Minichiello et al., *ibid.*; Abrahamson 1983).

When, during the interviews there was uncertainty about a participant's meaning, follow-up questions were asked to elicit further information. Minichiello, et al. (*ibid.*) call this sort of question, used within the recursive model, a *probing question*. They point out that "the interviewer cannot take for granted the common sense understanding that people share because these may be differently interpreted by informer and interviewer" (p. 89).

Minichiello et al. identify several different sorts of probes. One which was used in the present study is a *reflective probe*. It is used to clarify uncertainty about what the interviewee has said or implied. It involves reflecting the answer back to the interviewee for confirmation. Similarly, a *mirror* or *summary question* involves reflecting back a summary of the interviewee's answer. In the present study, the summary sometimes also included elements of interpretation for the interviewee to confirm.

The *devil's advocate question,* according to Minichiello et al., (*ibid.*) and Schatzman and Strauss (1973), involves deliberately confronting the interviewee in order to check the consistency of a response or test an interpretation of a response. A form of devil's advocate questions was used in the present study, but not for the purpose that Minichiello et al. and Strauss describe. It was used, in keeping with the tenets of critical theory, to assist in unmasking misunderstandings, particularly misunderstandings that appeared to be related to the uncritical acceptance of the NZQA's and the government's ideologies.

Asking questions also implies listening.

Listening and rapport

Listening was a fundamental aspect of the researcher's work in the data collection process and, in effect, an early step in the analysis of data, insofar as he made decisions to steer the conversation in certain directions based upon his on-the-spot analysis [*cf.* Schon's (1983, 1987) *knowing-in-action* in Chapter Four] of what he had heard and how he believed the conversation related to the research questions.

Minichiello et al (*op. cit.*) introduce the term *critical inner dialogue* (p.101) to describe the way in which qualitative researchers listen at two levels when conducting an interview (*cf.* Anderson's two levels of questioning, in the above section headed *Case study*). At one level they listen and engage in the actual explicit meanings of the conversation At another level they listen and examine the implicit and theoretical meanings of what is said. In the present study the notion of critical inner dialogue also applied to the critical process of listening for contradictions and anomalies that could be related to the uncritical acceptance of the power-holders' ideologies.

Listening was also fundamental in the present study to the establishment of rapport between the interviewees and the researcher. The researcher aimed through the

manner in which he listened, as well as the way in which he spoke and communicated meanings through body language, to establish and maintain a non-judgemental, non-threatening, empathetic relationship in which the interviewees felt comfortable participating in a two-way conversation.

Such aspects of an interview as the control the interviewer has over the interviewing process and perception that the researcher has "special" knowledge not known to the interviewee may lead to a perceived power difference between the interviewer and the interviewee. The consequence may be less effective rapport between the interviewer and the interviewee.

An attempt was made in the present study to establish and maintain appropriate rapport through practices such as giving the participant the opportunity to switch off the tape recorder at any point, making a conscious effort to be non-judgemental, using as many open-ended questions as possible - thus giving the participant as much control as possible over the interview, and through encouraging the participant to talk.

Minichiello et al. (*op. cit.*) advocate the *nudging probe* to encourage an interviewee to talk freely and for maintaining rapport. It is communicated through body language, a quizzical facial expression, nodding the head, silence, or use of an expression. In the present study, the use of the word "right" combined with a facial expression and body language frequently served this purpose. On some occasions, particularly if the first nudging strategy was not successful, more explicit verbal nudging such as "tell me more?", or "and ...?" was used.

Audiotaping

Three major advantages that audiotaping offers are: First, it provides a record in full verbal details of the participants' beliefs couched in the vividness of their speech

(Perry, 1985), including any ambiguities, and this record is available for later analysis (Minichiello et al, *op. cit.*). Second, the verbatim record provides protection for the participants against misrepresentation (Perry, *ibid.*). Third, the procedure can serve to enhance rapport by permitting a more natural conversational style, with the interviewer "free to be an attentive and thoughtful listener" (Minichiello, *ibid.*: 98).

On the other hand, three disadvantages of audiotaping are: First, it does not record non-verbal responses, such as body language, and the significance of the interviewee's original phrasing and pauses is apt to be lost in the transcription process. Second, some interviewees may be inhibited by the knowledge that an audiotape is recording their comments. (Minichiello, *ibid.*) Third, audiotaped interviews produce a large volume of material for analysis.

Thus there are both advantages and disadvantages in audiotaping in-depth interviews to provide data for qualitative research. But it is believed that the advantages outweigh the disadvantages. Therefore the interviews in the present study were audiotaped.

Another possibility would have been to videotape the interviews. This process has the potential to capture non-verbal language as well as verbal language. However it was considered that videotaping would be more likely than audiotaping to inhibit the interviewees' responses. It was also considered that in the present study audiotaping would meet the requirements of the research well insofar as lecturers' thinking about their teaching is embedded in language and audiotaping catches spoken language.

Field Notes

Following interviews, and at other times when it was relevant to do so, the researcher made notes on procedural aspects of the research, theoretical aspects and other

aspects. The reflective process involved in writing these notes helped to focus the researcher's attention on emergent considerations.

Ethical considerations

The study was designed to meet Massey University's requirements, detailed in *Code of Ethical Conduct for Research and Teaching Involving Human Subjects* (1990), and code of ethics of the polytechnic concerned. Approval was obtained from the polytechnic's Ethics Committee. Therefore it was not considered necessary to obtain a separate approval from the University's Human Ethics Committee.

At the outset of the study the researcher held a senior management position in the polytechnic, (but left the employment of the polytechnic at the point when 18 of the 24 interviews had been completed). He did not have any link with staffing matters relating to the two faculties involved and was able to make the commitment that information about the individual lecturers obtained through their involvement in the research would remain confidential to the researcher and individual lecturers concerned.

The further commitment was made that every care would be taken to provide the participants with as much anonymity as possible. It is for this reason that the lecturers are identified in the study by pseudonyms and, as an added safeguard to their identity, the polytechnic involved in the study is not named. Nevertheless, the lecturers were warned of the possibility that at least some of their colleagues and some of the "hierarchy" would know that they had been involved in the study and may be able to recognise at least some of the comments in the thesis and related reports.

The researcher was conscious of the time and effort asked of the participants and that the only rewards for this would be his gratitude, the opportunity to contribute to the

development of knowledge and the possibility of lecturers improving their understanding and consequently their teaching practice.

Because critical theory sets out to critique taken-for-granted structures as part of the critique-reflection-practice-transformation cycle it is inherently interventionist. Consequently, there was a danger that participants might become involved in questioning power structures and through that come into conflict with those holding power. However, questioning present assumptions could also be seen as necessary in the process of constructively improving their teaching and the work of the polytechnic.

Ethical Protocols

A detailed list of ethical protocols was prepared and is included in Appendix One: Ethical Protocols for the Study,

SECTION THREE: DEVELOPMENTS DURING THE STUDY

Owing to the qualitative and exploratory nature of the research, some aspects evolved, rather than being rigidly pre-planned. This section describes: firstly, changes to the original research questions; secondly, the question of ownership of the official conceptualisation, and, thirdly, the development of a frame through which to analyse the data from the document analysis and the case studies.

Changes to research questions

One change is the deletion of a question. The other involves an amendment, partly as a consequence of the deletion and partly to improve the focus of the question.

Research question (2.4) implies that an attempt will be made to construct a combined conceptualisation for all six lecturers. The purpose behind the question was to enable a comparison to be made between the lecturers' inferred conceptualisations and the conceptualisation inferred to underlie the legislation and policy.

In the course of the analysis, however, the realisation occurred that the construction of a combined conceptualisation for the six lecturers was unnecessary. Thus question (2.4) became superfluous. Instead all six conceptualisations were located on the same diagram, a procedure which allows them to retain more of their individual integrity, rather than reducing them to one representative conceptualisation.

As a consequence of the deletion of question (2.4.), the reference in question (3) to a "combined conceptualisation of teaching and learning" was deleted. Also in question (3) the wording "conceptualisation of teaching and learning implicit in recent legislation and policy", was, in effect, read as the "NZQA's conceptualisation". This change is argued, below, to improve the focus of the question by attributing "ownership" of the conceptualisation implicit in the legislation and policies to the NZQA.

Thus research question three, in effect, was amended to read:

3. *What, if any, are the main differences between the six lecturers' and the NZQA's conceptualisation of teaching and learning?*

The question of "ownership" of the "official" conceptualisation of teaching and learning

Question (1), which introduces the notion of conceptualisations of teaching and learning implicit in legislation and policies, leaves the question of "ownership" open. Initially it was assumed to be the government's conceptualisation, because governments are responsible for the legislation and policy. However governments respond to political pressures. Snook (1996), for example, describes how, in New Zealand, the Roundtable is a powerful political pressure group, which has had the ear of successive governments. Its membership, Snook points out, includes the chief executives of the wealthiest corporates in the country. This belief that society's economic power-holders influence the governments' views is also supported strongly by the literature discussed in Chapter Seven, of the present study. Thus "ownership" of the conceptualisation is attributed to the society's economic power-holders as well as the government of the day and/or recent governments.

As the present study progressed, the role played by the NZQA at the interface of the changes which were impacting upon teaching and learning in polytechnics became clearer. The NZQA is, in effect, the government's "official arm", developing, implementing, and monitoring the changes and policies in the polytechnics. It has a mediating role. This implies that it also mediates the government's conceptualisation of teaching and learning. One might expect the NZQA's conceptualisation to be embedded in and to reflect the governments' and the economic power-holders' conceptualisations.

Thus in the present study ownership of the conceptualisation underlying the legislation and policies is attributed to the government and/or the economic power-holders

and/or the NZQA. Reference is made to all three at different points, or, on occasions, to the "official" conceptualisation. However, it is the conceptualisation mediated by the NZQA that is closest to the "chalkface" in the polytechnics. Consequently, a focus that tends to capture the NZQA's conceptualisation of teaching and learning is appropriate in this study and, on most occasions, is the focus taken. In effect, the references in the original research questions to the conceptualisation of teaching and learning underlying legislation and policy [in question (1), (3) and (5)] and the reference to the government's conceptualisation [in question (4)] were interpreted to mean the NZQA's conceptualisation of teaching and learning.

Frame for analysing responses

Because this was an exploratory study, care was taken to impose as few as possible predetermined categories upon the data collection or its interpretation. It was believed that to do so would unduly predetermine what data were collected, how they were interpreted and what data were excluded. Nevertheless, the influence of the researcher's original concerns is acknowledged to have influenced data collection, analysis and interpretation.

As the study progressed, considerable difficulties were experienced in collating, comparing, analysing and interpreting data from the three main sources; namely: six individual lecturers, official documents and criticisms of policies. It thus became necessary to develop some categories or a frame to guide and focus the comparison, analysis and interpretation.

In his discussion of qualitative research, Creswell (*op. cit.*) refers to the process of data *reduction* and *interpretation*. He explains that "the researcher takes a voluminous amount of information and reduces it to certain patterns, categories, or schemes and then interprets it using some schema" (p. 154). Tesch (1990) names this process *de-contextualisation* and *re-contextualisation*. He explains that the aim is to

achieve a "higher level" of analysis and that much of the process "...consists of 'taking apart', (but) the final goal is the emergence of a larger consolidated picture" (p. 97). Tesch proposes eight steps to follow in developing categories and codes to structure or give shape to data. In summary, these steps involve reading all of the transcripts to obtain an overall picture; picking out one short but "interesting" transcript and trying out categories; trying out the categories on several transcripts and grouping similar topics under major topics or categories; developing codes; trying out the codes on the data and revising the codes. Both Creswell and Tesch describe the process of developing categories and codes as an evolving, flexible process.

The process used to develop a frame or categories for analysing the data in the present study was similar to, but not the same as, Tesch's steps. Categories rather than codes were developed. Particular attention was given to devising categories that systematically related the data in a meaningful manner to the researcher's intuitive concerns which gave rise to the study and to the research questions developed from them. The categories so devised are set out below. They comprise four continuums giving a total of eight categories on the basis of which conceptualisations of teaching and learning can be described. For each of the eight categories one or more *related characteristics* are also listed. Depending upon the context in which they occur, these are taken to be indicators of a major category; that is, they will usually indicate the major category concerned, but on some occasions may be "read" in another way.

Categories (continuums) for analysis of conceptualisation of teaching and learning

1. Conceived that the means are separated from the ends of teaching/learning : conceived that the means are integrated with the ends of teaching/learning.

   means are separated from the ends

   <----------->

   means are integrated with the ends

Related characteristics:

Separated	*Integrated*
• Emphasis is upon the product of learning. • Learning is conceived to be instrumental. • Learning is conceived as a linear, progression towards pre-specified ends. • Learning is conceived to occur in predictable ways. • Teaching/learning is conceived to proceed by pre-specifying the desired ends and implementing the most effective means to attain the ends. • Teaching/learning is conceived as a closed system. • The evaluation of teaching/learning is conceived to be accomplished through measuring the actual outcomes against the pre-specified ends.	• Emphasis is upon the process of learning. • Learning is conceived to be an end in itself. • Learning is conceived to lead to further learning. • Learning is conceived to occur in ways that may be unpredictable, idiosyncratic and non-linear. • Teaching/learning is conceived to proceed by a dialectic process involving continual integration of the ends and the means. • Teaching/learning is conceived as an open system. • Qualitative in addition to quantitative outcomes are conceived to be important in an evaluation of teaching/learning.

2. Conceived that learning, knowledge and skills are capable of precise linguistic description and measurement : conceived that learning, knowledge and skills include more than can be readily captured in linguistic description and measured quantitatively.

Learning/knowledge/skills capable of precise description, pre-specification and accurate measurement.

<----------->

Learning/knowledge/skills include more than can be described precisely, pre-specified and measured accurately.

Related characteristics:

Capable of precise linguistic description / measurement	*More than can be captured in linguistic description / measurement*
• Only observable, measurable outcomes are counted as knowledge. • Knowledge conceived as an external, objective product. • Knowledge required for the future is conceived to be predictable. • All knowledge is conceived to be structured in the same way.	• Intuitive and qualitative forms of knowledge are recognised to exist, to be important and to "count". • Knowledge conceived as a personal attribute • Knowledge required for the future is conceived to be difficult to predict. • Different forms of knowledge are conceived to be structured in different ways.

3. Conceived that knowledge comprises the sum of discrete components : conceived that knowledge has holistic characteristics over and above the sum of its separate components.

Knowledge comprises the sum of discrete components

<----------->

Knowledge has holistic characteristics over and above the sum of its separate components

Related characteristics:

Discrete components	*Holistic*
• Teaching/learning is conceived to involve the progressive, linear addition of discrete components. • Emphasis is upon "surface" knowledge. • Emphasis is upon knowing "what". • Emphasis is upon facts, information and skills. • Learning is conceived as the ability to reproduce facts, information and skills.	• Teaching/learning is conceived to involve a meaningful, integrated, holistic aspect. • Emphasis is upon "deep" knowledge. • Emphasis is upon knowing "how". • Emphasis is upon understanding. • Emphasis is upon processes. • Learning is conceived to involve an holistic understanding of a network of interrelated aspects.

4. Conceived that learning/knowledge has a universal application : conceived that learning/knowledge is related to its context (including its political context).

Learning/knowledge has a universal application.

<---------->

Learning/knowledge is related to its context (including its political context).

Related characteristics:

Universal application	*Related to context*
Knowledge is conceived to be value-free.	Knowledge is conceived to be influenced by and related to values.

It is pointed out, however, that while the above categories proved useful in the process of analysing and interpreting data, they were revised a number of times during that process and, therefore, are best considered as evolving categories. It is also pointed out that most of the data collected were related to the first three categories. The fourth category was one which emerged mainly from the literature review and later analysis of data following the interviews. It was not one of the themes that the researcher consciously pursued during the interviews. Thus, during the interviews, information was collected on this category more by chance than by design.

SECTION FOUR: VALIDITY AND RELIABILITY

In a general sense validity refers to research being fit for its intended purpose and reliability to the "stability" or the extent to which the research could be replicated with the same results. Traditionally positivistic research was concerned to provide quantitative measures of validity and reliability which were often reported in terms of *coefficients* (Creswell, *op. cit.*; Isaac and Michael, 1981).

If the present study were conducted in accordance with the positivist paradigm, attention would be given in the case studies to ensuring that systematic and precise methods and techniques were employed. A verifiable sampling technique would be required, observations would be coded in a manner suitable for statistical analysis and there would be a concern with the abstraction of findings from particular to general (see, for example, Good and Hatt, 1952).

As well, in a positivistic approach, interviews questions and procedures would be standardised to prevent any bias that might otherwise be introduced. As Minichiello et al. (op. cit.) explain, such standardisation is "to ensure comparability with other studies and to try to prevent bias between interviewers" (p. 63). And Babbie (1989) explains that the role of the interviewer (in positivist research) is to facilitate responses to the questions; that is, to be "a neutral medium through which questions and answers are transmitted" (p.245). In other words, the interviewer must maintain positivism's overall requirement for objectivity.

Interpretivists and critical theorists, on the other hand, argue that researchers studying human relationships cannot be neutral or completely objective themselves. For example, simply adopting the conventions of a paradigm is a form of bias or partiality (Fay, 1987; Carr and Kemmis, 1986; Kuhn, 1970; also see discussion under "Values" in Chapter Four). Thus in the present study the researcher did not attempt to be neutral, but instead was committed to assisting the participants to better understand their own conceptualisations of the students' learning requirements. This meant working towards the resolution of any misunderstandings that appeared to be impeding the lecturers' thinking. The researcher's bias was to help the lecturers improve their own teaching practice and thus their students' learning, and ultimately to improve teaching and learning in a more general sense.

This acknowledgment of bias by the researcher in the present study does not detract from the rigour of the research. To the contrary, for the researcher to state his position is a form of rigour. It provides readers with the opportunity to evaluate any undue bias for themselves. Further, having declared this bias and thereby made it available for others to inspect, the researcher was even more careful than he might otherwise have been not to let his biases influence his findings in an unacknowledged way.

Creswell (*op. cit.*) points out that qualitative writers have developed their own language and criteria for addressing "the concepts of *validity* and *reliability*" (p.158). The following forms advocated by such writers have been considered in carrying out the present study:

Construct validity (Lather, 1986) or *internal validity* (Anderson, 1990; Creswell, *op. cit.*). This is judged on the basis of the internal consistency and coherence of the research. In the present study, the researcher strove to meet this requirement while planning, carrying out and analysing the research. He also, as indicated in the above discussion of objectivity, described the methodology and procedures so that the readers are given the opportunity to understand and evaluate these for themselves. And he aimed to provide sufficient data from the interviews and official documents to allow the readers to follow the analysis and judge the conclusions for themselves.

Triangulation. (Anderson, 1990; Creswell, *op. cit.*; Lather, *op. cit.*) This form of validity involves the use of different sources of information, different investigators and/or different methods of data collection. The principle involved is that a convergence of data collected in these different ways is likely to lead to stronger conclusions than those obtained from data collected in one way (Anderson, *ibid.*).

Minichiello et al. (*op. cit.*) agree that triangulation is regarded as a means of enhancing validity and decreasing possible bias, but referring to Blaikie (1988) and Silverman (1985), they argue that the underlying assumption involved actually reflects elements of a positivist frame of reference. A single undefined reality is assumed to exist and the various accounts are treated as multiple mappings of this reality. They suggest that the researcher's role is not to adjudicate between competing versions of reality but to understand the situated nature of action and accounts.

The present study does not assume that there is one universal reality waiting to be discovered, but accepts that there are different, situated perspectives. Nevertheless, it takes the view that the separate, situated perspectives can be compared usefully, in order to reveal common patterns. Thus, in this sense, the principle of looking for converging evidence (triangulation) from different and/or multiple sources is adopted. For example, data used to infer the lecturers' conceptualisations of teaching and learning are drawn from four interviews with each of six lecturers, who work in the two quite different teaching areas of automotive engineering and nursing. Also the data used to infer the "official" conceptualisation of teaching and learning are drawn from two quite different sources: first, from literature criticising the reforms of education during the late 1980s and the early 1990s and, secondly, from official documents relating to government's and the NZQA's policies.

Thus the case studies collected information from different sources, but not from different methods or different interviewers. Rather interviews conducted by one interviewer were used to generate almost all of the case study data, apart from a small amount of information gleaned from related documents such as the written curricula. While it may have been advantageous to use more methods, it was also necessary to limit the study to a manageable piece of research. For example, it was

to ensure that the study remained within manageable proportions that observation of the lecturers' teaching practice was not integrated into the study. Similarly, the resources available did not allow for the use of more than one interviewer.

Catalytic validity is a form of validity described by Lather (*op. cit.*). It is the extent to which people are actually empowered through the research and transformation achieved.

While this form of validity is particularly relevant to the present study (or an extension of the present study) and was an ultimate goal, there was little to suggest that the process reached this stage. Evidence of this form of validity is not therefore provided. This does not mean, however, that there would not have been evidence had the study been continued beyond four interviews.

Face validity is another form of validity described by Lather (*ibid.*). It is also argued to be particularly relevant for the present study. It is the "click of recognition" when other lecturers in the same polytechnic or elsewhere recognise that the findings ring true for them.

In presenting the findings from this study no claim is made that they can immediately be generalised to other lecturers and other situations. However, it can be argued that to the extent the findings do ring true for other lecturers, they, in effect, are generalisable.

SUMMARY AND CONCLUSIONS

Case study, interviews and discourse analysis, the main methods used to collect data from which conceptualisations of teaching and learning could be inferred were discussed. It was explained how these methods and the associated techniques were used in accordance with a philosophical base of critical theory and poststructuralism, rather than a philosophy based in positivism.

The "case" at the centre of the case studies was defined as the lecturers' conceptualisations of teaching and learning, which, in turn were defined as the more or less consistent themes underlying people's thinking and actions relating to teaching and learning. The frame developed to assist with the analysis of data collected and with inferring the conceptualisations of teaching and learning was presented. It included four continuums related to the original intuitive concerns which gave rise to the study and to the research questions. The first continuum categorises data according to whether the ends and the means of teaching and learning are conceived to be separated or integrated. The second, according to whether learning, knowledge and skills are conceived to be capable of precise linguistic description and measurement or to include more than can be readily captured in linguistic description and measured quantitatively. The third, according to whether knowledge is conceived to comprise the sum of discrete components or to include holistic characteristics over and above the sum of its separate components. The fourth, according to whether learning and knowledge are conceived to have a universal existence or to be related to their context.

It was explained how the framework had evolved during the study, with the fourth category being developed after data had been collected. Consequently comparatively little data were collected in the fourth continuum.

Ethical considerations and protocols were discussed, including the use of pseudonyms rather than the lecturers' actual names and the decision not to name the polytechnic concerned.

In keeping with the practices of qualitative research, the researcher's biases were made clear. These were towards critical theory's goals of "true" understanding, empowerment and change for the better. And towards collecting, analysing and interpreting data in terms of the concerns that gave rise to the study.

It was acknowledged that the study had not succeeded in achieving its critical theory agenda. Therefore, at the present stage, the study could not claim what Lather terms catalytic validity. Other forms of validity described included construct validity and triangulation. The study was argued to have some claim to validity under these two categories. It was suggested that further claims to validity might lie in readers' responses; that is, in the "click of recognition" of readers who recognise that the findings ring true for them as polytechnic lecturers and administrators.

CHAPTER THREE

CURRICULUM MODELS: SEPARATION OF MEANS FROM ENDS OR INTEGRATION OF MEANS WITH ENDS?

INTRODUCTION

The chapter begins with the description of some of the more traditional curriculum models from which the NZQA's outcomes model appears to have emerged. Like the NZQA's model, they all separate the means from the ends of education.

The notion of standards, a central feature of the NZQA's model, is then described from both the NZQA's perspective and from the perspective of writers who are critical of it. The criticisms point to the difficulties of describing standards precisely, linguistically; and of measuring them accurately for the purpose of summative assessment. The discussion of standards leads onto the perspective of writers who, in contrast with the NZQA, conceive curriculum, teaching and learning as a process rather than as an outcome or product.

In the final part of the chapter, an argument for a broader form of "objectives" is reviewed. At first it may seem to counter some of the earlier arguments for rejecting the NZQA's objectives/outcomes model, but it is suggested that these broader objectives are incompatible with the model advocated by the NZQA.

The chapter concludes with a summary and conclusions which relate the discussion to the research questions posed at the outset of the study.

TRADITIONAL CONCEPTION OF CURRICULUM

The *Concise Oxford Dictionary* (Sykes, 1976) shows that the term curriculum is derived from the Latin word *curere*, meaning course, or course to be run. Traditionally, curricula have been conceived as courses of study with beginnings and ends, sets of obstacles to be overcome, and certificates or diplomas (trophies) which are presented upon successful completion (Eisner, 1979); or the content of an educational course or programme (Codd, 1993b); or as a document (Grundy, *op. cit.*). These traditional conceptions of curriculum are reflected in the following curriculum models upon which teaching and learning have been based throughout much of the twentieth century.

FACTORY MODEL OF CURRICULUM DEVELOPMENT

Eisner (*op. cit.*) describes how in the first quarter of the century school administrators responded to criticism that they were running "slack schools" by adopting the methods and ideas of Frederick Taylor (1911), an industrial management consultant, who pioneered a "scientific" approach to improving the efficiency of production workers in factories. In this view, schools were seen to be analogous to factories: "The society was viewed as the consumer of the school's products. The children were the raw material to be processed according to specifications laid down by the consumer. And the teachers were the workers who were overseen by the supervisors" (Eisner, *ibid.*:97).

Using the example of the production of a car, Eisner further elaborates the fundamental features of the production process that have been applied to curriculum development: The prototypical form (the pre-specified end) is created first. Then a component analysis is made, followed by a task analysis which provides the most efficient steps and sequence for the production process (the

means). The manager's task is to ensure that all operations (comprising the means) are performed as specified. The goal is achieved if there is a perfect match between the original prototype and the final product (the 'measured' end attained). Thus it is a model in which the ends and the means are separated, with the desired ends being determined first; then the best means that science can provide applied in order to attain the ends. Success is a matter of comparing the actual (measured) end or product with the pre-specified end.

OBJECTIVES MODEL OF CURRICULUM DEVELOPMENT

The objectives model of curriculum development has the same fundamental features as the factory model, including the separation of the ends from the means. It is the model which is advocated strongly in the writing of educators such as Bobbitt, 1918, 1924; Goodlad and Richter, 1977; Hammond, 1973; Johnson, 1967; Mager, 1962; Tyler, 1949; and Taba, 1962. Amongst these writers, Tyler (1949), through his book titled, *Basic Principles of Curriculum Construction and Instruction,* is held (Brady, 1992; Codd, 1993b; Cornbleth, 1990; Grundy, *op. cit.*; Posner, 1988) to have had considerable influence upon the design of curriculum development and adoption of an objectives model.

Tyler's rationale centres upon discussion of the following four fundamental questions:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are most likely to lead to the attainment of the school's purposes?
3. How can these educational experiences be organised effectively?
4. How can we determine whether the educational purposes are being achieved?

The four questions appear to be four sequential steps. However, as Posner (*op. cit.*) points out, Tyler actually intended his text to be a rationale for curriculum development, not a manual setting out linear steps for curriculum construction. Nevertheless, despite what he may have intended, Tyler's rationale has been interpreted and applied as a sequential, linear approach to curriculum development. It has led to an objectives model which Codd (1993b) describes in the following quotation:

> (The) emphasis upon the definition and measurement of objectives has become the hallmark of what is now referred to as the "objectives model" of curriculum design and evaluation. The model has been adapted and modified in various ways but it retains the essential features of reducing design to (a) a linear sequence of steps, and (b) a set of specific techniques.
>
> (Codd, 1993b: 8)

Brady (*op. cit.*) and Codd (*ibid.*) use slightly different terms to describe the linear stages of the objectives model, but the meanings are the same. Essentially they are as shown in figure 1:

1. Statement of aims and objectives
2. Selection of learning experiences / content
3. Organisation of learning experiences
4. Evaluation

Figure 1: The Linear/Objectives Model of Curriculum Design
Adapted from Brady (1992: 69) and Codd (1993b: 6)

Features of the objectives model, then, are: the pre-specification of the ends, the separation of the means from the ends of teaching, the separation of learning from evaluation, an emphasis upon aspects of learning that can be observed and measured, and greater emphasis upon questions of *how* than questions of *why* (see Brady, *ibid.;* and Codd, *ibid.*).

Brady (*op. cit.*: 69) points out that as well as being known as the "objectives model", Tyler's model is variously known "as the 'sequential', 'rational', 'logical', 'scientific', classical' or 'means-end' model". Also, the objectives model is sometimes referred to as a technical-linear (Codd, 1993b) or technological model (Codd, *ibid*, 1989, 1993c; Posner, *op. cit.*). Whichever of its various names is adopted, the objectives model, as noted above, is closely related to the production model.

The comparison of curriculum construction, teaching and learning with the production process in a factory provides a persuasive metaphor in support of the objectives model. No doubt the association with Taylor's "scientific" methods has added to the metaphor's credibility and persuasive power.

Posner (*op. cit.*) describes another equally persuasive metaphor used in association with the objectives model. It is a travel metaphor. Like the factory metaphor, the travel metaphor is used to convince curriculum planners, teachers, students and the general public of the logic of objectives model. It is particularly persuasive in regard to the pre-specification of objectives, based upon the seemingly reasonable argument that, if one is to take a journey, the destination is determined first, before the route. But the destination itself is assumed as a given, rather than being seen as a matter of choice. Similarly, the metaphor encourages the view that the choice of route, or means, is a technical matter, rather than a matter to do with human values. Overall the travel metaphor, like the factory metaphor, emphasises *how* or *what* rather than *why* questions; or technical rather than value considerations.

Another form of the objectives model which has received particular attention, especially overseas, in recent years is found in the *competency* movement.

COMPETENCY APPROACH TO CURRICULUM DEVELOPMENT

The competency approach to curriculum development elaborated by writers (such as Bailey, 1993; Bowden and Masters, !992; Hager and Gonczi, 1993; Heywood, Gonczi and Hager, 1992; Gonczi and Hager, 1992; Gonczi, Hager and Athanasou, 1993; Field, 1990; Fletcher, 1992; Foyster, 1991; Jessup, 1991; Mansfield, 1989; Masters and McMurray, 1990; Porter, 1993; Scott 1991; Thompson, 1991; and Watson,1993) during the late 1980s and 1990s is, essentially, a refinement of the objectives approach. Gonczi and Hager (1992), for example, link the emergence of the competency movement with the more general behavioural objectives movement which began in the United States in the 1950s and became popular in the 1960s and 1970s. The behavioural objectives movement, Gonczi and Hager (*ibid.*:32) point out, "promoted the detailed specification of goals of educational courses as lists of observable behaviours that students were expected to demonstrate on completion of a course". To facilitate the attainment of the pre-specified observable behaviours (that is, objectives), courses were organised into discrete, sequenced modules. And standards-based or criterion-referenced tests were used to determine whether the students had mastered the objectives in each module.

In comparison with narrow behavioural objectives, competency is seen in terms of a broader, integrated performance in an employment context, including the possession of relevant underlying individual attributes (for example, skills, knowledge and attitudes) (Gonczi and Hager, *ibid;* Hager and Gonczi, *op. cit.;* Jessup, *op. cit.;* Toohey, Ryan, McLean and Hughes, 1995; Watson, *op. cit.*).

Jessup (*op. cit.*: 25) defines competence as, "performing to occupational or professional standards." He points out that, for the National Vocational Qualifications (NQV) in England, a shift has taken place whereby competence is

determined primarily by industry, instead of, as previously, by education. As do other writers (for example, Gonczi, 1992; Scott , *op. cit.*; Watson, *op. cit.*), Jessup accepts uncritically the instrumental purpose of education and training in achieving economic purposes as defined by the government and other power-holders.

THE NZQA'S OBJECTIVES / OUTCOMES MODEL

In New Zealand, the National Qualifications Framework, designed by the NZQA, features *unit standards* as the basic units of learning, rather than competencies. A move for unit standards to be determined by industry, professions and other "users" of the education and training's "product" was indicated during the late 1980s and early 1990s. For example, in 1991, *The Framework and Polytechnics* (NZQA, 1991b) stated that qualifications would "consist of tailored packages of units which are normally determined by professional and industry groups or by single provider enterprises" (p.5.). The intention was even clearer by 1993, at which time *A Future with Standards* stated:

> In each area of learning there is a national standards body. The members of a standards body represent key interested parties within a particular area. In career areas, industry is the central player. ...//...The main tasks of these bodies are to set standards for qualifications and make decisions that ensure these standards are maintained and improved.
>
> (NZQA, 1993b: 4)

The message for polytechnics was that even if they had been involved in setting the ends of their education and training programmes in the past, they were not going to be involved in the future. They were to be concerned with only the means. In other words, the means were conceived to be separate from the ends of education.

Figure 2 is adapted from Codd's (1995) *Outcomes Model of Instruction and Assessment,* which he indicates is the model followed by the NZQA. The model in Figure 2, as was Codd's original model, is very similar to the model shown above, in Figure 1; except Figure 1 is a model of curriculum design, whereas Figure 2 is a model of instruction and assessment. The adaptations made in Figure 2 from

Codd's original *Outcomes Model of Instruction and Assessment* are not substantive changes, but emphasise the model's objectives character and link it with the NZQA. Thus it is renamed as *The NZQA's Objectives/outcomes Model of Instruction and Assessment.*

1. Outcome Objectives (requires precise description and pre-specification).
2. Entering Behaviours.
3. Instructional Methods (involves application of the means).
4. Outcomes Assessment (requires accurate measurement of the actual outcome against the pre-specified end).

Figure 2: The NZQA's Objectives/outcomes Model of Instruction and Assessment
(Adapted from Codd, 1995: 4)

Referring to the NZQA's methodology and the epistemology underlying the outcomes model of instruction and assessment, Codd identifies three fundamental separations that are implied. The first is the separation of the development and specification of learning outcomes from educational judgements and decisions required to produce the outcomes. This is, in effect, the separation of the means from the ends. The second is the separation of facts from values, which Codd links with the positivist epistemology underlying the model. An implication is that measurement and observation can avoid the problems of values. The third is the separation of assessment and evaluation from teaching and learning. This separation, together with the separation of facts from values, allows teaching and learning to be measured and evaluated by officials and others outside of education. It permits a technocratic form of accountability. Considered together, the separations imply that teaching and learning can be pre-specified, described and measured objectively, and thus controlled from outside of education. The present

study indicates that, indeed, an objectives/outcomes model, as described above, was adopted by the NZQA in its early days [see the discussion in Chapter Seven, under Section 2, Analysis of official documents (1995/1996), Continuums 1 and 2]

Codd (1995) states that "as initially conceived, unit standards were to be prescriptive behavioural statements..." (*ibid*: 3). Later the necessity for other forms of less observable standards was recognised [NZQA, 1996; see also discussion on NZQA's "agreed standards", in Chapter Seven, under Section 3, Analysis of official documents ...1996-1999, Continuum 2]. However, despite modifications to the form of the standards, the objectives/outcomes model has remained as a central feature of the NZQA's Qualifications Framework (see discussion in Chapter Seven, under Section 3, Analysis of official documents ...1996-1999, Continuums 1 and 2). Standards-based measurement, a form of assessment which is compatible with the requirements of the National Qualifications Framework (Croft, 1993; Sass and Wagner, 1992) has also been retained by the NZQA, although, at the time of writing, recent challenges appear to be leading to some changes, at least. (see discussion in Chapter Seven, under Section 3, Analysis of official documents ...1996-1999, Continuum 2).

STANDARDS AND STANDARDS-BASED ASSESSMENT

Standards-based assessment: Intended as an improvement on norm-referenced assessment

In the NZQA publication, *Beyond the Norm? An Introduction to Standards-based Assessment,* Peddie (1993) explains that critics of the previous system of norm-referenced assessment have wanted "each learner tested simply to see what *that learner* knew or could do" (*ibid.*: 23), rather than being compared with other students in the test population as is the case with norm-referenced assessment. Standards-based assessment, he points out, offers that advantage. When students

are assessed in accordance with standards-based assessment, they are assessed against a pre-determined standard, rather being compared with other students taking a particular test or examination. They are awarded the assessments which they actually achieve. Furthermore, in theory, all the students can achieve the "particular standard desired" (*ibid.*: 23).

Peddie elaborates that in standards-based assessment the number of students who meet the requirement is determined by the level at which the standard is set. He explains that, at times, features of the task itself, such as safety considerations, or acceptable tolerances in an engineering course, determine the standard. In many other instances, the standard is based upon some expectation of what is achievable, and, in this sense, he admits, it does involve a form of comparison, which may be considered by some critics to be similar to norm-referenced assessment. But this comparison, Peddie contends, is based upon the prior experiences and expectations of relevant experts. It is thus unlike norm-referenced assessment where the comparison is with the achievement of the particular group taking the test.

Standards-based assessment: Is it actually norm-referenced in a disguised form?

Croft (1993) challenges the NZQA's notion of standards-based assessment and, in doing so, presents a view of *standards* that is diametrically opposed to Peddie's.

In both its general usage and its usage in assessment, the term *standards*, Croft argues, has a meaning which involves comparison with others and, in that sense, includes elements of meaning which are based upon norms. He explains that, even if setting a standard is not directly influenced by the performance of particular candidates, it is likely to be shaped by knowledge that the teachers and other experts have developed and, perhaps, internalised about the performances of other students. There are in education, Croft believes many examples of standards which

are based on expectations of what a reasonable level might be. He thus concludes that "standards for many areas of education are more rooted in norm-based considerations than in considerations of the task itself" (Croft, *ibid.*: 6). In effect, he suggests that, rather than being transparent, so called standards-based assessment involves unacknowledged elements of norm-referencing.

Thus both Peddie and Croft refer to the notions or theories about what their students ought to be able to do that teachers carry in their heads. Peddie argues these constitute "standards", while Croft argues that they are unacknowledged norms. Whichever view is accepted, they are certainly not transparent measures of performance. It would seem that they are, in effect, a form of intuitive knowledge which is being used but not acknowledged.

Croft (*ibid.*) argues "that the requirements of the Framework have been the dominant force driving promotion of standards-based assessment..." (p10). Instead, he urges, validity and reliability should be at the forefront of considerations.

In its 1996 publication, *Learning and Assessment: A Guide to Assessment for the National Qualifications Framework*, the NZQA (NZQA, 1996) introduced a distinction between *transparent standards* and *agreed standards*. *Transparent standards* are defined as standards in which "the criteria are so clear and unambiguous that they can be interpreted consistently by all assessors" (*ibid*: 9); whereas *agreed standards* are standards in which "the level of performance that is considered acceptable will be established only in practice, by consultation and agreement among assessors and moderators" (*ibid.*).

Codd (1996a: 14) argues that the introduction by the NZQA of *agreed standards* "is little more than a linguistic manoeuvre necessitated by the fact that the so-called

'standards-based' assessment upon which unit standards are said to be based cannot avoid 'norm-referenced' judgements." Codd's criticism is consistent with Croft's above criticism that the requirements of the Framework are the dominant force driving promotion of standards-based assessment. In other words, the NZQA advocates a system of assessment that fits its objectives/outcomes curriculum model and is "re-interpreting" norm-referenced assessment as standards-based assessment for this purpose. (See Chapter Seven for further discussion of *transparent* and *agreed* standards).

Standards: The problem of precise description

A number of writers who critique New Zealand's National Qualifications Framework argue that important aspects of knowledge-based subjects cannot be adequately captured and expressed in unit standards (Codd, 1994, 1995, 1996a, 1996b; Codd, McAlpine and Poskitt,1995; Elley, 1992, 1995, 1996b; Hall, 1994, 1995; and Irwin, Elley, and Hall, 1995). It is difficult, for example, to write precise standards for abilities such as those involved in reading critically texts of different genre, writing fluently on a wide range of topics and devising strategies to solve numeric problems (Elley, 1995). And to write precise objectives for achieving excellence when excellence is conceived as going "beyond the task requirements" (Hall, 1994.: 15). As Codd (1994a: 5) points out "the process [involved in teaching and learning] may be more important than the outcome" . Nevertheless, Codd (1996a, 1996b); Codd, McAlpine and Poskitt (1995); Elley (1996b); Irwin, Elley, and Hall (1995); and Hall (1994, 1995) all accept that unit standards and or objectives may be satisfactory for skills-based subjects.

Elley (1995) points out that many of the statements of so-called standards make use of relative terms (eg, *more* fluent, *increasing* accuracy, a *wider* range of strategies) or vague terms (eg, can *understand* x, can use *appropriate* strategies). Standards written in this manner are, he argues, analogous to setting the standard

for selection for the Olympic marathon as "completing the distance very quickly" (Elley, *ibid.*: 81). They provide criteria to be considered in judging performances, but do not clearly specify the level of the quality within the criteria.

Another related problem in writing standards is that of linguistic representations. Elliott (1991) makes this point using the metaphor of shadows [which has also been used by others, for example, Schwab (1989)], when he states, "They (standards) are simply the shadows of the knowledge and abilities we wish to promote" (ibid: 24). The point is that standards are written descriptions of knowledge, skills and attitudes. They are representations rather than the actual thing and as such, as Elliott suggests, often convey less than the full meaning. Elliott believes standards are always problematic and contestable. Eisner (op. cit.) also believes that capturing standards in language is problematic. He observes that "much, perhaps most, of what we aspire to and cherish (in education) is not amenable to discursive formulation" (Eisner, *ibid.*: 98). He elaborates:

> Language is, after all, a surrogate for experience. We try to articulate in words what we know in non linguistic ways.
>
> (*ibid.*)

Thus it is contended that much knowledge, especially that related to knowledge-based subjects as opposed to skills-based subjects, is difficult to capture in the precise, linguistic description required of a standard. Writing precise standards is problematic, if not impossible.

Specifying standards is only one side of the problem. Standards-based assessment, as proposed by the NZQA, requires the *accurate* measurement of learners' performances against the standards.

Standards: The problem of assessment / measurement.

Even if standards can be described precisely, testing introduces further sources of difficulty or error. Elley (1996a) makes this point when he states that, "testing is not an exact science". He continues:

> Teachers can only sample pupil behaviour - they cannot capture it all. Pupil behaviour differs from task to task, and from day to day. It is affected by the particular tasks the teacher selects for assessing, by the wording of the questions, by the attitude of the tester, by the time allowed for completion, by the recency of their study of such tasks, and many other factors
>
> (Elley, 1996a:16).

Elley (1995; 1996a; 1996b) discusses errors that arise from various sources, including: the way the questions are worded; the way questions are ordered; the sample of questions selected; the time allowed for a test; and the assumption that skills can be decontextualised and measured in an abstract manner.

Elley's (1996b) explanation of the problem of the sampling in relation to knowledge-based subjects is of particular interest, because it also reveals how he conceives this form of knowledge. He explains that knowledge-based outcomes "cannot be summarised into neat, logical, homogeneous categories or ordered into a linear progressive sequence as you can in many skill-based subjects" (p. 69). Consequently, the tester cannot simply sample a particular aspect of learning and predict that, because students know A, they also will know B, C and D. There is no ladder of mastery or logical connection that enables the sort of predictability that is possible with, say, a sampling of items to test multiplication tables.

The reliability of assessments could be improved, Elley (1995; 1996a; 1996b) suggests, by the specification of test question in the curriculum, so that all students could be asked the same questions under the same conditions. But, he argues, this procedure would be likely to lead to narrow teaching and learning in preparation for the tests. Consequently, it has the potential to be damaging to student learning. Elley also points out that teachers would be discouraged from using their

professional judgement to interpret the curriculum to suit the educational needs of particular groups of students.

Elley (1995) concludes that current standards-based assessment techniques are too blunt for assessment of knowledge-based subjects in high-stakes situations. Nevertheless, there are two sorts of situations in which he believes a standards-based approach is satisfactory. One, as already noted above, is the assessment of some skills-based subjects. The other is when the assessment is used for formative, rather than summative, purposes.

Standards-based and norm-referenced assessment have different purposes: Formative and summative assessment

In their analysis of assessment policies associated with the educational reforms of the late 1980s and early 1990s in New Zealand, Codd, McAlpine and Poskitt (*op. cit.*) refer to "major tension within the National Qualifications Framework between standards-based assessment ... and norm-referenced assessment..." (p.43). Similarly to Elley (1995), they suggest that the two forms of assessment are best suited for different purposes. Standards-based (or criterion-referenced) assessment, they suggest, is best suited for diagnostic, formative assessment of students' performance by teachers as part of the normal teaching and learning process. Norm-referenced assessment, on the other hand, they suggest, is best suited for other purposes such those involved in accountability, monitoring standards and summative evaluation. Underlying the different purposes, Codd et al.'s analysis, reveals tensions between, on one hand, educational interests seeking a form of assessment essential for effective classroom practice and, on the other hand, political interests seeking a form of assessment which will serve to monitor standards and provide evidence for accountability purposes (i.e., measurement of outcomes).

Elley (1995) distinguishes between standards-based assessment in formal testing and standards-based techniques used by teachers in the classroom as part of the normal teaching and learning processes. He argues that standards-based teaching and learning are pedagogically defensible and desirable because "students of all ages and stages typically learn more rapidly when their teachers set them realistic standards to aim at, and when the students sense that they are progressing towards them" (p. 78). Recognition of the value of standards-based teaching and learning is reflected, he asserts, in systems which effective teachers establish in order to set goals for their students and to provide feedback on the students' progress towards the goals.

The difference between formative and summative approaches to assessment reflects the difference between a process model of curriculum development and an outcomes/objectives model. The former focuses upon the integration of means with ends and the evolving process of teaching and learning. The latter focuses upon the attainment of pre-specified ends and, in doing so, separates the means from ends.

CURRICULUM, TEACHING AND LEARNING CONCEIVED AS A PROCESS

The criticisms levelled against the National Qualifications Framework and the associated concepts of standards and their assessment are, in effect, criticisms of the objectives model of curriculum development in which the means are separated from the ends of education. However, while the objectives model may have been the dominant approach over the past fifty years (Codd, 1993b), its acceptance has been by no means universal. The literature includes other conceptions in which, for example, the means and the ends are integrated rather than separated.

Curriculum development, teaching and learning in these conceptions are viewed as on-going processes rather than an outcome or product.

The integration of the means with the ends of education

Dewey's (1964a, 1964b; both originally published in 1939) description of the interaction of ends and means is particularly illuminating. He expresses the belief that it is absurd to set apart any end in education from the means by which it is produced. He argues that to select an end is to select an arbitrary point in a continuing process. Once reached, he reasons, the end becomes part of the means to another end. An arbitrarily selected point, seen as an end in this process, cannot, possess a value in itself "irrespective of all its existential relations" (*ibid.*, 1964b: 99) or of its further consequences as the means to further *ends-in-view*. In the following quotation, Dewey describes this process as the continuous coordination of activities (or the means) to be taken into account in attaining temporary closures (or the ends) and the reconstitution of the ends attained as further means:

> In the continuous temporal process of organising activities into a coordinated and coordinating unity, a consistent activity is both an end and a means: an end, in so far as it is temporally and relatively a close; a means, in so far as it provides a condition to be taken into account in further activity.
>
> (Dewey, 1964b: 106)

To Dewey, an end is a temporary coordination of activities into a unified organisation of activities. Thus the end-in-view is "that particular activity which operates as the coordinating factor of all the other sub-activities involved" (Dewey, *ibid.*, 1964b: 105). The end-in-view becomes the end which then becomes the means to further ends-in-view. There is, in effect, an ongoing dialectical relationship between means and ends with both continuously "becoming" as knowledge unfolds.

This view of the inter-relationship of means and ends links with Dewey's belief that, in education, the processes involved in using and gaining knowledge are of crucial importance, rather than the accumulation and storage of knowledge which may soon become obsolescent. And, linked with this belief, he stresses the need to plan education as a process with the teacher facilitating appropriate educational experiences, rather than planning education in terms of particular content or a product. He also reasons that continuing intellectual growth is a worthwhile end in itself (Kelly, 1986; Dworkin, 1959; Archambault, 1964).

The notion that educational processes are of paramount importance is expressed eloquently by Dewey, but it did not originate with him. For example, as long ago as the fourth century BC., Socrates (Grob, 1984) advocated a view of wisdom as the process of striving towards an end, rather than as a body of knowledge. And more recently Stenhouse (1975) has advocated a curriculum model which focuses upon process rather than product or ends.

Schwab (1969; 1989) is another writer who rejects the objectives or means-ends model of curriculum development. Instead he advocates a *practical* form of *deliberation*. This method, he stresses, requires consideration of the widest possible variety of alternatives. It does not aim at forming generalisations or explanations, nor abstractions from principles; but focuses upon what ought to be done in particular situations. It involves judgement based upon deliberation. Schwab describes deliberation thus:

> Deliberation is complex and arduous. It treats both ends and means and must treat them as mutually determining one another. It must try to identify, with respect to both, what facts may be relevant. It must try to ascertain the relevant facts in the concrete case. It must try to identify the desiderata in the case. It must generate alternative solutions. It must make every effort to trace the branching pathways of consequences which may flow from each alternative and affect desiderata. It must then weigh alternatives and their costs and consequences against one another and choose, not the right alternative, for there *is* no such thing, but the best one.
>
> (Schwab, 1969: 26)

Schwab's practical deliberation involves the interaction of ends and means and evolves rather than working towards pre-specified objectives. Posner (*op. cit.*) points out that in rejecting the constraints inherent in the separation of the means from the ends, Schwab insists on a more flexible, varied, and iterative approach.

Hall (1994), in his paper, *Obstacles to the Integration of University Qualifications and Courses into the National Framework,* specifically advocates an iterative approach to curriculum development. In doing so, he argues "that the specification of 'elements' (objectives) should not be separated from the course design process" (p.1). Development (and delivery) of university courses, he maintains, ought to proceed by an iterative process. He explains that the "initial objectives may need to be modified several times as the teacher progressively integrates the assessment, content, type of delivery, availability of resources, student background, and so on into a coherent whole" (pp. 7-8). The dynamic, on-going process is guided by criteria relating to internal consistency as the course unfolds. Hall sees objectives more as hypotheses providing the initial direction for student learning, rather than invariable ends to be attained. As such they are subject to verification or change as the course and the iterative process proceed. For most courses in a university setting, the expectation, Hall contends, is for change to the objectives, rather than permanency. Thus, in Hall's view, university course development and delivery should proceed by a process involving interaction between the means and the ends of education.

Laird and Stevenson's (1994) curriculum model extends the argument for an iterative curriculum model, with interaction between the ends and the means of education, to competency-based vocational education and training. They describe curriculum development proceeding through an iterative form of development and refinement, rather than each process being undertaken sequentially and concluded separately. Thus *appraisal of concerns*, *formulation of intent* and *deliberation*

about practice are, interacting, parallel concerns. Laird and Stevenson explain that a change to one element is likely to have consequences for the other two elements, which will then require consideration and, if necessary, adjustments to be made. The process is repeated with mutual interaction amongst the concerns, intent and practice until a satisfactory and complementary conceptualisation is achieved. All of which is influenced by the *values orientation* of the developer or developers.

ARGUMENT IN FAVOUR OF OBJECTIVES

So far this chapter has pointed to weaknesses in the objectives and/or outcomes curriculum models which separate the means of education from the ends. A model which integrates the ends and means into a process appears to be a more satisfactory alternative. However, both Eisner (*op. cit.*) and Skilbeck (1984) argue cogently for the acceptance of a broader form of objectives or outcomes than those advocated by the NZQA.

Eisner agrees that narrow behavioural objectives are inadequate "for conceptualising most of our most cherished educational aspirations" (Eisner, *ibid.*: 101), but argues that broader, less specific forms of objectives are relevant where behavioural objectives are unsatisfactory. He identifies three different sorts of objectives:

(1) *Behavioural objectives*, which are satisfactory for learning involving straightforward observable skills.

(2) *Problem Solving Objectives*, a broader less specific form of objectives which are appropriate for learning involving problem solving where detailed outcomes may be unknown at the outset. And, further, there is no one correct solution, but potentially an infinite number of possibilities. Eisner illustrates his point by

referring to an architect whose brief specifies in advance the problem and criteria which the solution must satisfy, but not the solution itself.

(3) *Expressive Outcomes* or the sorts of learning activities that we expect in the fine arts. They are also important in other fields, particularly when the interest is to court surprise, cultivate discovery or to find new forms of experience. To achieve expressive outcomes, curriculum planners and teachers plan activities and experiences which are seminal, rather than designed to attain general or specific objectives.

Skilbeck (*op. cit.*) maintains that advocates of the process model, such as Holt (1983), Kelly (1982), and Stenhouse (*op. cit*), have been too hasty in their rejection of objectives. He argues against dichotomising objectives and process; that is, outcomes *of* (things learnt) opposed to contexts, conditions, criteria and activities *in* learning. He believes both of these forms of knowledge are important. He states:

> ..it is erroneous to suggest that the objectives model is *necessarily* coupled with pre-specified, measurable, specific items (facts, concepts, skills) or to imply that ascertainable learning outcomes are not important in discussing learning processes.
>
> (Skilbeck, 1984.: 210)

Skilbeck calls for the development of objectives suitable for a full range of learning, including: behavioural outcomes, processes, values, concepts, dispositions, styles, and so on. They are also to take account of the environment and characteristics of the students. And may be written from various foci, including long term, short term, specific, broad-general, higher-order cognitive, and lower-order informational.

Advocates of the process model, Skilbeck notes - with particular reference to Stenhouse, eschew pre-specified objectives in curriculum planning, design and development; but advocate the search for procedures, principles and criteria to

guide action. Form and structure are seen to be important rather than skills and knowledge, which are tentative. Skilbeck argues that "the tendency of thought is towards that projective, intentional, action mode where conditions for learning are defined and steps taken to establish them" (Skilbeck, *ibid.*: 224). His point is that intentional action is, in effect, what he, himself, seeks to achieve through the use of objectives. He further argues that, whereas much concerning the achievement of the intentional action in Stenhouse's curriculum, for example, is entrusted to the professional judgement of teachers, the writing of objectives can help to improve the clarity of what is intended. It provides a focus for discussion of the intentions and for deciding how the achievement of the intentions might be *indicated* in the actions of the students. In Skilbeck's view, then, objectives provide an ongoing, flexible focus for teaching and learning. They help teachers to clarify their aims and to formulate indicators to help in assessing and reflexively, evaluating what has been achieved.

Eisner's and Skilbeck's broader objectives answer many of the criticisms of an objectives and/or outcomes approach to curriculum development, teaching and learning. But a model based upon such objectives still may be problematic, unless there is flexibility to integrate the means and the ends of teaching and learning and unless this teaching process is largely the responsibility of professional educators; rather than the present situation in which the means and the ends are separated with the ends being controlled by government and other interested parties from outside of education. The problem thus remains that in recent years, at least, governments have been more interested in gaining more control over education, rather than giving control to educators (Apple, 1993; Codd, 1990; Jackson, 1993; Winder, 1995).

SUMMARY AND CONCLUSIONS

The NZQA's outcomes curriculum model has been shown to share the same fundamental characteristic as the factory, objectives and competency models. These characteristics include the separation of the means from the ends of education, the pre-specification of outcomes (in the form of product requirements, objectives, standards or competencies) and the evaluation of success by the measurement of the pre-specified outcomes against the actual outcomes. It is a model which allows, if not encourages, the desired outcomes, in the form of standards, to be set by "experts" from outside of education.

Problems inherent in standards and standards-based assessment, which are central aspects of the NZQA's model, were discussed. The main points raised were that: (1) Rather than lending themselves to precise definition and measurement, standards can be difficult to describe precisely, and in some instances may defy linguistic description. (2) Educational testing is not an exact science. (3) Standards-based assessment actually may include unacknowledged intuitive knowledge and/or norm-referenced information, rather than being what it purports to be. (4) Standards-based assessment may be satisfactory for skills-based subjects but is not sufficiently accurate for knowledge-based subjects where the results have "high-stakes" implications.

Standards-based assessment was seen to be satisfactory when it is used for formative rather than summative purposes or for the assessment of skills-based subjects.

Consideration of writing by Dewey, Schwab, Hall, and Laird and Stevenson suggested, as an alternative to the outcomes/objectives model, a model which integrates the means and the ends of education into curriculum development,

teaching, and learning processes. Eisner's and Skilbeck's arguments for a broader form of objectives were considered as another possible alternative. It was considered, however, that such objectives would be best accommodated in a process model in which educators were given professional control over both the ends and the means of education.

Discussion in the chapter indirectly indicated several aspects of the NZQA's conceptualisation of teaching and learning. Such aspects included the conceptions that: teaching and learning are instrumental activities which ought to be designed so that students will achieve pre-defined standards; the means of education can and ought to be separated from the ends; and student outcomes and/or "standards" can be described precisely; pre-specified before teaching takes place and actual outcomes measured against them following teaching and learning.

Further problems arising from the objectives/model are discussed in the next chapter.

CHAPTER FOUR

MORE PROBLEMS WITH THE OBJECTIVES/OUTCOMES CURRICULUM MODEL

This chapter adds to the discussion of problems arising from the objectives/outcomes curriculum model (the NZQA's model), begun in the previous chapter. In particular, it focuses upon problems associated with tacit/intuitive knowledge, holistic knowledge, the context of learning, learning conceived as commodity rather than cultural or human attribute, deep versus surface learning, open-ended versus closed learning, excellence, and values.

TACIT / INTUITIVE KNOWLEDGE

A difficulty inherent in the NZQA's notion of precise outcomes/standards and its requirement that these must be pre-specified in the curriculum prior to the commencement of teaching and learning is that humans possess, and may act on the basis of, intuitive or tacit knowledge. On occasions, people "just know", without knowing how or why they know. This sort of knowledge cannot be pre-specified in the form of precise standards. Writers who recognise and develop the notion of tacit or intuitive knowledge include the following:

Dewey (1964c; originally published in 1904) introduces a form of intuitive knowledge when he discusses the "mental habit" which he believes "would-be" teachers ought to develop. He describes the development of what is, in effect, the development of intuitive, educational insight which predisposes the would-be teachers to perceive students and learning in a manner that is likely to lead to educational growth. He elaborates that by incorporating knowledge of subject-matter, and psychological and ethical philosophy of education into their way of

thinking, would-be teachers may develop a mental habit which becomes part of their automatic, working tendencies of observation, insight, and reflection.

In his texts *Knowledge: Towards a Post-critical Philosophy* and *The Tacit Dimension*, Polanyi (1957, 1967) makes the point well "that one can know more than one can tell" (*ibid.*: 1967: 8). Amongst other examples, he draws attention to a phenomenon which is a common human experience: we can recognise people from the appearance of their faces, but often may not be able to describe the details of exactly how we do so. Similarly, he refers to expertise, such as that of a medical diagnostician, which involves as much the art of doing as the art of knowing. He calls this sort of expertise *connoisseurship*, and argues that "like skill, (it) can be communicated only by example, not by precept" (Polanyi, 1957: 54). Knowledge is a necessary, but not sufficient, condition for its development. Polanyi asserts that practical expertise, the art which cannot be learned by discursive means, must be learned by practice in a relationship between master and apprentice.

Schon (1983, 1987) also gives a central place to intuitive knowledge and to artistry. He points out that successful professional practitioners do not resolve many of the problems they encounter in their professional practice simply by instrumentally choosing the best technical means to achieve a particular end. The reality is that many of their everyday problems actually involve "messy, indeterminate situations" (Schon, 1987: 4).

On some occasions, according to Schon, professionals simply know intuitively what to do and act on that basis. He calls this *knowing-in-action*. On other occasions professionals think about what they are doing as they do it. They bring to bear on the particular problem, often intuitively, relevant aspects of what they

know from their professional knowledge and experience. Schon describes this process as *reflection-in-action*, which he describes as an:

> ... on-the-spot surfacing criticising, restructuring and testing of intuitive understandings of experienced phenomena.
>
> (Schon, 1983: 42).

A number of nursing educators (for example, Benner, 1884; Benner, Tanner and Chesla, 1996; Benner and Tanner, 1987; Leners, 1993; Pyles and Stern, 1983; Rew, 1988; Schraeder and Fischer, 1987; Young, 1987) recognise intuitive knowledge in nursing practice. In Benner et al's words:

> ... nursing as a caring practice, goes beyond theory altogether and shows that, where human meaning is at stake, one needs a kind of intuition that can never be captured by rational theory.
>
> (Benner, et al., 1996: 30).

To Benner et al. *clinical judgement* includes "both the deliberative conscious decision-making characteristic of competent performance and the holistic discrimination and intuitive response typical of proficient and expert performance" (Benner et al., *ibid.*: 2). They aim to "open up new possibilities about clinical judgement in the practice of expert nurses by attending to these nonconscious, non-analytical aspects of judgement" (*ibid.*).

To summarise, Polanyi makes the existence of intuitive knowledge clear. Schon's and Benner et al's views are similar, insofar as they both recognise the manner in which professional practitioners sometimes simply know intuitively what to do. Dewey suggests that would-be teachers ought to learn to think and act intuitively in educationally desirable ways. In Schon's, Benner's and Dewey's accounts, intuition takes place within the context of, and is framed by, practitioners' professional knowledge and experience. Polanyi's connoisseurship is similar. In all the accounts, intuitive knowledge is a more or less spontaneous response to an holistic set of circumstances.

HOLISTIC KNOWLEDGE

The NZQA uses the metaphor of *building blocks* to describe the way in which courses are constructed by selecting for inclusion in a course those standards from the National Qualifications Framework that are considered to be relevant for the particular purpose. (NZQA, 1991a; NZQA, 1991b; NZQA, 1993a; NZQA, 1993b).

In contrast to the NZQA, Codd et al. (1995) use the less flattering metaphor of a *smorgasbord* to describe the NZQA's method of course construction They, along with others, such as Hall (1994, 1995a, 1995b) and Stevenson (1993), are critical of the emphasis placed upon component unit standards at the expense of the overall coherence or the holistic nature of the course. They are also critical of the way in which knowledge is compartmentalised into unit standards for inclusion on the Framework, arguing that this process involves the fragmentation and simplification of complex domains of knowledge.

Stevenson (*ibid.*), writing about the competency movement in Australia, makes the point that important aspects of learning and knowledge are overlooked in a modular approach. He states that the disaggregation of knowledge into modules has serious implications for learning. "It de-emphasises and leaves to chance, the acquisition of knowledge needed to summarise, integrate and synthesise separate modules; and knowledge which transcends or draws upon separate modules" (Stevenson, *ibid.*: 98).

An implication brought to light by Codd et al's, Hall's and Stevenson's writing is that knowledge has holistic characteristics over and above the sum of its component parts. But the building-blocks approach at the heart of the National

Qualifications Framework is not well suited to taking account of the holistic characteristics of knowledge.

CONTEXT OF LEARNING

The NZQA's building-blocks metaphor and its notion that unit standards can be combined in different ways in different courses implies that learning, to some extent at least, is independent of its context and thus transfers readily from one situation to another. It is an implication which is challenged by researchers.

In his discussion of assessment, Elley (1995) argues that most skills cannot be decontextualised and measured in the abstract, in the manner that is assumed in standards-based assessment. To substantiate his point, he cites research undertaken by Reid and Elley (1991) and Yates and Chandler, (1991), which indicates that the level of reading skills displayed by students is related to the material read (that is, the context of the reading). He also refers to research undertaken by Elley, Bacham, Lamb and Wyllie, (1989) on the variability of student performance in levels in writing, according to the topic the students chose to write on.

Hall (1994, 1995a) argues that higher-order generic skills such as thinking, reasoning, critical analysis, problem solving, research and communication cannot be developed independent of context. They are, he maintains, developed through the study of a body or domain of knowledge and there is no evidence that they transfer readily across a wide range of situations.

Research into learning processes also suggests that the assumption that unit standards are transferable is problematic. Researchers (Glaser, 1984; Collins, Brown and Newman, 1989; Gott, 1989; Greeno, 1989; Scandura, 1981; Anderson,

1982; Evans, 1991; Stevenson, 1986a, 1991) have found that *deep* conceptual learning involving understanding, not simply learning demonstrated by observable performance, is required for transfer of learning from one context to another. Researchers (Chi, Feltovich and Glaser, 1981; Glaser, 1984; Stevenson, 1986b; Gott, 1989; Pea, 1987; Lave, 1989; Perkins and Salomon, 1989) have also found that learning *processes*, as opposed to an emphasis on *outcomes*, are important in developing deep conceptual understanding.

LEARNING CONCEIVED AS COMMODITY RATHER THAN A CULTURAL OR HUMAN ATTRIBUTE: A HIDDEN PROBLEM FOR CURRICULUM PLANNERS/DESIGNERS

The NZQA's objectives/outcomes model encourages an instrumental conception of teaching and learning in which knowledge is conceived as a product or commodity in the marketplace Codd, (1994a; 1996a). In this conception of teaching and learning, the emphasis is placed upon skills that can be performed and information that can be acquired. Learning is conceived as the accurate reproduction of knowledge defined by the curriculum, faithfully taught by the teacher and assessed by measuring the actual outcomes against the pre-specified outcomes.

Codd (1996a) points out that, in the market view of education, knowledge is no longer conceived as a social and cultural achievement, but is reduced to a set of exchangeable 'credits' or a "currency" of skills. "Qualifications no longer 'qualify' the attributes and capabilities of a person, but come to be commodified as credentials" (Codd, *ibid.*: 7). Knowledge is no longer conceived as understanding acquired through an interactive process of teaching and learning in which both the mind of learner and knowledge itself are transformed (Barnett, 1994; Codd, 1994a; 1996a). Rather knowledge, teaching and learning are conceived as a technical means of providing students with "packaged", instrumental skills and knowledge

purchased in the education market. It is, as Codd (1995) suggests, a technocratic conception of education based in the positivist paradigm.

In a sense, knowledge, teaching, learning and qualifications are reified to have a "real" existence apart from the learners. They are seen more as external, real commodities, rather than as qualities or processes inhering in people. Curriculum planners are thus encouraged to regard students as purchasers (Barker, 1995) or recipients of knowledge. They are likely to believe that a curriculum can, and ought to be, designed to meet market requirements. However this approach is problematic. It does not focus sufficiently upon the learners themselves.

Becker's (1968) research of university students' learning, by means of participant observation, illustrates the importance of considering students as active agents in the learning process, rather than simply as recipients of learning, knowledge and qualifications. He found that despite students' expectations of a stimulating and liberating experience at university, their academic lives were dominated by assessment requirements. The students' response to the pressures they felt from the assessment requirements was to engage in coping ploys and instrumental forms of learning in order to achieve the grades required Becker thus describes a learning situation in which what might have been - what was intended by the lecturers - was transformed by the students' responses to the situation. Writers (Apple, 1993; Codd, Cornbleth, 1990; 1993b; Snyder, 1971) describe this sort of unintended influence of teaching/assessment practices and/or administrative procedures and/or the teaching environment as the influence of the "hidden curriculum".

The message arising from Becker's research and from those who draw attention to the effects of the "hidden curriculum" is that the curriculum model needs to provide for interaction between the planners and the learners. Otherwise the

planners are unlikely to know how the learners in a particular situation interpret and "act on" the curriculum during the teaching and learning process. The curriculum as it is "learned" may be quite different from the curriculum that the planners planned and lecturers "taught". What is problematic for the NZQA is that its curriculum model discourages, if not prohibits, this important interaction between the planners and the learners. Its model, as discussed in Chapter Three, separates the development and specification of learning outcomes from educational judgements and decisions required to produce the outcomes. That is, it separates the means from the ends of teaching and learning.

Becker's research is based in the interpretivist or phenomenological paradigm in which understanding human experience is a central concern. Thus his focus upon learners' experiences in his research on learning. Other learning researchers who also base their research in the phenomenological paradigm and who also emphasise the importance of considering learners' responses in curriculum planning and teaching include: Perry (1970); Marton, Hounsell and Entwistle (1984); and Dahlgren, Marton and Saljo; Svensson; Saljo; Hodgson; Hounsell; Laurillard; Ramsden; Gibbs, Morgan and Taylor and Entwistle and Marton - all of whom contribute a chapter to Marton et al.'s (*ibid.*) book, *The Experience of Learning.*

Similarly, researchers advocating the use of an iterative process in curriculum development, such as Hall (1995a, 1995b) and Laird and Stevenson (*op. cit.*), recognise the importance of students' backgrounds and needs. They iteratively integrate aspects relating to the students with other aspects in the process of designing and developing curricula.

In summary, the NZQA's conception of learning and knowledge as commodities in the market is consistent with the notion that curricula can be developed apart from the learners, according to market requirements. It is a conception that tends to

reify learning, teaching, knowledge and qualifications. It tends not to recognise learning, teaching and knowledge as cultural, human qualities; or qualifications as indicators of qualities inhering in people. Thus, the market conception of teaching and learning does not recognise interaction that occurs in the teaching process, in which both the understanding of the learner and the knowledge itself are transformed. Further, it tends not to recognise that the interaction itself may affect how learning takes place and what is learned or not learned. Recognition of this interaction between the learner and knowledge is also discouraged by the separation in NZQA's curriculum model of the development and specification of learning outcomes from educational judgements and decisions required to produce the outcomes. Against the NZQA's approach, researchers emphasise the importance of understanding the learner and the process of learning.

DEEP LEARNING VERSUS SURFACE LEARNING

Marton, Hounsell and Entwistle (*op. cit.*) and the researchers of learning who contribute chapters to their book develop the notions of *deep* versus *surface* learning and *atomistic* versus *holistic* learning. These concepts are also developed in separate publications by researchers such as Entwistle and Ramsden (1983), Marton (1988), Ramsden (1992) Saljo (1975), Svensson (1976), and Whelan (1988). Ramsden's (*ibid.*) work is particularly insightful.

Ramsden stresses that the *approach to learning*, that is, the relation between the learner and the material being learned, is a key concept in the consideration of learning (and teaching). It comprises two separate aspects. One concerns the learner's *engagement* in learning - whether the learner actively engages in the task, searching for meaning and understanding; or, more passively, simply does what stands out as having to be done. The second aspect concerns how the learner *structures* or organises the task - whether the learner focuses on relating the

different aspects of learning tasks to one another, or simply focuses on each component as a discrete entity. In practice, both aspects, the *engagement* and the *structuring*, occur together. For example, a learner cramming for an exam, which is believed to require the reproduction of factual information, most probably, will simply *engage* in the task at the level of learning discrete facts - doing what stands out as having to be done. The task is thus *structured* in terms of discrete components. On the other hand, the *engagement* of a learner who is concerned to understand the meaning of a subject is likely to include a focus on *structuring* the task in order to gain an holistic understanding.

Thus, Ramsden theorises, the *learner's approach* leads to *surface* or *deep* learning. *Surface* learning (sometimes referred to as surface-atomistic learning), involves passively learning something in order to reproduce it, with the learner focusing on each discrete part of the task. In contrast, *deep* learning, (sometimes referred to as *deep/holistic* learning), involves searching for meaning and connections, integrating information, with the learner seeing the task holistically.

Ramsden cites empirical research which shows that deep approaches are related to higher quality outcomes and better grades, whereas surface approaches are related to poorer outcomes. Further, deep approaches are associated with enjoyment of learning, whereas surface approaches are associated with dissatisfaction.

Ramsden believes that "learning in educational institutions should be about changing the ways in which learners understand, or experience, or conceptualise the world around them" (Ramsden, *ibid.*:. 4). By "the world around them" he means the world of the discipline or profession which the students are studying, including its concepts and methods. *Understanding*, he stresses, is the "vital competence" in the notion of learning. It concerns the "way in which students apprehend and discern phenomena related to the subject, rather than what they

know about them or how they can manipulate them" (*ibid.*). Learning is, thus, a qualitative change in a student's view of reality. It implies and includes the development of facility with a subject's techniques and the ability to recall relevant details, but is not simply an ability to memorise and use techniques without understanding how they apply to real problems.

Another problem, then, with the NZQA's conception of learning is that it does not encourage any distinction between surface and deep learning. For example, unit standards make no explicit distinction between surface and deep learning But they implicitly favour surface learning by emphasising observable, measurable outcomes. Also, by virtue of their nature, unit standards are more likely to focus attention upon the *quantity* of learning attained, rather than the *quality* of the learning. And, further, they emphasise the acquisition of specific, measurable skills, facts and knowledge, rather than the learning processes which Ramsden, and the other learning researchers mentioned above, argue are required in order to advance one's understanding and deep knowledge. Clearly, as much of the present study illustrates, a critical perspective of learning also finds much that cannot be accommodated satisfactorily by the NZQA's model.

OPEN-ENDED VERSUS CLOSED MODEL OF LEARNING

The outcomes/objectives model of curriculum development, teaching and learning advocated by the NZQA is a closed model insofar as it requires the ends of education to be determined in advance. But as the following examples from educational literature make clear, this model is problematic.

By arguing the case for objectives, as described in Chapter Three, Eisner (*op. cit.*) may at first glance seem to offer support for the NZQA's curriculum model, particularly as it was first proposed. But, then, Eisner recognises the inadequacy

of narrow behavioural objectives and proposes less specific, more open-ended forms of objectives for most educational curricula. He also, as described, introduces *expressive outcomes* to provide for curricula in which seminal activities and experiences are planned, but actual outcomes are unplanned and unknown, or, in other words, are open-ended and require a focus upon processes. Clearly, Eisner's proposals are not compatible with the NZQA's pre-specified, precise descriptions of standards.

Skilbeck's (*op. cit.*) defence of objectives was also described in the previous chapter. Like Eisner, he advocates the use of broader forms of objectives. More specifically, he proposes a five stage, cyclic objectives model for curriculum development, which includes the following stages: (1) Analyse the situation. (2) Define objectives. (3) Design teaching and learning programme. (4) Interpret and implement programme. (5) Assess and evaluate. It is an ongoing, but not necessarily linear, process in which objectives provide a focus for discussion, reflection and action. Thus he, too, advances a more evolving, open-ended conception of curriculum development, than the closed model advocated by the NZQA.

Dewey is another whose writing adds to the argument for an open-ended conception of learning and education. He refers to a process involving continuing growth in the context of evolving knowledge (see Kelly, 1986). Rogers (1969) also emphasises learning and education as continuous, open-ended processes when he states:

> The only man (sic) who is educated is the man who has learned to learn; the man who has learned to adapt to change; the man who has realised that no knowledge is secure, that only the process of seeking knowledge gives a base for security. Changingness, a reliance on process rather than upon static knowledge, is the only thing that makes sense as a goal to education in the modern world.
>
> (Rogers, *ibid.*: 104).

Similarly, writers such as Hawes (1979) and Stenhouse (*op. cit.*) emphasise open-ended educational processes in their curriculum models as opposed to the attainment of static objectives. Also essentially open-ended processes are: Schwab's (*op. cit.*) *deliberation*; Walker's (1986) *platform* model of curriculum development; Bosner and Grundy's (1988) process of *reflective deliberation*; and Hall's (1994) and Laird and Stevenson's (*op. cit.*) notion of *iterative* curriculum development (see Chapter Three for discussion of Hall's and of Laird and Stevenson's iterative curriculum).

Freire (1970), too, conceives learning and education as evolving and open-ended. He is critical of the closed conception of education in which teaching and learning are seen as banking or depositing knowledge in students. In this respect he states that education:

> ...becomes an act of depositing, in which the students are the depositories and the teacher is the depositor. Instead of communicating, the teacher issues communiques and makes deposits which the students patiently receive, memorise, and repeat. This is the "banking" concept of education, in which the scope of the action allowed to the students extends only as far as receiving, filing, and storing the deposits.
>
> (Freire, 1970: 58).

In effect, Freire criticises the traditional, technocratic conception of education in which the specific objectives to be attained are pre-determined by those in power; that is, the view in which education is conceived to focus upon the attainment of "closed" goals determined by the power-holders. Freire, himself, advocates an open-ended, empowering, educative process involving both teachers and students.

In place of curriculum planning which assumes that those with special knowledge ought to make decisions for those without that knowledge, Freire proposes an emancipatory approach in which students and teachers work together as "critical co-investigators" (Freire, *ibid.*: 58) to develop a "critical consciousness" (Freire, *ibid.*: 54) through critical reflection on one's own "concrete situation" (Freire, *ibid.*: 52). In this respect, he states that teacher and student:

...develop their power to perceive critically the way they exist in the world with which and in which they find themselves; they come to see the world not as a static reality, but as a reality in process, in transformation

(Freire, *ibid.*: 7)

Thus, in Freire's conception of education, students are not only empowered but they, too, come to see education as an open-ended process.

Codd (1993b) describes three different perspectives, or paradigms, in which different approaches to curriculum development are located. His descriptions can be interpreted to relate to the extent to which education is viewed as a closed system or as an open-ended process.

The first perspective, the technological approach, conceives education as a linear process which is designed to achieve pre-specified objectives. This is the paradigm in which the NZQA's approach is located. Education is conceived as closed system, rather than as an open-ended system. The second perspective, the deliberative approach, conceives that curriculum development produces a range of possible solutions requiring practical judgement based upon deliberation in the particular situation. Education is conceived to be more open-ended. The third perspective, the critical approach, conceives that the relationship between education and society is problematic. Issues relating to power, knowledge and ideology are examined and questioned. Rather than starting with a given set of objectives, curriculum is redefined "in terms of a pedagogical dialogue in which teachers and learners engage in a process of critical self-reflection" (Codd, 1993b: 11). It is the perspective taken by Freire. Education is conceived to be open-ended.

A closed model, such as the NZQA's, which calls on outside "experts" to determine the ends of education (see discussion relating to ITOs in Chapter Seven), encompasses the assumption that the ends of education will be known in

advance. But, as recognised in the above examples from educational literature, the ends are not always known.

Stevenson (1993), in his critique of the competency movement in Australia, criticises, amongst other matters, the Australian government's move to give the responsibility for the determination of the ends of vocational education to industry (a move that is paralleled in New Zealand). The move (in Australia), Stevenson argues, gives rise to the problem of *presentism*, which he asserts arises from two circumstances related to industry's view of education and training. Firstly, industry's concern is largely with current (present) industrial practices Secondly, giving industry responsibility for determining the ends of vocational education serves to reify it as the source of the curriculum. The consequence is that the concept of competence becomes locked into current (present) industrial practices. Consequently, important educational concerns are overlooked, such as the preparation of students for uncertain vocational futures and as future critics who will work towards the improvement of vocational practice. Effectively Stevenson argues for an open, rather than closed, model of curriculum development and learning. His argument is equally relevant to the parallel situation in New Zealand.

Another problem related to that of an open-ended versus a closed model and to the prior determination of standards is that of defining what constitutes excellence.

EXCELLENCE

The NZQA (1994) states that the structure of the Framework provides the "flexibility for students to expand their learning into new areas, and into more advanced levels" (p.5). In effect, the NZQA equates excellence with the horizontal and vertical extension of learning (see Barker, 1995).

Hall (1994, 1995a), referring to university education, argues that excellence is actually difficult to define in advance, but can often be recognised once it has occurred. Thus, in Hall's view, the outcomes model is fundamentally unsuited for university courses, insofar as university courses are concerned with excellence. Hall also argues that attention or emphasis given to the detailed pre-specification of outcomes may be detrimental to the attainment of excellence because students will not be challenged to think beyond the task requirements. Going beyond the stated requirements is consistent with the notion of excellence as he sees it.

Codd (1994a) adds support to Hall's argument when he argues that the assessment of standards of competence, as occurs through the Framework, sets "floors" rather than "ceilings"; that is, the assessment of standards is usually carried out according to minimum standards of attainment, rather than according to standards of excellence. He, too, argues that university courses aspire to excellence, not simply competence.

Hall's and Codd's open-ended notion of excellence would seem to be relevant in other educational institutions too, particularly other tertiary institutions. But the NZQA's outcomes/objectives model is a "closed" model insofar as it requires the pre-definition of excellence. Lecturers are expected to determine whether a student's performance measures up to the pre-determined standard of excellence. Lecturers thus make a technical judgement, rather than the professional judgement required for an "open" notion of excellence.

Questions concerning the end values of education is another area which is not recognised by the NZQA's outcomes/objectives model to require the professional judgement of teachers.

VALUES

Codd (1993b) makes the point that both the objectives model of curriculum development and the deliberative approach to curriculum development are "founded on an assumption that the social functions and purposes of education are relatively unproblematic" (*ibid.*: 11). It is an assumption, he further points out, that is implicit in an instrumental model which separates the ends from the means of education. Teachers, according to this model, as explained previously, organise the means to attain the ends which have been pre-determined by "experts" and/or power-holders from outside of education. Teachers have the technical role of choosing and applying the most effective means of achieving the pre-chosen ends, rather than the role of exercising professional judgement concerning the most appropriate ends. Teachers are thus excluded from questions concerning the value of education.

Eisner's (*op. cit.*) writing on normative and descriptive theory suggests that educators ought to be involved in questions of value. He describes normative theory as theory involving the articulation and justification of values. Descriptive theory, on the other hand, he describes as theory which is exemplified by the natural sciences, where answers are sought to questions of what has occurred and how it has occurred, and predictions are made about the future in relation to given conditions.

It may seem that normative decisions could be made satisfactorily from outside of education and, therefore, need not be the concern of teachers. As described above, teachers would simply make technical decisions about the best means. But, Eisner argues, normative commitments or images of educational value influence the importance attached to particular data and, consequently, particular curriculum decisions. Further, normative value judgements influence the methods of enquiry

adopted, the criteria chosen in order to test truth claims and beliefs concerning the nature of knowledge. Adopting an apt metaphor, Eisner states: "without such values, neither education nor curriculum has a rudder" (Eisner, *ibid.*: 43).

Descriptive theory, Eisner further argues, is pervaded by normative theory. Thus theories such as those concerning reinforcement, cognition, perception, learning, and problem solving are not simply the product of disinterested scientific research. What is seen to be important is influenced by values. There is, Eisner maintains, a dialectic relationship between normative and descriptive theory, with each influencing the other.

Similar insights to those provided by Eisner concerning influence of normative value judgements and the pervasion of descriptive theory by normative theory are revealed through Kuhn's (*op. cit.*) work on paradigms. He explains that a paradigm embodies the particular conceptual framework through which a community of researchers works, and through which their particular interpretation of reality is generated. It includes aspects such as models of research, standards, rules of enquiry and a set of techniques and methods.

Carr and Kemmis (1986) elaborate some of the implications of Kuhn's notion of paradigms. One is that, because paradigms structure observations in particular ways, observations are made in accordance with the concepts and theories impregnated in the paradigm. In other words, observations are dependent upon the theory in terms of which they are made. This brings into question the notion that knowledge can be, as positivism claims, the objective, universal and value-neutral product of the disinterested researcher. "Rather it is subjective, context bound, normative and, in an important sense, always political" (Carr and Kemmis, *ibid.*: 73).

Another related implication that Carr and Kemmis discuss concerns the way in which paradigms are informed by beliefs, values and assumptions, which are not made explicit in the theories produced by the research. Carr and Kemmis state:

> The facts to which the scientific educational theorist appeals are not some unmistakable and immediately recognised "given", but are dependent on the theories within which they operate. "Facts" are always facts as interpreted by prior assumptions and beliefs....
>
> (Carr and Kemmis, *ibid.*: 74).

Carr and Kemmis themselves operate within the critical paradigm.

Codd (1993b) points out that the key questions raised by the critical perspective in relation to curriculum development are, whose knowledge is it? and, who benefits? In other words, whose interests are being served? The critical perspective focuses upon questions of interest to do with the "inter-relationship between power, knowledge and ideology" (Codd, *ibid.*:12).

Posner (1988: 92) lists nine questions that scholars often ask when they approach curriculum from a critical perspective. They are:

1. What knowledge does the curriculum count as legitimate, and what does it not count?
2. To what extent does the curriculum organisation presuppose and serve to "legitimate a rigid hierarchy between teacher and taught?"
3. How does the curriculum enable the school to achieve its primary purpose of social reproduction and hegemony?
4. Who has greatest access to high-status and high-prestige knowledge?
5. Who defines what counts as legitimate knowledge?
6. Whose interest does this definition serve?
7. How do the dominant forms of evaluation serve to legitimise curriculum knowledge?
8. To what extent is the schools' sorting function more significant than its educative function?
9. What are the features of the schools' hidden or implicit curriculum, and to what extent does this aspect of schooling mediate teaching the official curriculum?

A critical approach, then, encourages the examination of assumptions, values and beliefs. In contrast these issues remain hidden in the NZQA's outcomes model.

The pre-specified objectives are accepted as givens. But they are decided upon on the basis of assumptions, values and beliefs - that is, the interests, of the power-holders outside of education.

Of course, in keeping with the earlier discussion of paradigms, there is no value-free basis for any claim that one approach is better than the other. There is no right nor wrong way. But it is possible to examine the values of an approach and decide which approach the present community believes ought to be followed.

SUMMARY AND CONCLUSIONS

Discussion has suggested that the NZQA's outcomes model is unsatisfactory for, at least, the eight following reasons:

1. The NZQA's model does not take account of intuitive knowledge - a form of knowledge which people possess and use but cannot describe in rational terms;

2. The NZQA's model does not take account of the holistic, integrated character of knowledge and the existence of combined holistic properties over and above those of the separate components. Rather, it emphasises separate components and implies that these combine to form a whole which is simply the sum of the component parts.

3. The NZQA's model conceives *unit standards* as discrete entities which exist apart from their contexts and thus can be transferred from one situation to another. But researchers argue that knowledge is related to its context.

4. The NZQA's model encourages the conception of teaching, learning, knowledge and qualifications as commodities in the marketplace, whereas learning researchers who base their research in the phenomenological paradigm

conceive teaching, learning and knowledge as human, cultural qualities. In this latter conception, learners' characteristics, qualities and actions during the learning processes are seen to influence the quality of the learning process and what is learned or not learned.

5. The NZQA's model does not encourage the conception of a distinction between deep learning involving the development of understanding and surface learning involving memorising and reproducing information. Research, however, indicates the importance of this distinction. Deep learning has been found to facilitate transfer of learning to new situations. Also it has been found to be more effective and more likely to be enjoyed by students than surface learning.

6. Because it requires the prespecification of the outcomes of teaching and learning, the NZQA's model was argued to be a closed model. But a closed model was argued to be problematic because the ends of learning are not always known in advance, nor does a closed model allow learning to conceived as an empowering, continuing processes.

7. In the NZQA's model, excellence is prespecified rather than being conceived as something beyond expectations. This conception was argued to set "floors" rather than "ceilings". In contrast, judging excellence after the event was suggested to be preferable because students are more likely to be encouraged to go beyond what might have been expected and what they might have done had an explicit standard *not* been defined beforehand.

8. The NZQA's model implies that the purposes of education are relatively unproblematic and that they can be determined satisfactorily by experts or power-holders from outside of education. Accordingly, teachers are given a

technical role which involves choosing and applying the most effective means of achieving the pre-chosen ends. There is *no* need, according to this view, for teachers to be involved in matters relating to the value of education. Nor is knowledge itself conceived to involve values. The NZQA's outcomes model embraces the positivist conception that knowledge can be objective, universal and value-neutral.

In contrast, it was argued that teachers' normative commitments or images of educational value operate as a paradigm which frames and thereby influences what they select for attention and thus what they do. In other words, what is seen to be important and how teachers act are influenced by values. It was further argued that rather than remaining hidden, as they do in the outcomes model, values ought to be made explicit and debated. A critical approach was proposed as the way of doing this.

It is inferred from writers' views discussed in the chapter that the NZQA's conceptualisation of teaching and learning includes the conceptions: that teaching and learning are the instrumental means of achieving ends determined by society's power-holders; that teaching and learning involve a linear progression in which the means are separated from ends; that skills and knowledge are capable of precise description, pre-specification and measurement; that skills and knowledge comprise a collection of discrete components, or products that can be purchased in the market-place; that learning proceeds through the cumulative addition of discrete, depersonalised components to the learners' knowledge; and that knowledge has a universal character.

The next chapter develops the notion of a relationship between context and knowledge.

CHAPTER FIVE

THE RELATIONSHIP BETWEEN SOCIAL CONTEXT AND KNOWLEDGE

INTRODUCTION

Section One introduces the notion that the form of a curriculum and the associated practices influence what is counted as knowledge. At the same time it argues that a technocratic curriculum excludes important sorts of knowledge. Section Two introduces a theory explaining how knowledge is socially constructed, rather than something which exists universally. Section Three links aspects of the social context with the way that curricula are constructed and also suggests implications of particular constructions.

A summary and conclusions, which include inferences about the governments and the NZQA's conceptualisation of teaching and learning, closes the chapter.

SECTION ONE: THE INFLUENCE OF A TECHNOCRATIC CURRICULUM ON WHAT COUNTS AS KNOWLEDGE

This section reviews four criticisms of a technocratic curriculum and associated practices that illuminate how such a curriculum shapes what is recognised and counted as knowledge. The criticisms concern a technocratic curriculum's bureaucratic requirements; its structural requirements; its use of standards-based assessment; and its approach to "problem-solving".

Bureaucratic requirements

Aronowitz and Giroux (1985) refer to the ways in which bureaucratic (that is, technocratic) requirements influence or shape what is counted as knowledge. These ways include the demands that:

- knowledge be divided into relatively discrete components;
- units be ordered in sequence;
- knowledge be communicable using conventional media;
- success in the acquisition of knowledge be recordable in a quantifiable form;
- knowledge be objectified in a form that allows it to appear to exist independent of its human origins;
- knowledge be stratified in levels;
- knowledge based upon concrete experience be given low status;
- knowledge expressed in abstract and generalised principles be given high status.

The implication is that to be recognised and included in a technocratic curriculum, knowledge must be ordered and presented in a manner that meets the above bureaucratic requirements. Knowledge which does not comply is disregarded; that is, it is not counted.

With the exception of the last two points, the above requirements are evident in documents relating to the New Zealand National Qualifications Framework, as it was being implemented at the time the case studies were carried out in the present study (see, for example, NZQA, 1991a; 1991b).

In regard to the last two points, the explicit intention of the founders of the National Qualifications Framework was to remove what was argued to be an artificial distinction between general and vocational training (NZQA, 1991a; 1991b) or academic education and vocational training (Hood, 1992) and the connotation of first class and second class education (Barker, 1995). Thus it was asserted that there

ought to be no distinction between different sorts of education - such as academic and vocational or knowledge-based and skills-based, or concrete / practical and abstract - and that all subjects could be treated in the same way within a curriculum framework. In the light of this argument, it may appear that the last two of the above points do not apply to New Zealand National Qualifications Framework. However, a linear progression from lower to higher levels (levels 1 to 8), which also implies status, was planned (NZQA, 1991a; 1991b) and has become part of the Framework (NZQA, 1997). It is thus suggested that, insofar as high levels of knowledge tend to involve abstract concepts and low levels, more "concrete" knowledge or practical skills, the implementation of levels actually may reinforce the previous situation whereby high status was given to knowledge comprising abstract and generalised principles and low status was given to knowledge based upon concrete experience.

The above discussion leads to the next point which concerns the NZQA's assertion that all knowledge can be structured in the same way and satisfactorily encompassed within the same curriculum framework.

Structural requirements

Elley (1996a), in his critique of the *New Zealand Curriculum Framework,* which was introduced to schools in 1993, argues that the structural (technocratic) requirements of the Curriculum Framework disregard the inherent nature of knowledge. His concern is that knowledge is being shaped in order to fit in with the requirements of the curriculum. The essence of Elley's argument is:

Firstly, knowledge across different curriculum areas is actually structured in different ways. The link between contents, aims and outcomes is different in different subjects. Thus, treating all knowledge in the same manner so that it 'fits' the demands of the Curriculum Framework is unsatisfactory.

Secondly, the division of each curriculum area into eight evenly spaced, hierarchical levels of attainment represents an arbitrary imposition on knowledge and skills. It is imposed by the requirements of the Curriculum Framework regardless of the 'fit'.

Thirdly a sequential, linear progression is "alien to most knowledge-based subjects" (Elley, *ibid.*:13), but may be appropriate in some areas of learning, such as typing, physical education and some aspects of mathematics. In a knowledge-based subject, learning and knowledge growth are individual and idiosyncratic. The subject itself is multi-dimensional and students' knowledge "...consists of an infinity of particulars, not of logically organised packages..." (Elley, *ibid.*:12).

Using the subject of history as an example, Elley elaborates on the idiosyncratic nature of learning in knowledge-based subjects. He describes how students' learning advances, not through a linear progression, but through increases in the breadth and depth of knowledge and processes and skills, in different history topics. Further, Elley suggests that, for multi-dimensional subjects, interest-driven instruction may be more effective than outcome-driven instruction. Thus, teachers who attempt to bring their students' knowledge into line with the prescribed sequence of externally specified outcomes may feel pressured to bypass the "teachable moment".

Although Elley's criticism is of the *New Zealand Curriculum Framework* for schools, it is argued here that his criticism also applies to the National Qualifications Framework. As with the Curriculum Framework for schools, the National Qualifications Framework disregards the inherent nature of knowledge in order to meet structural requirements. Knowledge and skills are packaged into discrete units, all constructed in essentially the same manner, in order to meet the requirements for the Framework.

Colleen de Vore's (1993) description of nursing knowledge as multi-dimensional is consistent with Elley's conception of the nature of knowledge based subjects and the way learning progresses in such subjects. Logically ordered, discrete packages may not be an appropriate way to organise, teach and learn multi-dimensional nursing knowledge.

The nature of knowledge also has implications for how assessment may be carried out satisfactorily. Or conversely, the form of assessment influences what is counted as knowledge.

Standards-based assessment

As noted previously, standards-based assessment is the form of assessment advocated by the NZQA. It is a form of assessment which is suited to the requirements of the Qualification Framework (Croft, *op. cit.*; Sass and Wagner, *op. cit.*). But the requirements of standards-based assessment, together with the requirements of the Framework, which are essentially technocratic requirements, are argued to shape or influence what counts as knowledge.

Elley (1996a), for example, argues that the emphasis which standards-based assessment places upon measurable results is likely to appeal to those (eg., technocratic managers) who require tangible evidence for accountability purposes. Consequently, teachers wishing to be accountable, most likely, will want to ensure that their students measure up well to the specified standards. Also, the students themselves are likely to want to meet the pre-specified, measurable course requirements (see reference to Becker's research in Chapter Four). Thus, the measurable knowledge and skills captured by standards-based assessment are likely to be seen as the most worthwhile knowledge. The danger, Elley (1996a, 1996b) warns, is that teachers and students may concentrate upon short-term, readily measured, but

comparatively trivial learning goals, rather than more important long-term, difficult to measure goals.

Similarly, research by Darling-Hammond (1994) also indicates that an emphasis on outcome-driven teaching, consistently leads to *less* emphasis on higher-level objectives, and more coaching on narrow testable aspects simply to pass the course.

Further, Codd et al. (1995) cite Broadfoot (1991) who warns of the dangers of narrowing the curriculum as the result of an over-emphasis on specific learning outcomes. She, in turn, refers to Romberg and Zarinnia (1989, cited in Codd et al, *ibid.*) who claim that the current criterion-referenced tests do not measure areas such as the interpretation of knowledge, critical thinking, cultural knowledge and disciplined enquiry. Romberg and Zarinnia suggest that, if teachers ignore attainments in these areas of knowledge, they may lose sight of them altogether and the areas may, in effect, disappear altogether.

A number of other writers also comment upon the harmful effects narrow testing upon knowledge and education (for example, Black, 1994; Elley, 1995, 1996b; Lofty, 1993; Torrance 1993).

Thus standards-based assessment, which is associated with a technological curriculum, is argued to exert not simply an influence, but a detrimental influence, upon what is counted as knowledge.

The approach to problem-solving encouraged by a technocratic curriculum is also argued to be detrimental to what is counted as knowledge, or, in this instance, the construction of problem-solving knowledge.

Technocratic approach to problem-solving

Schon (1983, 1987) makes a link between the unsatisfactory construction of problem-solving knowledge by the traditional, technocratic curriculum and what he describes as a widespread crisis of legitimacy and confidence in the public's perception of the ability and integrity of professional people. He observes the prevalence of instances where, for example, professionals fail to recognise and respond to values conflicts; violate ethical standards; fall short of their own standards for expert performance; and are blind to public problems which they helped to create in the first place. Professionals, he believes, are failing to resolve the everyday problems that they face. The traditional curriculum, he concludes, has failed to teach professionals the knowledge that they actually require.

Schon explains that the traditional curriculum, in accordance with the cannons of technical rationality derived from positivist philosophy, "holds that practitioners are instrumental problem solvers who select technical means best suited to a particular purpose" (Schon, 1987: 3). The idealised positivist notion is one of rigorous practitioners solving instrumental problems by applying theory and practice derived from systematic, preferably scientific, knowledge.

However, as pointed out previously in Chapter Four, Schon observes, that many everyday problems faced by practitioners do not comply with the traditional construction of problem-solving knowledge. Problems often cannot be related clearly to particular situations. Rather, they tend to present themselves as "messy, indeterminate situations" (Schon, *ibid.:* 4), if at all. It is these indeterminate zones, Schon argues, that are actually central to professional practice.

Schon's answer is, in effect, to turn the traditional curriculum on its head. He rejects the traditional technocratic curriculum which puts basic science in first place, applied sciences in second place, and only finally - in order that students learn to apply

research-based knowledge to the problems of daily practice - includes practica. In its place he advocates a curriculum based upon the careful examination of artistry; that is, the competence seen in the way practitioners handle indeterminate situations. Schon maintains that:

> "inherent in the practice of the professionals that we recognise as unusually competent is a core of artistry. ... [It] is an exercise of intelligence, a kind of knowing, though different in crucial respects from our standard model of professional knowledge"
>
> (Schon, *ibid.*:13)

Bolman and Deal (1991) in their text on organisational theory, *Reframing Organisations*, also stress the importance of artistry. They point to the tendency in Western cultures to embrace one theory or ideology and to try to make the world conform to it. Instead they describe four different frames through which organisations can be viewed, each based upon quite different principles. They believe that by viewing problems through different frames or lenses greater insight is obtained into the problems that organisations encounter. Artistry used to reframe situations has the potential provide new insights. In this respect Bolman and Deal state:

> Artistry is neither exact or precise. The artist interprets experience and expresses it in a form that can be felt, understood, and appreciated by others. Art allows for emotion, subtlety, ambiguity. An artist reframes the world to help us see new possibilities. Modern organisations rely too much on engineering and too little on art in their effort to foster such attributes as quality, commitment, and creativity.
>
> (Bolman and Deal, 1991: 19)

The problem is that the NZQA's curriculum model does not encompass artistry and other forms of knowledge that are difficult to define and/or are not measurable. Rather, it constructs knowledge in specifiable, measurable forms. It can be seen, too, that artistry does not fit within the above bureaucratic requirements identified by Aronowitz and Giroux.

Discussion now turns to some more theoretical interpretations of the relationship between the broader societal context and the construction of knowledge.

SECTION TWO: THE SOCIAL CONSTRUCTION OF KNOWLEDGE

In this section it is argued that not only is social knowledge a social construction, but also natural knowledge is a social construction insofar as it is socially selected. Habermas's (1972) theory of *knowledge constitutive interests* is then introduced. It explains how knowledge is constructed in different ways, each in accordance with a scientific interest.

Social knowledge: A social construction

In the 1960s and early 1970s, the work of writers, such as Schutz (1967), Berger and Luckman (1967) and Young (1971), led to an approach to the sociology of education in which social knowledge was conceived as a social construction. Similarly, in the mid 1970s, Greenfield (*op. cit.*), whose writing was referred to previously in Chapter One, "sparked major theoretical debate within the literature on educational administration" (Codd, 1993a: 11). These writers, as described in Chapter One, rejected the previous positivistic, functionalist approach which held that social knowledge was determined by universal laws which existed independent of society. Instead, they adopted an interpretivist perspective which held that society's *intrinsic meaning structure* is derived through the routine interpretive activities of its members (Carr and Kemmis, 1986). In other words, the path to understanding society or gaining knowledge of society was seen to be through an understanding of social interactions, located in time and space.

The social selection of knowledge

Not only do writers argue that social knowledge is socially constructed, but they go further. They argue that all knowledge is socially selected and, in this sense, socially constructed; that is, the selection of knowledge is socially constructed. Fay (1987), for example, argues that metatheories of science are not ontologically neutral. But "on the contrary, they all contain certain views about the fundamental nature of the

scientific theory" (p. 43). He maintains that epistemology cannot be divorced from ontology. His point is similar to that made by Kuhn (*op. cit.*) through his notion of scientific paradigms and their influence upon scientific perspectives (see previous discussion relating to Kuhn, in Chapter Four).

Grundy (*op. cit.*) distinguishes between knowledge about the social or cultural world and knowledge about the natural world. She argues that knowledge about the social world is constructed by human beings and therefore is always contestable, whereas knowledge about the natural world may not be contestable in the same way. Nevertheless, those aspects of knowledge about the natural world which humans select for attention are, she also argues, representations and interpretations. Grundy makes the further point that such selections do not necessarily represent whole truths. This means that the *selection* is contestable. In this sense, then, the selection of natural knowledge is a social process. Thus Grundy, Fay and Kuhn concur that, in regard to its selection, natural knowledge is a social construction.

Habermas's (*op. cit.*) theory of *knowledge constitutive interests* explains how knowledge is socially constructed according to three different scientific interests - a technical, practical or emancipatory interest.

By "interest" Habermas means a basic orientation of human beings towards the preservation of life which, in turn, is grounded in life organised through knowledge or rationality (and action). He theorises that the way in which the orientation is worked out in the life structures of human beings determines what is counted as knowledge. Grundy (*op. cit.*) summarises Habermas's position thus:

> .. rationality can be applied in a number of different ways to ensure self-preservation. The manner in which rationality manifests itself will determine what a social group is prepared to distinguish as knowledge
>
> (Grundy, 1987:9)

Brief details of Habermas three *knowledge constitutive interests* are as follows:

1. The *technical cognitive interest* is evident in empirical-analytic sciences where the basic orientation is towards controlling and managing the environment. Within this interest, theories are constructed on the basis of "hypothetico-deductive connections of propositions, which permit the deduction of lawlike hypotheses with empirical content" (Habermas. 1972: 308). Hypotheses give structure to observations and have predictive power which, in turn, affords the power of control.

2. The *practical Interest* is evident in the historical hermeneutic sciences where the basic orientation is towards understanding the environment. The question motivated by a practical interest is "What ought I to do?" rather than "What can I do?". It is a question that brings moral considerations into focus, unlike the technical interest where they remain hidden, and, as Grundy (*op. cit.*) points out, "often disguised in talk about 'objectivity' and 'natural law'" (p. 13).

   Knowledge which is concerned with understanding is judged on the basis of whether the interpreted meaning assists the process of making judgments about how to act rationally and morally. Confidence in the interpretation depends upon agreement with others. Thus, although the knowledge is based upon subjective interpretation, it is not merely an arbitrary interpretation.

3. The *emancipatory cognitive interest* is evident in the critically oriented sciences where the interest is in emancipating or empowering individuals (and groups) to take control of their own lives in autonomous and responsible ways.

   Ultimately emancipation is an individual experience, achieved by individuals through their own self-reflection, but it must also involve consideration of others. This is because people must interact with one another in order to live in a society. Therefore

individual freedom is inextricably linked with the freedom of others, which, in turn, inextricably links emancipation with the moral values of truth and justice.

Habermas argues in favour of the emancipatory interest in preference to the technical or practical interests. He believes the emancipatory interest is a more fundamental interest. It is motivated by reason rather than inclination.

The technical interest, Habermas argues, does not lead to emancipation, autonomy and responsibility, because it is an interest in control. It may lead to a form of independence for some, but, to Habermas, this is false autonomy because it involves regarding fellow human beings (and/or the environment) as objects. It is an interest based upon inclination rather than reason.

A practical interest, Habermas argues, is also insufficient for the attainment of autonomy. People motivated by this interest may regard the universe as a subject rather than object. Also they may appear to have the potential for freedom through the emphasis on understanding and consensual meaning. But, Habermas argues, people have a propensity for "false consciousness"; that is, to be deceived.

Thus neither the fundamental orientation towards technical nor practical reasoning ensure that the more fundamental interest in autonomy and responsibility is served. An emancipatory interest is required to free people from the coercion of the technical interest and the possible deceit of the practical interest.

Clearly, Habermas's theory of knowledge constitutive interests has implications for education. The next section describes one approach to identifying and elaborating these.

SECTION THREE: CURRICULUM AS A SOCIAL CONSTRUCTION

This section links the social context, in terms of people's beliefs about human beings, with the way that curricula are constructed and also suggests implications of particular constructions. To do so, it focuses mainly on Grundy's (1987) analysis. She carries out her analysis through a framework based upon Habermas's knowledge constitutive interests.

The fundamental question that Grundy (1987) seeks to answer in her text, *Curriculum: Product or Praxis?*, is: What sort of beliefs about human beings and the world lead to what sort of educational practices, especially as they are encompassed in curricula? To answer this question she adopts Habermas's theory of knowledge constitutive interests as a "framework for making meaning of curriculum practices" (Grundy, *ibid.*, p.7).

Grundy finds that a *technical cognitive interest*: informs the objectives curriculum model (which, as argued in Chapter Three, is essentially the curriculum model advocated by the NZQA, at least in its early days); conceives teaching and learning as the attainment of pre-specified ends; emphasises control over students by scientifically "discovering" the "rules" of human interaction; regards students as objects rather than as human beings; and conceives evaluation as a matter of matching the pre-specified ends with the actual outcomes.

Weaknesses that Grundy sees in a technical cognitive interest include the belief that rules for controlling human interactions can be "discovered" by science; and the way in which the production curriculum model conceives teaching to involve "action on" an "object" (student), in order to attain an outcome or product.

Grundy finds that a *practical cognitive interest*: gives rise to interaction *between subjects*, not action *on objects;* encourages the conception of teaching and learning as processes, rather than the attainment of an end or product; grounds educational processes in human reason, which gives rise to practical action seeking an improvement in a subject or situation; encourages the conception that evaluation is an integral part of the whole educative process; and involves making on-going judgments about the extent to which the learning experiences further the good of all the participants.

As Grundy points out, Stenhouse (*op. cit.*) advocates a curriculum based upon a practical interest. It is a curriculum which relies on teacher judgment, rather than teacher direction and it involves "a process model" of teaching and learning. Schwab (1969, 1989) is another noted advocate of a practical interest. Also, essentially, Dewey's conception of teaching and learning as a continuing process (Kelly, 1986) reflects a practical interest. So too do the curriculum models proposed by Stevenson and Laird (*op. cit.*) and by Hall (1994, 1995a), (Chapter Three included brief discussion of aspects of Dewey's, Stevenson and Laird's, and Hall's writing).

Habermas identifies a major weakness of the practical interest to lie in people's propensity for misunderstanding their true situation. Grundy agrees. If we accept that people do misunderstand their true situation, determining the good is problematic, even when democratic processes are followed.

Grundy finds that an emancipatory interest conceives teaching and learning as a continuing process of action and reflection, with teachers and students working together to critique their situation and construct their own knowledge. In this process, emancipation is achieved through the attainment of true knowledge of one's situation. This requires communication through speech, which implies conditions of justice and equity in order that the speech be free. Thus meaning-making,

interpretation and critical reflection are central to the emancipatory curriculum. And critical reflection requires not only the ability to distinguish between knowledge about the "social" or "cultural" world, but the critique of all knowledge.

Grundy advocates a curriculum developed through praxis, "the dynamic interaction of action and reflection" (*ibid.*: 115), which, she explains, means that:

> ...the curriculum is not simply a set of plans to be implemented, but rather is constituted through an active process in which planning, acting and evaluating are all reciprocally related and integrated into the process.
>
> (Grundy, 1987: 115)

Thus in Grundy's view, an emancipatory curriculum is not simply a set of plans to be implemented as would be expected where a technical cognitive interest prevails. Learning is recognised as a social act and knowledge as a social construction. Students play an active part in constructing their own knowledge. Meaning-making, interpretation and critical reflection are central to the process of constructing knowledge.

Grundy believes that Freire's (1972a; 1972b) notion of *liberation* has similarities with Habermas's emancipatory interest. *Praxis* is a central concept in Freire's notion of *liberation*. Its constitutive elements are action and reflection, which occur in a dialectical relationship, with each building upon (or mutually constituting) the other.

Freire conceives that interaction in the form of praxis operates in speech which pursues the truth. The truth or new knowledge or transformation achieved enables the further pursuit of truth. Put another way, speech in the form of truth provides the praxis; that is, the reflexive interaction of action, reflection and new action. In this respect Freire states:

> ... there is no true word that is not at the same time a praxis. Thus to speak a true word is to transform the world ... Human existence cannot be silent, nor can it be nourished by false words, but only true words, with which men transform the world.
> (Freire, 1972b: 60-61)

Thus, like Habermas, Freire links speech with freedom and believes that dialogue is a fundamental human phenomenon.

Cornbleth (1990) also conceives curriculum to be socially constructed and, in doing so, stresses the importance of context. She states "...curriculum emerges from the dynamic interaction of action, reflection, and setting, not simply action and reflection alone" (*op cit.*: 7). Thus, of particular interest, she reasons that discourse matters because:

> ...how we see, think and talk about, study, and act on curriculum matters both reflects and shapes the education made available to students
> (Cornbleth, *ibid.*: 8).

Curriculum, Cornbleth emphasises, must be contextualised. The point that discourse matters, because it both reflects and shapes education (and knowledge), is taken up again in the next chapter.

SUMMARY AND CONCLUSIONS

Section One showed how requirements concerning the form in which knowledge is presented can influence what is counted as knowledge. It also argued that the NZQA's technocratic approach is resulting in the exclusion of important knowledge simply because it does not "fit in" with the requirements of the National Curriculum and the New Zealand Qualifications Framework. Evidence cited suggests that short-term, measurable results are being emphasised rather than long-term, more difficult to measure outcomes such as the interpretation of knowledge, critical thinking, cultural knowledge and disciplined enquiry. Further, Schon argues that professional problem solving requires artistry not simply a positivistic, technocratic approach. And Bolman and Deal advocate the use of artistry in the choice of frames to view and find new solutions to problems in organisations. A conclusion which emerges is that a technocratic approach omits important knowledge that exists in difficult to describe,

difficult to measure, less tangible forms and may, in the long-term, lead to the disappearance altogether of these forms of knowledge.

Section Two argued that not only is social knowledge a social construction, but also the selection of natural knowledge is socially determined. Habermas's theory of knowledge constitutive interests was described to provide a theoretical explanation of the relationship between the predominant scientific interests of social groups and the sorts of knowledge that they construct and/or select for attention.

Section Three described Grundy's analysis linking particular beliefs about human beings and the world with particular educational practices and forms of curricula. The frame for her analysis was based upon Habermas *knowledge constitutive interests*. Firstly, she found that a *technical cognitive interest* informs the objectives curriculum model, which emphasises the attainment of pre-specified ends, control over students; and evaluation as the matching of pre-specified ends with actual outcomes. Secondly Grundy found that a *practical cognitive interest* gives rise to interaction *between subjects*; encourages the conception of teaching and learning as processes; seeks improvement in a subject or situation; conceives evaluation as an on-going process; but does not take account of people's propensity to misunderstand their "true" situations. Thirdly, Grundy found that an *emancipatory interest* conceives teaching and learning as a continuing process of action and reflection, in which teachers and students work together to critique their situation and construct their own knowledge. Thus emancipation is achieved through the attainment of "true" knowledge of one's situation.

Both Habermas and Grundy favour the emancipatory, cognitive interest. Similarly Freire favours liberation. The critical, empowering conception of teaching and learning which Grundy identifies where the emancipatory interest is predominant supports arguments, such as those presented in the next chapter, for education to be

based in human concerns and communication, rather than economic concerns such as market-forces.

The discussion in the chapter implies that the NZQA conceptualises learning as an end or product and teaching as the technical means whereby the end is attained. The means are thus conceived to be separated from the ends. Teaching and learning are conceived to involve a linear progression towards the ends which can be described precisely, pre-specified and measured. All knowledge is conceived to be structured in the same way and to have a universal existence. Evaluation is conceived to be achieved through the measurement of actual outcomes against the pre-specified outcomes.

CHAPTER SIX

THE EMERGENCE OF AN ECONOMICS PARADIGM

INTRODUCTION

The previous chapter developed the notion that knowledge is a social construction rather than something which exists universally. This chapter begins by showing, in Section One, how within society's social context, the beliefs and ideologies of the power-holders enter, unnoticed, into the language, discourses, ideologies and ways of thinking of the populace and, in so doing, come to influence what is counted as knowledge. Section Two shows how the direction of the influence of society's power-holders in recent years has moved towards the recognition and development of forms of knowledge which further economic goals. Section Three argues that an economics paradigm is essentially incompatible with, and thus unsatisfactory for, educational purposes. Section Four suggests why some educators have come to accept the economics paradigm. It concludes by proposing a critical approach as a means for enabling educators to recognise and challenge the imposition of an economics paradigm upon education.

SECTION ONE: DISCOURSE, POWER AND KNOWLEDGE

This section begins by describing the development of a materialistic theory of language and discourse, which is argued to be, essentially, a poststructural theory. It then elaborates the relationship between discourse, power and knowledge.

Language and discourse - a materialist theory

In writing originally published in French in 1916, Saussure (1924) argues that language is not simply a static set of signs through which individuals name pre-

existing ideas and transmit messages to each other about the external world of things. Rather he conceives language as a set of social practices, produced by social forces, through which people construct a meaningful world of people and things. In his view, language comprises both an arbitrary system of signs (which he names *parole:* the actual utterances made by speakers in concrete situations) and a domain of socially constituted practices (which he names *langue:* the normative rules or conventions of language).

Codd (1990: 137) takes up Saussure's view of language when he argues that it, "prepared the way for a materialist theory of language in which the term *discourse* has come to be used to embody both the formal system of signs *and* the social practices which govern their use." Codd elaborates that discourse refers to both the meaning of language and to the real effects of language-use; that is, to the materiality of language. He further elaborates that as a domain of language-use, discourse is a domain of lived experience. People participate in a range of different discourses, such as, for example, political, scientific, and religious discourses. Each discourse includes certain shared assumptions and can involve ideology in the form of unconscious, taken-for-granted 'systems of representation' that are *inscribed in* the discourse rather than *symbolised by* it. On this point, Codd cites Belsey who states that ideology is not some form of free-floating ideas and subsequently embodied in words, "but a way of thinking, speaking, experiencing" (Belsey, 1980: 5, cited in Codd, *ibid.*:138). Ideological discourse is not, therefore, a set of doctrines or a system of beliefs that individuals consciously choose to accept or reject.

Because people participate in a range of discourses, there are many ways in which they can experience and understand their lives. And in all these many ways, as Codd (*ibid.*: 138) points out, "discourse itself is constitutive of subjective experience and also a material force within the construction of subjectivity." In

other words, people form their understanding of themselves and the world through the view provided by the socially constructed practices of the various discourses in which they consciously participate and which, at the same time, without their conscious awareness, shape them. What Codd describes is, in effect, what Weedon describes in her poststructural conception of the formation of human subjectivity. Both describe how human subjectivity is formed at the intersection of competing discourses, how individuals can exert some agency but are embedded, so to speak, in the discourses in which their subjectivities are formed. These competing discourses represent interests which are constantly vying for status and power - and in that sense are political.

The exercise of power

Given that the ideological elements of discourse can influence people's way of thinking, speaking and experiencing without their conscious awareness, the possibility exists for those who have some control over the ideological elements of discourses to exert, intentionally or unintentionally, covert forms of power over those for whom the discourses are lived experiences.

A materialist theory of language, Codd (1990) suggests, provides us with an understanding of how discourse can mediate the exercise of power; that is, discursive power. He quotes Bourdieu who explains that language goes beyond the meaning of what is said to the act of saying it:

> Language is not only an instrument of communication or even of knowledge, but also an instrument of power. One seeks not only to be understood but also to be believed, obeyed, respected, distinguished.
>
> (Bourdieu, 1977: 648; cited in Codd, *ibid.*: 138)

Bourdieu's statement adds to the argument that language not only communicates through shared, conscious understanding, but also is a material force in the mediation of power. And the exercise of this power serves to shape people in ways determined by the power-holders. It is not, however, a power exercised in

the form of coercion or restraint, the forms that people might be expected to recognise, but it is power exercised through consent, a form that *can be* exercised over people without their conscious awareness.

Gramsci's notion of *ideological hegemony* (Boggs, 1976; Codd, *ibid.;* Fay, 1987) explains how power can be exercised over people without their conscious awareness. Those in power in society (usually through their economic or political privilege) have access to the various institutions through which values, beliefs and ideas are disseminated. Such institutions include schools, the law, the mass media and religion. Consequently, the ideology of the power-holders comes to permeate the ideology expressed in popular beliefs, folklore, myths, and the common sense ideas of the people. But it is ideology that actually serves the interests of the power-holders and, in so doing, oppresses some groups. However, acceptance is so pervasive that this, the power-holders' ideology, becomes part of the unquestioned consciousness of the oppressed groups. They support it and the practices based in it. The outcome is the domination of people by values, practices and structures which are inscribed in the prevalent ideologies that they unconsciously accept in their common sense interpretations of their lived experience.

Fay (1987) defines the exercise of power in terms of a person acting and thereby causing somebody else to act in a particular way. He distinguishes four different ways in which power is exercised: force, coercion, manipulation and leadership. Of particular significance to the present discussion, he argues that, in all of these instances the exercise of power is fundamentally dyadic. He conceives that power arises out of the interaction of the powerful and the powerless, with both sides contributing something necessary for its existence. He explains that:

Leadership involves leaders who are able to get followers to act in a particular way (even if acting in that way is not actually in the followers' interests) because the followers agree to do so. They agree because they understand their own situation to be one in which leaders have the right by virtue of their position to command a course of action, or the leaders possess the requisite personal characteristics of leaders, or the leaders seek action which is correct and justifiable.

Manipulation works directly on the self-understandings of the oppressed without them (and perhaps the oppressors) being aware of how the manipulation is occurring, or even that it is occurring. In short, the oppressed often derive self-understanding through socialisation into a society in which the social system disregards their interests. In this situation the oppressed, as well as the oppressors, consent to a particular set of arrangements, including the right of some to benefit more than others and to make decisions that affect everyone. In this way, then, the oppressed develop a false consciousness of themselves. In other words, the beliefs, attitudes and values that the oppressed come to hold support the cultural values and norms of the very structures that actually oppress them. In this sense the oppressed are manipulated by means of their own self-understandings (*cf.* Gramsci's notion of ideological hegemony above).

Coercion occurs when someone or some group threatens or causes deprivation to some other person or group. What is perceived as deprivation, and the relative degree of abhorrence of a particular deprivation, is determined in part by the self-understandings of those to be deprived. But these self-understandings are subject to change. With different self-understandings people can be emboldened and thus become willing to endure harsh conditions for a cause. Fay (*ibid.*) makes the point that "coercive power relations ultimately are grounded in, and draw on, the self-understandings of those coerced." (Fay, 1987, 126). There is, in other words, a relationship between the power to coerce people and their self-understandings.

The relationship between power and knowledge

In developing the notion of dyadic power, Fay, in effect, invokes Gramsci's notion of ideological hegemony to explain how the self-understandings of followers and the oppressed are shaped in accordance with the interests of the power-holders. What Fay's work also suggests is that these understandings of the followers constitute *knowledge,* which the followers and the oppressed learn in relation to their own situations. It is knowledge shaped by, and to the advantage of, those in power. It *is* the knowledge of those in power. Thus, the notion of a relationship between knowledge and power.

Foucault (1970, 1979a, 1979b, 1980) is quite explicit about the notion of a relationship between power and knowledge. He argues that all knowledge is the product of power relations. He also argues that power is exercised through discourses. Both the relationship between knowledge and power and the role of discourses are evident in his statement that:

> ...in any society, there are manifold relations of power which permeate, characterise and constitute the social body, and these relations of power cannot themselves be established, consolidated nor implemented without the production, accumulation, circulation and functioning of discourse. There can be no possible exercise of power without a certain economy of discourses of truth which operates through and on the basis of this association. We are subjected to the production of truth through power and we cannot exercise power except through the production of truth
>
> (Foucault, 1980: 93)

By means of an "historical" analysis of society, Foucault identifies discourses and power related to various pivotal institutions such as medicine, psychoanalysis, criminology, sexuality, mental health and education. It is, he believes, through such discourses that individuals overtly learn the perceived knowledge or truth relevant to each institution. At the same time, in a more covert, subtle way (consistent with the notion of ideological hegemony), the discourses control them or exert power over them. As Peters and Marshall (1996b) put it, in their discussion of Foucault:

> The subject is the basis upon which discourses are founded and, at the same time, the mode of objectification which transforms human beings into subjects. Such discourse serves all attempts at understanding, defining and conceptualising what it is to be human. In other words, 'subject' carries twin meanings of an active knowing subject and of an object being acted upon - a *product* of discourses
>
> (*ibid.*: 30)

In summary, discussion in this section has shown how discourses both provide the context in which individuals knowingly develop their subjectivity or true-self as human beings, and, at the same time, act on or shape individuals (as in ideological hegemony) in ways that are dominated by the power-holders - or, in other words, serve to mediate the power of the dominant groups.

The next section examines and elaborates the sort of covert influences that power-holders are exerting over society in general and education in particular, at the time of writing. It also examines some of the effects of such influences.

SECTION TWO: THE EMERGENCE OF AN ECONOMICS PARADIGM

This section elaborates some of the changes that governments are making to society, including education, ostensibly to achieve economic ends for the benefit of all. But they are changes which may actually serve the power-holders' interests more than the "public good" or educational purposes. Discussion elaborates how, on a more covert level, such changes are affecting the relationship between the state and individuals and also the relationship between knowledge, society and education. Overall, the theme which emerges is that the power-holders are encouraging educators and the populace, covertly, to view society and its needs through an economics paradigm.

Restructuring of the state

Bates (1992), writing at a time when the impact of the reforms initiated in the 1980s was beginning to be felt in tertiary education in New Zealand, observes that,

in response to economic crises, governments of Western countries are restructuring their state sectors. Policies of privatisation and marketisation, he points out, are being introduced to create new markets for capital. Social assets and their supply of services in the public sector are being transformed into profit driven markets. The underlying (covert) purpose, Bates argues, is to create new markets in the public sphere in order to serve the purpose of profit and capital accumulation and thus to perpetuate the established economic order.

Similarly, Bates observes, new technologies, such as those in manufacturing and knowledge management, are being deployed [covertly] in order to accumulate capital for the few. Resource extraction, industrialisation and chemicalisation are also taking place in the interests of the few, despite their harmful effects on the environment.

Bates warns that as a consequence of the creation and concentration of wealth for the few, an increasingly large proportion of the population is being depressed and marginalised. His analysis of the situation is that, typically, the displaced middle classes move down and displace less highly educated labour, with the effect of adding to the dispossession of the working classes. He suggests that the actions of the threatened middle classes actually facilitate the attempt to capture public resources by the few. He reasons that the "creation of education markets based upon 'choice' might well be seen to provide a relative advantage to the middle class in its battle to maintain position and privilege against the logic of labour market restructuring" (*ibid*: 7). The middle classes, themselves, thus support the restructured system because it appears to offer them an advantage in their struggle to maintain their life-style [an example of dyadic power as described by Fay above]. Overall, the restructuring is changing the relationship between the state and individuals. Thus, according to Bates, the changes between the state and individuals are designed to serve [covertly] the interests of the capitalist class.

Offe (1994) argues that it is actually the institutions and social relations necessary for the domination of the capitalist classes (that is, the capitalist mode of production) that the modern welfare (or capitalist) state protects and sanctions, rather than the exclusive interests of the capitalist classes. While the state is concerned to provide conditions which support capital accumulation, including the continued expansion of capital, it is also concerned to be legitimated through democratic processes. It attempts to fulfil the contradictory functions of capital accumulation and democratic legitimation, but the contradictions produce tensions. One of the state's solutions, Offe suggests, is to enhance the value of labour through education programmes [thus the creation of education markets and the emphasis on education as described by Bates above]. However, the contradictory functions remain and, as Offe points out, lead to a number of contradictions in state policies. Governments may be attempting to mediate the fundamental contradiction between the capital accumulation of the power-holders and the democratic interests of all citizens, but contradictions are still evident in state policies in particular areas such as education.

In both Bates' and Offe's analyses the power-holders are organising, or re-structuring, the relationship between individuals and society in accordance with an economics perspective.

Change in the relationship between knowledge, society and education

Barnett (1994) perceives that an interactive relationship exists between knowledge, higher education and society, in the United Kingdom. Changes which are taking place in this interactive relationship, Barnett believes, are leading to a change in the prevalent conception of knowledge within higher education. He explains that post-modern, knowledge-based society is no longer prepared to leave the definition and provision of higher education to the elite few in the universities, as occurred in the

past; but has moved towards framing its own definition of the knowledge required from higher education. The universities are responding by assimilating society's definitions. Consequently, the nature of higher education is changing and university knowledge itself is changing.

An aspect of this change, which Barnett discusses, is a shift in university knowledge from knowledge as a *process* to knowledge as a *product*. He elaborates how, to use his term, *ideology of operationalism* has come to assume importance in current society. An effect is that university knowledge is coming to be conceived as a product, as a commodity and as a performance.

Ideology of operationalism, Barnett elaborates, embraces a market conception of education. Educators, in higher education institutions, are thus influenced to take on a market conception of education and, accordingly, to develop students' abilities to *operate* effectively in society by emphasising in their courses performance, skills, and knowledge in the form of information. But, the ideology marginalises, or fails to recognise, the interactive learning process involved in developing understanding, insight and appreciation and, through which, both the mind of the learner and the knowledge itself are transformed. There has been, Barnett warns, a marked change from the university's traditional concern to provide "...broad educational and personal development, through an interactive process deemed valuable in itself..." (*ibid.*: 13).

Codd (1996a), who takes up Barnett's ideas, argues that the change in the conception of education extends throughout society and is a worldwide phenomenon, not simply something that has occurred in universities in the United Kingdom. He identifies in New Zealand a similar shift in the conception of education to that which Barnett identifies in the United Kingdom, whereby education is coming to be conceived in market terms and knowledge is conceived

as a product, as a commodity and as a performance. Codd links the change with the economically driven transformation of society that has taken place in New Zealand since the mid 1980s. He locates the beginnings of the transformation with the rise of economic rationalism and the subsequent reshaping and transformation of the state.

In Codd's view, the 1991 publication *Upgrading New Zealand's Competitive Advantage* (Crocombe, et al., 1991), generally known as "The Porter Project", exemplifies an overwhelming preoccupation with economic productivity. It was funded by the Trade Development Board and supported by key government ministries, including Treasury and the Reserve Bank. In other words, it was supported by the political and economic power-holders. Its aim was to diagnose the causes of New Zealand's economic decline and to prescribe remedies for recovery.

Crocombe, et al. found that New Zealanders were poorly motivated, inappropriately skilled and insufficiently competitive. They identified education both as a cause of the country's poor economic performance and a means to improvement. Their view was clear - changes were required to education, for economic purposes:

> There is a glaring mismatch between the skills needed to upgrade the New Zealand economy and those provided by our education system.
>
> (Crocombe, et al., 1991)

Codd (1996a) links Crocombe, et al.'s central message with that used by the NZQA to promote the establishment of the *National Qualifications Framework.* And, further, he links the establishment of the National Qualifications Framework with a change in the way that knowledge has come to be conceived. He argues that, in retrospect, "the advent of the Qualifications Framework can be seen as a

fundamental and far-reaching shift in *what counts as knowledge* ..." (Codd, *ibid.*: 4).

The NZQA, Codd believes, strongly subscribes to the instrumentalist market view of education. It is this view, he argues, which "...is reflected in the division between 'standards setting' and 'curriculum delivery' that is enshrined in the National Qualifications Framework" (*ibid.*: 5). [that is, the separation of the means from the ends of education, as discussed previously in Chapter Three]. This division, Codd explains, makes sense within a market model of education in which education is conceived as a commodity; or, in Codd's words, "reduced to a commodity" (*ibid.*: 5).

As described thus far, then, the restructurings of the state have led to changes in how education and knowledge are coming to be conceived; that is, from education as a *process*, involving the development of knowledge and personal development, to education as a product or commodity in the market. It is a conception conceived from an economics perspective. Features of the economics perspective, including the market model, economic rationalism, public choice theory, and human capital theory are described next.

The market model

Bates (1992) captures the essence of the market model in his reference above to "education markets based upon 'choice'" (*ibid*: 7). . Within this model, "education is seen as a branch of economic policy rather than a mix of social, economic and cultural policy" (Marginson, 1993: 56). The economic content underpinning freemarket policies is neo-liberal or neo classical (Codd, 1995; Marginson, *ibid.*). The model's central tenet involves the subordination of state intervention in favour of the free operation of market mechanisms as the way of promoting economic growth and the means of allocating scarce resources (King, 1987). Market-style competition is believed to improve performance and efficiency (Bates, 1992; Codd,

1995; Marginson, 1993.) and to provide answers to questions concerning the achievement of a better society in the future (Pusey, 1991). Although neo market-liberalism has underpinned recent restructurings, it is not entirely new. It is, in effect, a revival of classical liberalism which emphasised doctrines such as individual freedom, public choice and minimal government (Barry, 1986).

Economics is conceived by neo-classical or neo-liberal economists to be a universal discipline which applies to all social phenomena. That which is not recognised is discarded. In combination with management theory and practices, which are also conceived to apply universally, neo-liberal economics encourages a focus upon accountability through the measurement of outputs, within input-output models of production (Codd, 1995; Marginson, 1997). Coupled with the power derived from management, it exerts a normative influence (Marginson, *ibid.*). Marginson describes the process through which economics exerts its normative influence thus:

> ...by imposing its own abstractions on an already-existing reality it begins to re-make that reality in its own image.
>
> (Marginson, 1997: 3)

What Marginson describes is, in effect, the covert influence of an economics paradigm. It is this paradigm that gives rise to *economic rationalism*.

Economic rationalism

Economic rationalism refers to "...the dominance of the economy and economic processes over most areas of society" (Codd, 1996a: 2). Marginson (1993) defines economic rationalism as:

> ...the form of political rationality in which ... the market is substituted for democratic politics and public planning as the system of production and coordination and the origin of social ethics.
>
> (Marginson, 1993: 56)

Thus economic rationality is based in neo-liberal or neo-classical economics and includes doctrines, ideas, ways of thinking and ideology which have come to pervade many areas of society, including education, and which are manifested in

particular practices and structures. The transformation of the relationship between the state and individuals, which Bates describes above, can be conceptualised and understood to have taken place within the context of economic rationalism.

The rise of economic rationality in New Zealand coincides with the election of the Labour Government in 1984. (Codd, 1993). Codd describes Treasury's briefing papers, entitled *Economic Management,* to the incoming government in 1984, "as a comprehensive and clearly articulated statement of neo-classical economic theory combined with neo-liberal theories of state minimalism" (Codd, *ibid.*: 6). Treasury's arguments extended into the social realm, including education, as well as the economic realm.

As already indicated, freedom of choice is associated with the market model and economic rationality. It is a central characteristic of public choice theory.

Public choice theory

Public choice theory is a neo-classical economic theory which is associated with the market model (Bates, 1991; Codd, 1996; Marginson, 1997; Peters and Marshall, 1996a, 1996b; Pusey, *op. cit.*). It conceptualises the way in which the market model purports to "introduce a new democracy of service...whereby demands made of the state can be satisfied through individual choice within a market supplied by multiple, competing producers." (Bates, 1991: 4).

Applied to education, public choice theory and the market model are interpreted to mean that consumers or the purchasers, not teachers, ought to determine the curriculum. The state's role is to ensure, through mechanism of deregulation, that service delivery in education is not captured and monopolised by teachers in pursuance of their own interests (Bates, *ibid.*).

The purchasers of education and training from New Zealand's polytechnics include students, who are consumers; the government, which is an indirect consumer purchasing on behalf of society; and employers, who are the end users of qualifications, who have either a direct or indirect purchasing interest. (Barker, *op. cit.*). In accordance with the market model and public choice theory, the government, employers and students have the "freedom of choice" amongst the multiple providers in the marketplace. It is assumed that, through exercising free choice, the government and, particularly, the students and employers will exert market forces upon polytechnics with the consequence that efficient and effective service will be provided at a competitive (that is, reduced) cost. Also in accordance with the market model, employers, through their membership of Industry Training Organisations, have the power, rather than the educators, to determine the ends of education and training (see discussion relating to ITOs in Chapter Seven). It is thus ensured that the "service" is not captured by the polytechnic educators in pursuance of their own interests (Winder, *op. cit.*).

An implicit assumption made by public choice theory and the market model is that all humans seek to maximise their utility from a stable set of preferences (Marginson, 1993, 1997). The application of public choice theory to the polytechnics, as described above, also assumes that students have full information, that competition amongst the providers influences their decisions and that the market operates within a culture which emphasises and accepts an extreme form of ethical individualism. (see Marginson, 1993, 1997).

Human capital theory

Human capital theory is also associated with the discourses relating to the market model (Apple, 1993; Codd, 1996a; Marginson, 1993, 1997). Codd (*ibid.*) describes human capital theory as theory "where quantified levels of competence, represented by qualifications, are taken to be a form of capital and a source of

economic growth" (*ibid.*: 6). Knowledge, he points out, is commodified as credentials. It "is no longer viewed as a social and cultural achievement, but is reduced to a set of exchangeable 'credits' or a 'currency' of skills (*ibid.*).

Marginson (1993) states that *human capital theory* is "the most influential economic theory of education". He traces its original meaning to the days when slaves were regarded as a commodity, valued on the basis of their production. Current theories, developed by neo-classical economists, are described by Marginson to include two core hypotheses: First, that education increases an individual's cognitive capacity and thereby augments productive capacity. Second, that increased productive capacity leads to increased individual earnings, and that these increased earnings (from the marginal productivity) provide a mathematical measure of the value of the human capital (Marginson, 1993).

Marginson explains that, in a period from the 1960s, human capital theory predominantly was interpreted to argue that education benefited countries' economies. This view, in turn, supported arguments for increased public funding for education. But, from the 1980s, the focus changed. While benefits to the economy were still recognised, the predominant focus changed to quantifying the value of benefits for individuals.

In practice, the change in focus in the 1980s was essentially a re-emergence of an earlier view, rather than a completely new view. It emphasises the belief that people will invest in education up to the point where increased private benefits are equal to the private costs. And it provides a basis for the argument that individuals, themselves, ought to pay for the education which provides them with extra benefits. Marginson (1993) links this focus upon individuals paying for themselves, or investing in themselves (or borrowing "capital") with the development of "the freemarket climate".

Marginson (*ibid.*), himself, argues that many of the assumptions in human capital theory are unsubstantiated by empirical evidence. He expresses this view strongly in his 1997 paper when he states that the assumptions are "...out of whack with reality..." (Marginson, 1997: 8). Notwithstanding his criticism of its empirical validity, Marginson points out that human capital theory still has a normative influence "as a set of propositions about how education should be organised" (*ibid.*). It influences the way people talk, think and act in relation to education, regardless of its empirical validity.

The pervasive influence of the market model, economic rationalism, public choice theory and human capital theory is leading, or has led, to a cultural change.

Cultural change

Schein (1992) defines culture as:

> A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.
>
> (Schein, *ibid.*:12)

To Schein, *basic assumptions* are at the heart of culture. They are ways of perceiving thinking and feeling that have come to be taken for granted by a group and thus define for the members of the group "what to pay attention to, what things mean, how to react emotionally to what is going on, and what actions to take in various situations" (*ibid.*: 22). They are similar to Argyris and Schon's (1974) *theories in use*, the implicit assumptions that actually guide behaviour; that tell people how to perceive, think and feel about things (see also Argyris, 1976). But neither basic assumptions (Schein, *op. cit.*) nor culture itself is readily identified (Edwards, 1991,1988). Both are intangible concepts. However, Edwards's (1998) helpful suggestion that we might think of culture as an organisation's way of life - as its prevailing set of values, norms and beliefs -

provides a useful starting point, particularly if we add 'ideology' to the list of three concepts.

Educators recognise the importance of effecting cultural change along with the more tangible aspects of structural change (Beare, Caldwell and Millikan, 1989; Hargreaves, 1992; Hargreaves and Hopkins, 1993; Hopkins, Ainscow and West, 1994; Stoll and Fink, 1995). For example, Stoll and Fink (*ibid.*) point out that simply changing organisational structures in an attempt to bring about educational change and improvement is likely to fail. The more intangible aspects embedded in the organisation's culture must be changed too.

The need for cultural change as part of the restructuring of education also appears to be understood well by both the government and the NZQA. For example, in his foreword to *Designing the Framework (op. cit.)*, the Minister of Education (Smith, 1991: 2), quoting the National Party Manifesto of 1990, states that the challenge "is to create a world-class education system which will engender a new spirit of enterprise and initiative". And in *Education for the 21st Century*, the Minister states, "All New Zealanders - students, parents, educationalists, business people, and Government representatives - will need to make a commitment to *Education for the 21st Century ...*" (Smith, 1994: 3). The calls for "a new spirit of enterprise and initiative" and for all people to make a "commitment" are, in effect, calls for a cultural change. Hood (1992), the Chief Executive of the NZQA, is even more explicit in his keynote address to the *Qualifications for the 21st Century International Conference. He states*:

> We need above all else to develop a new culture within New Zealand - a learning culture which is not only part of our education system but an integral part of every organisation.
>
> (Hood, 1992: 496)

Peters and Marshall (1996a; 1996b) describe how the government and the New Right's ideologies are creating a neo-liberal societal and educational context or

culture in which citizens are being developed as *autonomous choosers*. Exercising choice, they theorise, is coming to be viewed as if it were a fundamental aspect of human nature which people must exercise, if they are to be truly human. Society is being structured by the power-holders in a way that gives people the "freedom" for individual choice and encourages them to exercise consciously their "free" choice in the marketplace.

More generally, within the context of economic reforms instituted and carried out by successive New Zealand governments, Peters and Marshall (1996a; 1996b) perceive that a pervasive cultural change is taking place. They emphasise that the change is not restricted to just those aspects of the culture which are directly related to education, but extends across the total culture and is "penetrating the very basis of human nature" (Peters and Marshall, 1996a: 33). It is, in effect, a reformulation of the relations between the individual and society. At the centre of the change is a new form of governmentality or rationality which they conceptualise as *busnocratic rationality*. It is, they argue, being created and promoted by the state and the "New Right". And it is justified in terms of market-place competition which is argued to result in greater economic efficiency and better institutions and a better society.

Consistent with Peters and Marshall's view, Marginson (1997) argues, as alluded to above, that a universal economics paradigm is being imposed, in both principle and practice, upon an education setting from outside, regardless of educational considerations. He describes how basic axioms of economics, relating to assumptions about individuals and their behaviour, constitute a *super-reality* which economists impose on any reality.

Thus far, then, the emergence of an economics paradigm has been traced. Some illumination of how this paradigm is influencing people's conceptions of their

worlds has been provided. Also the discussion has alluded to problems arising from the imposition of an economics paradigm upon education. There are sound educational reasons why educators ought not to share the values and basic assumptions associated with the economics paradigm.

SECTION THREE: CRITIQUE OF AN ECONOMICS PARADIGM FROM AN EDUCATIONAL PERSPECTIVE

Two themes of particular relevance to the present study emerge from criticisms of the economics paradigm's influence upon how education is conceived. They are, firstly, that the economics paradigm limits what is counted as knowledge, and, secondly, that the economics paradigm emphasises individualism at the expense of social concerns and communication. A brief review of discussion relating to these two themes follows:

An economics paradigm limits what is counted as knowledge

The following discussion first briefly reviews arguments from the present study that show how the imposition of economics paradigm is coming to limit what is counted as knowledge. It then develops the theme with further references to relevant literature.

Chapter one introduced the argument that people's theories influence how they see their worlds and thus what they do. Similarly Chapter Five introduced the notion that scientific paradigms influence what people see and do. Amongst other things, this argument, that the way people think influences what they see and do, introduces the possibility of controlling the populace by influencing their thinking.

Chapter Five developed the notion that knowledge is a social construction rather than something which exists universally. Then, in this chapter, discussion focused

upon, first, how the beliefs and ideologies of the power-holders enter, unnoticed, into the language, discourses, ideologies and ways of thinking of the populace and, in so doing, come to influence what knowledge is recognised and counted; and; second, how the direction of that influence in the past fifteen years has been towards the recognition and development of forms of knowledge which provide an economic perspective and promote economic goals.

Marginson's (1997: 4) writing develops the theme that an economics paradigm limits what is counted as knowledge. He theorises that the *mode of thought* determines what phenomena are recognised by a particular theory; and, the corollary, what phenomena remain hidden from view. He reasons that when the mode of thought for considering education is a neo-classical economics frame (an economics paradigm), allowable phenomena include observable inputs and outputs that can be measured in economic terms. But, on the other hand, the more intangible aspects of education that cannot be defined and measured in economic terms are suppressed or hidden from view.

Peters and Marshall's (1996a; 1996b) writing also develops the theme that an economics paradigm limits what is counted as knowledge. They suggest that what people recognise as education (and as their own educational needs) actually is shaped hegemonically by the ideologies of the power-holders. People may be overtly encouraged to make conscious choices in the education market-place; but, Peters and Marshall argue, at the same time, covert power is exerted upon them in the form of ideology promulgated by the power-holders. It covertly shapes the people's perceptions of their needs and their conceptions of education and knowledge. Promulgation of the ideology, Peters and Marshall elaborate, is through such means as media and presentations emphasising such aspects as the need for skills, lifelong re-skilling and economic motives for education.

Thus the economics paradigm provides a perspective which recognises and counts observable, measurable phenomena as knowledge, but excludes more intangible, less measurable phenomena. At the same time, people's way of thinking about their educational requirements is influenced covertly, through hegemonic processes, to comply with the economic paradigm - the paradigm adopted by the power-holders. The outcome is that the economics paradigm is limiting adversely what is counted as knowledge.

As well as excluding some important forms of knowledge, the economics paradigm imposes another fundamental problem upon education.

The economics paradigm emphasises individualism at the expense of social concerns and communication

Marginson (1997) is critical of the extreme view of individualism in public choice theory. He argues that this view of human relations is problematic in an education setting. The notion of the *common good*, for example, is excluded by the focus on individual gains in the market place.

In a similar vein, Stoll and Fink (*op. cit.*) reject conceptions of school leadership that promote "a bureaucratic corporate agenda designed to promote individualism, competition and standardisation" (*ibid.*:102). Instead their re-conceptualisation of educational leadership emphasises humanistic considerations which affirm students as able, trustworthy and worthwhile human beings. They also ensure that students are affirmed by the messages communicated through institutional policies, programmes, practices and physical arrangements. In other words, they ensure that what often remains as the hidden curriculum becomes part of the recognised curriculum (see discussion in relating to the hidden curriculum, in Chapter Four).

To Habermas (*op. cit.*) the emancipatory interest, the interest motivated by reason rather than inclination, may be an individual experience insofar as it is achieved by individuals through their own self-reflection. But he stresses that it also must involve consideration of others, because people must interact with one another in order to live in a society. Autonomy or individual freedom is, he reasons, inextricably linked with the freedom of others, which, in turn, inextricably links emancipation with the moral values of truth and justice.

Codd (1995) believes Pusey, (*op. cit.*) shows considerable insight when he comments to the effect that, while there can be no argument with the efficiency gains that rationalisation may have brought in many areas of the state, there is, at another level a problem. He refers to a loss of social intelligence and the suppression of a number and range of potentially constructive discourses. The implication is that these are difficult to define forms of knowledge, relating to social interaction and communication. These forms of knowledge are disregarded by the economics paradigm

Snook (1996) believes the central function of schools, especially in a democratic society, is the creation of critical thinkers, critical consumers and critical citizens. Again, the emphasis is upon social rather than individual concerns. Similarly, Codd's (1995) statement of the fundamental question which he believes should drive the whole educational enterprise implies a social concern. It is: "What kind of human beings do we want our students to become?" (p.14).

Thus, essentially, writers such as Marginson, Stoll and Fink, Habermas, Codd, Pusey and Snook emphasise social intelligence and communication and, in so doing, reject the individual emphasis of the current economics paradigm.

The next section considers the question of why it is that some educators condone and support the economics paradigm. Then, to conclude, a suggestion for improving the situation is offered.

SECTION FOUR:- EDUCATORS: ACQUIESCENCE OR CHALLENGE?

Educators might be expected to mount a greater challenge to the imposition of an economics paradigm in place of an education paradigm, but, as Peters and Marshall (1997) point out and the foregoing discussion makes clear, they are not in control of the curriculum. What is perceived as being of value in education is being imposed from outside of education itself. As a number of writers argue (e.g., Apple, 1993; Bates, 1991; Codd, 1996; Peters and Marshall, 1996; Schon, 1987; Winder, 1996), the current economics perspective of education views teachers as technicians who implement the best means to attain the prescribed ends.

Apple (*op. cit.*) warns that teachers are becoming *deskilled*, as occurs in jobs in which there is a "separation of the conception from the execution" (Apple, *ibid.*: 121). Teachers are losing control over their own labour to "someone outside the immediate situation [who] now has greater control over both the planning and what is actually to go on" (Apple, *ibid.*) . Apple argues that when individuals no longer plan and control their own work, the skills essential to doing such tasks self-reflectively and doing them well, atrophy and are forgotten. In this respect he states:

> Instead of professional teachers who care greatly about what they do and why they do it, we may have alienated executors of someone else's plans
>
> (Apple, 1993: 123)

As Snook (1996: 55) argues, the real threat to education in New Zealand comes not from the new Framework, but from "the headlong rush to make education a servant of the market."

Against the threat posed by the economics model, Peters and Marshall (1996) point out that critical theorists, such as Bates (1991) and Apple (1985, cited in Peters and Marshall, *ibid.*), advocate a model which conceives curriculum as a form of cultural politics. It problematises matters such as how knowledge is construed, values and interests, and thereby encourages debate [understanding and action leading to change for the better]. This is indeed the approach developed from critical theory, which is a major part of the theoretical base underpinning the present study

SUMMARY AND CONCLUSIONS

The chapter described how discourses not only provide the context in which individuals knowingly develop their subjectivity or true-self as human beings, but also shape individual's beliefs, ways of thinking and actions without their conscious awareness. In other words, the power-holders' beliefs and ideology are hegemonically mediated through discourses which come to be accepted uncritically by those for whom the discourses constitute lived experiences. In effect, the power-holders were seen to exert a form of consensual power over the populace.

It was argued that in recent years society's power-holders have sought to change the culture of society, including the way education is conceived, in order to achieve instrumental economic ends held to be necessary for the prosperity of society. But critics argue that the economic ends are actually in the power-holders' interests, not education's interests nor that of the "public good".

Discussion suggested that the power-holders' economic perspective represents the emergence of an economics paradigm which is being imposed, unnoticed, and is becoming the paradigm through which people view their experiences and live their daily lives. It was argued that the effects of this paradigm are harmful for

education and that they include an emphasis upon observable, measurable knowledge; individualism; competition in the market place; and the conception of knowledge as a product and/or a commodity in the market place.

Consideration of criticisms of the economics paradigm indicated that there are important aspects of knowledge which are either not recognised by, or not satisfactorily developed within, the economics paradigm. They include knowledge that is not amenable to linguistic description and measurement; critical thinking; communication and social considerations; and moral values, such as truth and justice, which are required for satisfactory communication and emancipation. In contrast, the conception of education/learning/knowledge implied by the critics was that of an evolving process in a person's intellectual growth, leading to emancipation.

Another harmful effect arising from the imposition of an economics paradigm upon education was argued to lie in the deskilling of teachers from professionals "who care about greatly about what they do and why they do it" (Apple, *op. cit*: 123) to technicians implementing somebody else's plans.

Finally, a critical approach was proposed as the means through which educators might not only recognise and challenge the imposition of economics paradigm upon education, but also continually critique and debate all aspects of education, including how knowledge is construed, values and interests, and the purposes of education.

It is inferred from writers' views discussed in the chapter that the NZQA's conceptualisation of teaching and learning includes the conceptions: that the means and the ends of education can and ought to be separated; that the ends of education ought to be determined by experts from outside of education; that

education is a commodity which can be bought and sold on the market; that market forces involving competition and individualism lead to the improvement of education; that knowledge and skills exist as commodities or products or performances on the market; that education is the instrumental means to economic ends; that education can be measured and represented by qualifications which have a market value; that difficult to describe, difficult to measure and intangible forms of knowledge ought not be "counted"; and that teaching involves applying the best means of achieving specified ends.

CHAPTER SEVEN

ANALYSIS OF OFFICIAL DOCUMENTS

INTRODUCTION

The theoretical analysis in Chapter Six indicated that an economics paradigm is being imposed upon education. Section One in this chapter examines a selection of documents from those which were affecting polytechnic education at the time of the interviews in the study (that is, late 1995 to early 1996). The purpose is to discover whether they are underpinned by discourses reflecting an economics paradigm. Five themes are identified.

Section Two also analyses a selection of documents and legislation relating to new policies affecting teaching and learning in polytechnics, again for the period around the time of the interviews in the present study (1995/1996). The aim this time is to "uncover" how teaching and learning are conceptualised in the documents and legislation. Particular attention is given to examining documents and legislation related to the researchers' original concerns as detailed in Chapter One.

Section Three examines more recent documents, from 1996 to 1999, in order to discover whether there have been changes since the time of the interviews in the study. No changes are found in relation to the economics paradigm, but the findings indicate changes to the conceptualisation of teaching and learning underlying official policy documents.

The chapter closes with a summary and conclusions

PROCEDURE

Selection of documents

Initially the selection of documents was made from documents that came across the researcher's desk in his position as head of department, at a polytechnic. Consistent with the principles of purposive sampling (as described in Chapter Two) those documents that appeared to be relevant to the purpose of the study were selected. Additional documents, including those obtained after the researchers' retirement from the polytechnic, were selected, mainly by following-up leads provided by the original documents. Thus no claim is made that the selection procedure yielded a representative sample. Nevertheless, it is believed that similar findings would be readily revealed in other selections of similar documents relating to policies to do with teaching and learning in a polytechnic.

The question of whose conceptualisation underlies the documents

In Chapter Two (Section Three), society's political and economic power-holders were argued to "own" (create and promulgate) the conceptualisation underlying legislation and policies aimed at reforming education in polytechnics. The NZQA, in the role of the government's "official arm", was argued to mediate the legislation and policies affecting teaching and learning in polytechnics. It was also argued to mediate the power-holders' conceptualisation of teaching and learning. Thus it is particularly relevant to try to "capture" the NZQA's conceptualisation implied in legislation and policies associated with its work. It is also relevant to capture the political and economic power-holders' conceptualisations because they most probably are the source of the NZQA's conceptualistion. It is their conceptualisation which is embedded in the legislation and policies and reflected in the NZQA's conceptualisation.

SECTION ONE: ECONOMICS DISCOURSES IN OFFICIAL DOCUMENTS

This section analyses selected documents on new policies in tertiary education and their implementation, in order to discover whether there is any evidence of economics discourses underlying the policies. Five themes indicating an economics paradigm are revealed.

All five themes are discernible in the following quotation from *Learning for Life Two* (Minister of Education, 1989). Thus the quotation provides a useful starting point. The government suggests, in the quotation, that past problems in the structure for post-compulsory education and training will be resolved through the system being accorded freedom to manage its resources and, at the same time, becoming more responsive to industry and society:

> ... symptomatic of a system that needs a clear sense of direction and the freedom to manage its resources, so that post-school education and training can become more equitable, more responsive to industry and the wider community, and a greater source of excellence in our society"
>
> (Minister of Education, 1989: 9)

The combination of references to "clear sense of direction", "freedom to manage its resources", "more responsive to industry", and "greater source of excellence in our society" suggests an underlying economics interest or paradigm. Three of these four references, those to "clear sense of direction", "responsive to industry", and "greater source of excellence in our society", suggest an outcomes model of education in which teaching and learning are conceived as the instrumental means to an end, which the statement overall implies is an economic end. [see *the NZQA's objectives/outcomes model* in Chapter Three; and Codd's (1994) description of the "Market Model of Education"].

The first theme, then, is that *education is the instrumental means to economic ends,* (instrumental means).

The second theme is *that there ought to be "freedom" of choice in the education market-place* (freedom/market forces). This theme is suggested by the reference to "freedom" in the above quotation. The implication is that post-school education providers should be "free" to participate in an education "market-place", where it is assumed competition and market forces will result in an improved "product" (see *market model* and *public choice theory*, in Chapter Six).

The third theme, *that everybody ought to have the opportunity to participate in education so that they can contribute towards improving the country's economy,* (utilise all/equity), is suggested by the reference to "become more equitable" in the above quotation. It reflects a concern to utilise *all* people who can contribute towards improving the country's economy, or be retrained to contribute to the economy, and thereby improve New Zealand's economic position in relation to its competitors in the international market. Equity is consistent with this thinking, insofar as it is interpreted to mean giving everybody the opportunity to participate. It is an interpretation of equity which is consistent with an economics paradigm, rather than a humanitarian paradigm. People are regarded as human capital (see *human capital theory* in Chapter Six), rather than as human beings.

The fourth theme, *that educational excellence, innovation and accountability are required for successful competition in the market* (excel/innov/account), is evident, in part, in the above quotation through the inclusion of the word "excellence" itself. Excellence may be associated with enterprise and innovation insofar as these are seen as skills required for competition in the international market. Alternatively, quality or excellence may be associated with the control and accountability deemed to be necessary in order to ensure that excellent outcomes are achieved (see *market model*, in Chapter Six).

The fifth theme, *that economic needs are met in the same way as human needs,* (economic equals human), is reflected in the words "industry and the wider community" in the above quotation. It is asserted that achievement of the country's economic needs and well-being will, at the same time, automatically result in achievement of human needs and well-being. The technique of pairing the two notions in a manner that assumes an equivalence is used in order to make such assertions; for example, statements that take the form "A will lead to X (economic needs/end) and Y (human needs/end)." The example cited above, in which "industry" and the "wider community" are paired, asserts that the economic needs of industry and the human needs of the community can be achieved in the same way.

These, then, are the five themes which were found throughout the selection of documents. Some further examples are described below:

Three of the themes are evident in the following quotations from the Minister of Education's welcoming address, at the 1992 conference, *Qualifications for the 21st Century.* The first quotation emphasises the need to provide training for all (the third theme: utilise all/equity):

> ... people are our greatest resource. Our education, training and qualifications system must cater for all, providing ... opportunities for all New Zealanders to go on learning.
>
> (Smith, 1992: 6)

Next, the Minister indicates that the purpose of education is economic growth (the first theme: instrumental means). And there is also the suggestion of equity through no sectors being excluded from making their contribution (the third theme: utilise all/equity).

> We simply limit our growth potential if sectors of our society are excluded from the qualifications system as they have been in the past.
>
> (*ibid.*)

The emphasis on involving all people throughout society continues in the quotation below. We also learn that it is to be a lifelong process (both points reflect the third theme: utilise all/equity). Then a link is made between the country's economic prosperity and individual fulfilment: it is assumed that they are achieved in the same way (the fifth theme: economic equals human):

> In New Zealand, we simply must advance at all levels of society the growing recognition that learning must be a lifelong process, that education is the path to economic prosperity and personal fulfilment.
>
> (*ibid.*)

In his foreword to the *New Zealand Qualifications Authority Strategic Plan, 1992 - 1997* (NZQA, 1992), Sir James Stewart, the inaugural Chairman of the Board, of the Zealand Qualifications Authority, states:

> So I began asking myself - what has been the wastage of human capital through our failure to provide pathways for so many 15-18 year olds, which are motivating, exciting, rewarding and realistic, and from which they have been precluded for a variety of reasons ....
>
> (Stewart, 1992: 3)

While expressing human concern for the young people who are not benefiting from the education system, Stewart frames the problem in terms of the economic concept, *human capital*. It is a problem involving the "wastage of human capital". The answer is not to waste the capital; that is, to utilise the human capital by ensuring that education and training reaches more people (third theme: utilise all / equity). The next quotation, also from Stewart's foreword, appears to reflect a similar combination of human and economic concern:

> The Authority ... // ... has made substantial progress in the design of a National Framework of qualifications which I believe will contribute strongly to resolving the three big issues of low retention rates, underachievement in some sectors, and underskilling of the workforce. The really difficult task, that of implementation, is now before us and this Strategic Plan covers the next five crucial years of putting the Framework in place. ... // ... We are looking forward keenly to working together in the interests of the young people of New Zealand.
>
> (Stewart, 1992: 4)

Although he does not use the pairing technique in the way that is described above, Stewart, nevertheless, implies that resolution of "society's three big issues" - which is fundamentally a societal, economic problem - will also resolve (be "in the interest

of the young people of New Zealand") the human problems of the young people. He is thus equating economic interests or well-being with human interests or well-being (the fifth theme: economic equals human).

The main body of the *Strategic Plan* continues in a similar vein. In comparison with its major trading partners, New Zealand's "participation rates in post-compulsory education and training are low" (*ibid.*:12). "One off" education and training in preparation for a lifetime's work are seen to be outdated. Instead, "changing patterns of technology and trade will demand constant reviews and updating of knowledge and skills, for individuals and as a nation" (*ibid*). Thus, according to the *Strategic Plan*:

> Our social and economic development depend upon harnessing human potential. Development and growth will come from developing and utilising the skills of all New Zealanders
> (*ibid.*: 12 -13).

The above references to low participation rates, to "harnessing human potential" (human capital) and "utilising the skills of all New Zealanders" all suggest the need to involve more people in education for, it seems, the sake of the country and/or the people themselves. Thus, these references reflect the third theme: utilise all/equity Also in the above paraphrase and quotations, the pairing of "individuals" and the "nation" and of "social and economic" suggest human well-being lies in the country's economic-well being (the fifth theme: economic equals human). And "harnessing human potential" and "utilising the skills of all New Zealanders" are references to education and training required to achieve the country's economic ends, which represents the first theme: instrumental means.

We learn from the Minister of Education (Smith, 1991), in his foreword to *Designing the Framework* (NZQA, 1991), that enterprise, which implies innovation, in education is also to be fostered (the fourth theme: excel/innov/account). The Minister of Education quotes the *National Party Manifesto*, which states:

The challenge we face is to create a world-class education system which will engender a new spirit of enterprise and initiative...

(National Party Manifesto, 1990; cited in Smith, 1991: 2)

Excellence, another aspect of the fourth theme (excel/innov/account), is evident in *Learning for Life Two* (*op. cit.*), where the Government states its intention that "certain principles should govern institutions and provide a basis for statements of purpose in their corporate plans" (p. 15) and govern the exercise of powers in post-school education. These principles, which the Government intends to encompass in legislation, are to include, *inter alia*:

the highest standards of excellence in post-school education, training and research
(Minister of Education, 1989: 15)

Conclusion

It is concluded that, at the time of the interviews in the study, a selection of official policy documents conceptualised teaching and learning through an economics paradigm.

SECTION TWO: CONCEPTUALISATIONS OF TEACHING AND LEARNING IMPLIED IN OFFICIAL DOCUMENTS (1995/1996)

This section analyses official documents published by government, the Ministry of Education and the NZQA (or published under the name of a senior official) and some legislation. The aim is to discover how, particularly in relation to the researcher's concerns described at the outset of the study, teaching and learning were conceived in documents and the legislation at the time the interviews in the study; that is, 1995/1996.

The documents were selected as described under "Procedure" at the beginning of the chapter. Particular attention was given to selecting documents relating to policies developed and implemented by, or associated with, the NZQA's role in

introducing the recent education reforms, which were perceived to be impacting upon teaching and learning in polytechnics, at that time. The analysis is carried out under the four continuums which were described in Chapter Two: Methods and Procedures.

Analysis of official documents: Conceptualisations of teaching and learning at the time of the case studies (1995/1996)

1. The means are separated from the ends of teaching/learning

<----------->

The means are integrated with the ends of teaching/learning

Learning for Life Two (*op. cit.*), clearly forewarns of the emphasis that is to be placed upon making education more responsive to the end users in the future. For example, the quotation included at the beginning of this chapter states that post-school education:

> "needs a clear sense of direction ...//...(and to become) "more responsive to industry and the wider community"
>
> (*ibid.*).

This emphasis upon the needs of the end users is, in effect, an emphasis upon the ends of education, rather than the process involved.

The *Education Amendment Act* (1990), took another step towards ensuring that post-school education was given a clear sense of direction by the end users. It established the NZQA, charging it with the three central responsibilities of: (1) overseeing the setting of standards for post-compulsory qualifications; (2) developing a framework for national qualifications; and (3) establishing policies and criteria for approving courses and accrediting institutions to provide courses. The effect was to place the setting of standards (determining the ends of education) in all tertiary teaching institutions, except universities, under the control of interests outside of education.

[Up until the date of writing, universities, by virtue of a clause that requires consultation with the Vice-Chancellors [*Education Amendment Act* (1990), Section 253,2(a)], have managed to resist the NZQA's control (see Codd, 1994).]

The NZQA's commitment to the separation of the means from the ends of education is clear in the following quotation from its 1993 *Briefing Papers for the Incoming Government*:

> In practice, the academic, operational and management independence of institutions is encouraged by:
>
> _ separating clearly the setting of standards from the development of curriculum; and
>
> - a systems approach to the assurance of quality.
>
> (NZQA, 1993: 9)

In his speech to the *Association of Polytechnics in New Zealand's (APNZ's) Conference*, in 1994, the Minister of Education clearly made the point that education in general, and polytechnic education in particular, was to meet industry's (employers') needs. The implication was that industry/employers were to be (or had been) given responsibility for determining the ends of polytechnic education:

> It is vital for both economic and social reasons that we ensure our polytechnics, and the wider education system, are providing students with qualifications representing the skills, knowledge and understanding that employers are looking for.
>
> (Smith, 1994: 5)

The above statement is even more significant given that through the *Industry Training Act* (1992), the government had introduced the opportunity for the establishment of Industry Training Organisations (ITOs) two years previously. The effects were beginning to be felt in 1994, at the time of the Minister's speech.

The *Industry Training Act* enables each industry sector to establish, if it so wishes, an ITO with responsibility for: (1) setting the national skills standards

for registration on the National Qualifications Framework; (2) developing arrangements for delivery of training; and (3) developing arrangements for monitoring training and assessing trainees. This means that, by legislation, the setting of standards (the ends) is removed from the teaching institutions, which are thus left to provide the means. Also as part of this separation, responsibility for overseeing assessment is separated from the teaching function. But that is not all. Point (2), "developing arrangements for delivery of training" and the reference in point (3), to "monitoring training", also enable the ITOs to exert considerable power over the means as well as well as the ends of education. They can require, as Winder (*op. cit.*) points out, training providers to use particular teaching packages, including teaching methods and assessment procedures - all intended to ensure that the ends they require are achieved.

In his speech at the *APNZ Conference*, in 1994, the Minister of Education also indicated that in the future polytechnics could expect to receive a growing proportion of their funding through the ITOs, rather than through the traditional system of funding based upon the numbers of full-time equivalent students. He stated:

> As we look to the future, I expect that polytechnics will continue to receive a growing proportion of your (sic) funding from ITOs compared with through the EFTS [equivalent full time students] system
>
> (Smith, 1994: 3).

The Minster's statement indicates that the ITOs were being given a new and potentially powerful role. And, in accordance with Point (2) in the above Act (that is, "developing arrangements for delivery of training"), the Government was, in fact, giving them responsibility for allocating funding which previously had been allocated direct from the Ministry of Education to polytechnics. At the same time, a change from the concept of *allocating* funding, to the concept of *purchasing* training was being introduced. The "new" funding system included a tendering process, through which the ITOs purchased training from

polytechnics and/or other providers - all of whom had to be first accredited by the NZQA. Funding for polytechnics was no longer simply allocated according to student numbers or equivalent full-time students (EFTs); it was becoming *contestable*. The ITOs purchased training from the market (providers), just as any consumer purchased any commodity in the open market. In other words, education was becoming (or had become) a commodity in the education market, in which polytechnics were becoming (or had become) producers, or to use the Ministry's coinage, "providers".

By October 1995, true to the Minister's above statement at the APNZ Conference, the education and training provided through ITOs had increased considerably. The Minister of Education was reported to have stated that "53% of the employed workforce was covered by ITOs. (Smith, reported in NZQA, 1995: 5). The ends of polytechnic education were quite clearly separated from the means and coming to be placed firmly under the control of ITOs. And, in effect, lecturers were being conceived as technicians applying the designated means to achieve the predetermined ends.

Yet there was an indication of a change. In 1994, following criticism of NZQA's emphasis upon outcomes at the expense of educational processes and thus of the unsuitability of the unit standards structure for university degrees, the NZQA appeared to modify its position. It acknowledged that some learning involves the development of processes rather than outcomes, *per se*:

> The perception that the Qualifications Authority rejects "process" in favour of "outcome" behaviour is also wrong. General education standards being developed do include process elements. There is definitely a place for understanding, argument, analysis, integration and problem solving.
>
> (NZQA, 1994, *QA News*: 5)

In the above response, the NZQA implies, in effect, that a process can be an outcome. Even apart from the obvious contradiction in terms, the inclusion of *process outcomes* within the NZQA's outcomes model is problematic. The

model requires the description of standards, and the pre-specification and measurement of definitive outcomes; whereas processes may be difficult to describe in precise observable terms and, by definition, are on-going, possibly with no definitive end-point. Further, the NZQA's outcomes model separates means from ends (see Chapter Three), rather than encouraging the dialectical integration of means and ends that constitutes educational processes (see Dewey in Chapter Four).

Thus, the NZQA's above statement is acknowledged to indicate the recognition of a need for a change, but not to indicate any change to its conception that teaching and learning is, and ought to be, accomplished through an objectives/outcomes model.

Overall, the documents appear to conceive teaching and learning in a way that separates the means from the ends, but there was a slight hint of change. Thus this conceptualisation is located not quite at the left-hand end of the above continuum.

2. ***Learning/knowledge/skills are capable of precise linguistic description, pre-specification and measurement***

<----------->

Learning/knowledge/skills cannot be readily captured in linguistic description, pre-specified and measured

In 1991, in its early discussion document, *Designing the Framework* (NZQA, 1991a), the NZQA described standards-based assessment as follows:

> A learner's performance is measured against standards of achievement or competence. Results are reported in terms of what the learner knows or can do.
>
> (NZQA, *ibid.*: 54)

Also in 1991, the NZQA stated in its booklet, *The Framework and Polytechnics* (NZQA, 1991b):

> The Framework will ... // ... measure achievement against clear standards
>
> (NZQA, *ibid.*: 3)

And in 1993, in *A Future with Standards* (NZQA, 1993a), the NZQA stated:

> Units are fit for the purpose when outcomes/elements and performance criteria are measurable
> (NZQA, *ibid.*: 3)

The above three statements indicate that learning outcomes and/or standards are conceived to be capable of precise description, pre-specification before learning takes place and accurate measurement, following learning.

Comments made by the then Minister of Education (Smith, 1992) in his welcoming address to the 1992 conference, *Qualifications for the 21st Century: International Conference,* imply that he conceives standards in this way, too. In urging a change from comparative forms of assessment to standards-based assessment, he stated:

> We must measure the achievements of our students against pre-determined standards. We must not be satisfied with merely ranking them against their peers"
> (Smith, *ibid.*: 6)

The requirements for standards to be pre-determined and achievements measured against them imply that the standards must be capable of precise description and both the standards and achievements must be capable of accurate measurement.

Also at the *Qualifications for the 21st Century* conference, Hood (1992), the then Chief Executive of the NZQA, specifically excludes outcomes that cannot be defined. He states that qualifications must, *inter alia*:

> ... be based on sound principles of quality, with clearly defined outcomes or standards, rather than mythical "standards" incapable of definition.
> (Hood, 1992: 507).

The view that standards can be clearly defined and measured enables them to be conceived (or reified) as the products of education in the market-place. Barker (*op. cit.*), the then Strategic Manager, Policy, Research and Review, with the

NZQA, conceives packages of standards, represented by qualifications, as a "form of currency" in the market-place, when he states:

> Qualifications act as a form of currency in society, and particularly in the labour market.
> (Barker, 1995: 15)

Thus the documents examined indicate that, at the time of the study, the NZQA conceived learning, knowledge and skills, to be capable of clear description, pre-specification and accurate measurement. The documents also indicate that the outcomes of teaching and learning were conceived to be external products which could be bought and sold in the market place. They were not conceived to be personal qualities. This conceptualisation of teaching, learning and knowledge is represented by placement at the extreme left of the continuum.

3. Knowledge comprises the sum of discrete components

<----------->

Knowledge has holistic characteristics over and above the sum of its separate components

Designing the Framework (op. cit.), which as previously noted is a discussion document written by the NZQA shortly after its establishment, adopts the metaphor of building-blocks to describe *units of learning* (later renamed *unit standards*), which were to be (and became) a central component of its *framework*. It states:

> The framework will be a coordinated set of units of learning, ... // ...The building blocks of the framework are units of learning, designed around clearly specified outcomes
> (NZQA, 1991a: 36)

The Framework and Polytechnics (NZQA, 1991a) provides an explanation of *units of learning* (building-blocks) for polytechnic staff. It states:

> Qualifications will consist of tailored packages of units ... // Learners can take one unit on its own or several units which make up a qualification ... (pp.: 5-6)

Thus the building-blocks metaphor tells us that qualifications are constructed by adding on separate building blocks (units of learning). The message is that

knowledge comprises the sum of discrete pieces of knowledge and, similarly, that teaching and learning are concerned with building-up knowledge by adding discrete pieces of knowledge to a student's store of knowledge. This conception of knowledge again is represented by placement at the extreme left of the continuum.

4. Learning/knowledge has a universal application

<----------->

Learning/knowledge is related to its context (including its political context)

In the following statement, from *The Framework and Polytechnics* (*op. cit.*), the NZQA points out that different teaching institutions will be able to offer the same units:

> Schools, private training establishments, wananga, workplaces, colleges of education and polytechnics will be able to offer the same units which will be of equal value [credit rating] wherever they are offered.
>
> (NZQA, 1991b: 6)

The statement implies that knowledge is independent from the context in which it is learned. It seems that knowledge is conceived to have an existence apart from people, as an external, measurable thing, rather than as a human quality. There appears to be a tendency to reify knowledge.

The conception of knowledge as something that has an existence apart from people is also suggested by the NZQA's method of course construction. For example, in its booklet, *Working for Industry* (NZQA, 1993b), the NZQA explains that "standards setters" may, in addition to designing their own standards, choose suitable existing standards from the National Qualifications Framework, for inclusion in their qualification:

> Standards-setters can choose from any unit standards that are registered on the Framework, not just the unit standards they've developed. That means that the same unit standards can be part of different qualifications.
>
> (NZQA, 1993b: 7)

Thus the documents indicate the conception that knowledge not only has a real existence apart from people, but also is transferable from one area of vocational education to another; that is, across different contexts. This, in turn, suggests the further conception that knowledge is universal rather than related to its context. This conception of teaching and learning, once again, is represented by a placement at the extreme left of the continuum.

Conclusions

The conceptualisation of teaching and learning inferred from the document analysis includes the conceptions that: the ends can and ought to be separated from the means of education; the outcomes of teaching and learning are capable of precise description, pre-specification and measurement; knowledge comprises the sum of its component parts; and knowledge has an universal form independent from its context, including its human context. The documents also implied the conception that teaching and learning takes place through the progressive, cumulative addition of units of skills and/or knowledge.

On the basis of the evidence presented, all four of conceptualisations of teaching and learning inferred from the document analysis, for the period 1995/1996 are represented by placements at, or close to, the extreme left of each continuum.

As explained above, the documents analysed relate to government legislation and policies implemented and developed by, or closely associated with the work of, the NZQA. The NZQA acts as the government's "official arm" implementing the policies and legislation. Thus, the NZQA's conceptualisation of teaching and learning is argued to be embedded in and to reflect the government's conceptualisation.

SECTION THREE: CHANGES TO DISCOURSES AND CONCEPTUALISATIONS FROM 1996 TO 1999

This section analyses more recent selections of official documents in an attempt to discover if, from the time of the interviews to the date of writing, any changes are suggested by the documents, firstly, to the economic themes underlying the "official" conceptualisation of teaching and learning, and, secondly, to the way in which official documents conceptualise teaching and learning.

The economics paradigm: Analysis of recent documents (1996-1999)

Two recent White Papers are examined to discover whether changes are indicated to the five themes identified in Section One of this chapter. The documents examined are two White Papers: *Tertiary Education in New Zealand: Policy Directions for the 21st Century* (Ministry of Education, 1998) and *The National Qualifications Framework of the Future* (Ministry of Education, 1999).

The first theme, that education is the instrumental means to economic ends (instrumental means), is evident in *Tertiary Education in New Zealand: Policy Directions for the 21st Century.* In the opening paragraph, in his introduction, the Minister of Education refers to the role of tertiary education in achieving economic ends defined by employers. In the same paragraph, he also refers to what are, essentially, quality and excellence (that is, the fourth theme: excel/innov/account) in "a high-performing tertiary sector" as the "key" for "success" (in the market-place):

> A high-performing tertiary sector is the key to a forward-looking cohesive, creative, and innovative society in the 21st century. ...// ... Employers will demand higher and more diverse skills and knowledge to support the creativity and enterprise upon which their success depends.
> (Creech, 1998: 2)

The second theme, "freedom" of choice in the market-place (freedom/market forces) is also clearly evident in *Tertiary Education in New Zealand: Policy*

Directions for the 21st Century. It is reflected in the following three quotations: The first, from the section "Legislative Framework", clearly states the intention that tertiary institutions be given greater "choice" (or required to make market choices) to set their own directions:

> The present legislative framework governing the tertiary sector suffers from being very prescriptive. The sector would benefit from having more concise legislation that enables it to adapt to meet the inevitable challenges that are necessary over time. ... This will give more opportunity for institutions to determine their own pathway for the years ahead.
>
> (Ministry of Education, 1998: 13).

That tertiary institutions will be required to respond to market forces is made clear in the second quotation which is from the section, "Subsidising the Cost of Tertiary Education". Government funding is to be available according to how many students are actually attracted to courses:

> Subsidies will be delivered on actual rather than forecast enrolments.
>
> (Ministry of Education, 1998: 16)

And, in the third quotation, another element of competition is introduced. Private providers are to be placed on an equal footing with public providers:

> From 2000, all domestic students studying approved courses will be subsidised on the same basis, whether at TEIs [Tertiary Education Institution (state-owned)] or PTIs [Private Training Establishment].
>
> (*ibid.*)

Overall, there is a clear implication that the government is attempting to improve tertiary education through the creation of, and exposure to, market-place conditions and forces. The "freedom" is to compete in the market-place.

The third theme, that everybody ought to have the opportunity to participate in education so that they can contribute towards improving the country's economy, (utilise all/equity), is reflected in the Minister of Education's opening sentence in the foreword of *The National Qualifications Framework of the Future*. He states:

> More importantly, we all need to maintain and improve our skills throughout our lives.
>
> (Bradford, 1999: 2)

Another statement in the Minister's forward seems to suggest the fifth theme, that economic needs are met in the same way as human needs, (economic equals human). He states:

> In the knowledge economy of the future, the capability of our people will be the key to our advantage and prosperity. We cannot afford to settle for second best.
>
> (*ibid.*)

The link between human well-being and economic well-being is implied, mainly in the words "advantage and prosperity", rather than stated directly.

Following the Minister's foreword, the first paragraph of the main section of the same document makes the link between economic and social well-being more explicit by pairing the two terms as though they were equivalent:

> Excellence in education will be the key to our economic and social well-being.
>
> (Ministry of Education, 1999: 4)

The statement also emphasises the importance of excellence and thereby reflects the fourth theme: that educational excellence, innovation and accountability are required for successful competition in the market (excel/innov/account).

Conclusion

No change was found to the economic themes; that is, to the economics paradigm through which it seemed education was being conceived.

Analysis of official documents: Conceptualisations of teaching and learning in the period 1996-1999

The four continuums that were used in Section One, as a frame for the analysis of documents written at an earlier time, are used again in this section. Changes are revealed in all four, but some are only small changes.

1 The means are separated from the ends of teaching/learning

<----------->

The means are integrated with the ends of teaching/learning

As noted previously, there was a hint of a change in 1994 when the NZQA stated that, "standards being developed do include process elements" (QA News, 1994: 5). However there was no indication of a change to its advocation of an objectives/outcomes model.

The second paragraph of the Government's 1997 Green Paper, *A Future Qualifications Policy for New Zealand: A Plan for the National Qualifications Framework* (Ministry of Education, 1997a), provides an indication that the means still are conceived to be separated from the ends of tertiary education, and that they ought to be so separated:

> ... this paper is concerned with arrangements for recognising students' achievements ('outcomes'). The processes of learning and teaching, which may lead to achievement, are different matters not within the scope of this paper. The focus is on qualifications (recognition of achievement) rather than teaching and learning (processes leading to achievement).
>
> (Ministry of Education, 1997a: 2)

(The statements in the parentheses in the above quotation are the Ministry of Education's.)

Consistent with an objectives/outcomes model, the statement implies that achievement is recognised by the end reached, not by the quality of the processes that students develop, as might be expected in a process model.

The Minister of Education (Bradford, 1999) indicates in his foreword to the 1999 White Paper, *The National Qualifications Framework of the Future* (*op. cit.*) that he, too, conceives the means to be separated from the ends of education. He refers to employers participating in the development and provision of qualifications (which should be considered in the light of the

discussion of the role of ITOs, in Section Two above) and to providers developing the means - new means in this instance:

> The policies outlined here ... // ... will provide opportunities for employers to participate in the development and provision of qualifications which meet their needs. They will also enable tertiary providers to explore new and important areas of education and research, and offer new means for people to gain skills, knowledge and qualifications.
>
> (Bradford, 1999: 3)

Another statement in the same foreword indicates that the Minister of education conceives education to be lifelong and to involve building-on skills in a linear progression from existing skills to higher levels. It is a conception which is compatible with the NZQA's model in which the means (provided by teachers) are separated from the ends (determined by employers) of education. He states:

> In an environment of lifelong learning, it will also be important that New Zealanders are able to build their skill levels without having to unnecessarily repeat learning they have already completed.
>
> (*ibid.*: 2)

Thus, despite the NZQA's 1994 claim as above that, "standards being developed do include process elements" (NZQA, 1994, *QA News*: 5), evidence from the documents analysed in this section does not reveal any substantive change to the way in which teaching and learning are conceptualised. Thus the placement of the conceptualisation on this continuum should be at the left-hand end, not slightly to the right of the left-hand end, as previously.

2. ***Learning/knowledge/skills are capable of precise linguistic description, pre-specification and measurement***

<----------->

Learning/knowledge/skills cannot be readily captured in linguistic description, pre-specified and measured

In *Learning and Assessment: A Guide to Assessment for the National Framework* (NZQA, 1996), as discussed previously in Chapter Three, the NZQA introduced a modification to its definition of standards and, by doing so, effectively acknowledged that describing most standards in a precise manner is

problematic. The publication defines two different sorts of standards - *transparent* and *agreed* standards:

Transparent standards correspond with the clear, unambiguous standards of the past:

> In some unit standards the criteria are so clear and unambiguous that they can be interpreted consistently by all assessors. These have been called transparent standards.
>
> (NZQA, 1996: 9)

Agreed standards (the form that the NZQA believes most standards take) are derived through consultation amongst assessors and moderators:

> However, most unit standards do not stand alone. The level of performance that is considered acceptable will be established only in practice, by consultation and agreement among assessors and moderators. These are called agreed standards.
>
> (*ibid.*)

It is thus acknowledged that without consultation most standards will be ambiguous. However, consultation may establish a shared meaning for ambiguous so called "standards", but it also changes the character of the "standard" to a normative criterion or criteria. As Codd (1996b) points out, by introducing *agreed standards* the NZQA actually introduced norm-referenced judgements. He argues that the notion of *unit standards* is fundamentally flawed.

The following statement in the Government's 1999 White Paper, *The National Qualifications Framework of the Future* (*op. cit.*), indicates that writing precise descriptions of outcomes may be problematic. The statement occurs following a description of format adopted for the presentation of information on courses registered on the National Qualifications Framework. It implies that not all outcomes can be captured precisely in verbal descriptions and, further, that outcomes can be described in different ways:

The specific information provided by level, credit and detailed field will also help to balance uncertainties which can arise from the different ways in which qualification outcomes can be described.

(Ministry of Education, 1999: 22)

A change to the notion of the *learning outcomes*, which Hood (*op. cit.*) uses synonymously with standards in a quotation in Section Two above, is evident in the 1999 Government White Paper, *The National Qualifications Framework of the Future* (*ibid.*). learning outcomes are defined as:

... clear statements about what students know and can do when the study is completed.

(*ibid.*: 21)

There is no mention in the above quotation of the need for learning outcomes to be measurable. Instead, they are to "improve understanding about the qualification" and to "allow a meaningful comparison to be made with other qualifications" (*ibid.*: 22). This difference may reflect a change in NZQA's previous requirement that "all assessment in the Framework is standards-based" (NZQA, 1993: 13). Other forms of assessment, such as the "new *achievement standards*" (NZQA, 1999.: 33) in the schools are to be accepted in the future. Whatever the reason, there appears to be less emphasis upon the need for outcomes to be measurable.

Thus it appears that the conception of outcomes (that is, learning, knowledge and skills) has changed. Previously it was conceived that outcomes must be measurable, whereas in the "new" conception more abstract outcomes that may be difficult to describe and measure (by means of standards-based assessment) are permitted. Thus on this continuum, the conceptualisation of teaching and learning has moved towards the right. How far towards the right is not clear; perhaps not far from the centre point, but still on the left side.

3. Knowledge comprises the sum of discrete components

<----------->

Knowledge has holistic characteristics over and above the sum of its separate components

The conception, as described above [Section Two (2)], that qualifications could be constructed in building-block fashion was, in Chapter Four, the subject of criticism because it did not take account of the holistic properties of knowledge over and above the sum of the component parts.

The following quotation from *A Future Qualifications Policy for New Zealand: A Plan for the National Qualifications Framework* (*op. cit.*), indicates a change which aims to take account of the holistic character of knowledge in course design:

> ... no qualifications - including those based on unit standards - are satisfactorily described by their component parts only. Outcomes stated for the whole qualification capture the overall achievement expected of students.
>
> (Ministry of Education, 1997a: 22)

This change is retained in the Government's 1999 White Paper, *The National Qualifications Framework of the Future* (*ibid.*). It states that amongst other requirements:

> Learning outcomes must be specified for courses as well as for qualifications as a whole.
>
> (*ibid.*: 22)

The change takes account of the notion that the outcomes for a qualification or total course may be different from the sum of the outcomes from the component parts, but it does not take account the same notion applied to unit standards. Combining elements of knowledge, even within a unit standard, is likely to give rise to holistic characteristics over and above the sum of the individual elements. And, as the case studies presented in the next chapter illustrate, holistic knowledge is important to motor mechanics and nurses. Also as Stevenson (*op. cit.*) and Ramsden (*op. cit.*) point out, holistic knowledge is important if students are to develop "deep" understanding (see Chapter Four).

Thus, the analysis of documents suggests the conceptualisation of teaching and learning has changed from not recognising that holistic knowledge is more than the sum of its parts, to recognising this in a limited way. The conceptualisation of teaching and learning on this continuum has moved towards the right. It probably could be fairly represented placed between the left-hand end and the centre point.

4. Learning/knowledge has a universal application

<----------->

Learning/knowledge is related to its context (including its political context)

In Section Two (4) above, it was suggested that the NZQA conceives knowledge to exist apart from people and to be transferable across different contexts; and that, in this sense, the NZQA conceives knowledge to be universal.

The notion that knowledge is transferable from one context to a different context is retained in the Government's 1997 Green Paper, *A Future Qualifications Policy for New Zealand: A Plan for the National Qualifications Framework* (*op. cit.*). For example, it refers to *credit transfer*, whereby credit gained towards one qualification can be counted towards another. It states:

> Where outcomes, level and credit coincide, it can be expected that credit transfer will be agreed.
>
> (Ministry of Education, 1997a: 39)

Also, the Government's 1999 White Paper, *The National Qualifications Framework of the Future* (*op. cit.*) includes the transferability of unit standards in a summary of the "positive results" achieved by the NZQA and associated qualifications policies:

> Unit standards are also easily transferable, and can contribute to a number of qualifications, thus giving students and employees greater flexibility to gain qualifications and raise their skill levels.
>
> (*ibid.*:9)

Further, the notion that learning is transferable is implied in the following criterion included in a list of the National Qualification Framework's objectives:

> facilitating flexible learning pathways between different learning environments
>
> (*ibid.*:9)

And confirmed in the following statement relating to "credit transfer":

> The portability of unit standards across national qualifications remains unchanged.
>
> (*ibid.*:27)

To this point it appears that knowledge still is conceived to exist in a decontextualised, universal form. But discussion relating to a proposed expansion of the National Qualification Framework to include the full range of tertiary courses suggests a change in thinking. It is explained that:

> Under the NQF credit transfer is automatic because unit standards assessment decisions are identical wherever they are used. However, transfer between qualifications that are similar but not identical is more complex. Once the NQF is expanded to include the full range of tertiary qualifications in varying formats, credit transfer will not be quite so straightforward.
>
> (*ibid.*:27)

Leaving aside for the time being the problem of the implicit assumption that "unit standards assessment decisions are identical", the problem referred to in the above statement may, at first, appear to be related to the different formats used to describe different qualifications. But the following statement indicates the problem stems from the fact that qualifications are designed for different purposes:

> But because qualifications have different purposes and content, they can not be automatically or universally portable
>
> (*ibid.*:28)

The quotation thus suggests a change towards the conception that knowledge is related to its context, rather than decontextualised and universal. Overall, though, this must be considered as only a small indication of change.

Thus it appears that the conceptualisation of teaching and learning has moved towards the right on this continuum, but not very far. It still would be near the left-hand end.

Summary and conclusions

The analysis of selected, recent policy documents relating to polytechnic education (1996 to 1999) suggests some changes from the way in which teaching and learning were conceptualised in an earlier selection of similar policy documents (for the period 1995/1996). The more recent documents reflect the conceptions: that teaching and learning include outcomes that are difficult to describe as well as those that can be described clearly; and that, in some situations, knowledge may have a holistic form which is more than the sum of its components. However, the documents still reflect a means-ends conception of teaching and learning and only a slight modification is indicated to the conception that knowledge has a universal character.

CHAPTER SUMMARY AND CONCLUSIONS

Four separate analyses of official documents were carried out.

The first aimed to discover whether, at the time of the interviews in the study, the documents reflected indications of an economics paradigm underlying the policies. Five themes which were found. They were: (1) That education is the instrumental means to economic ends; (2) that there ought to be "freedom" of choice in the education market-place; (3) that everybody ought to have the opportunity to participate in education so that they can contribute towards improving the country's economy; (4) that educational excellence, innovation and accountability are required for successful competition in the market; and (5) that economic needs are met in the same way as human needs.

The second analysis aimed to uncover conceptualisations of teaching and learning reflected in the documents, at the time the interviews in the study (1995/1996). Findings suggested a conceptualisation of teaching and learning that included the notions: that the ends of teaching and learning could be, and ought to be, separated from the means; that the outcomes of teaching and learning could be accurately described, pre-specified and measured; that knowledge comprises the sum of its component parts; that learning proceeds in a linear path as components are added incrementally to the student's store of knowledge; and that knowledge has a universal form, independent from its context, including its human context.

The third analysis aimed to discover whether any changes to the economics paradigm were discernible in more recent documents (1996 to 1999). No changes were found.

The fourth analysis aimed to discover whether changes to the conceptualisation of teaching and learning were discernible in more recent documents (1996 to 1999). Changes found included a move towards accepting learning outcomes that could not be readily described and measured; a move towards recognising that knowledge has holistic properties over and above those of the sum of its component parts; and an indication of recognition that knowledge is related to its context. The conception that the ends could be, and ought to be, separated from the means of education remained unchanged. However, the problem associated with this conception had been acknowledged by the NZQA..

Thus on the first of the four continuums (separated <—> integrated) the placement of the conceptualisation of teaching and learning moves to the extreme left-hand end; on the second continuum (precise description/measurement <—> more than readily captured), the placement moves from the extreme left to near the centre, but still on the left side; on the third continuum (discrete <—> holistic), the placement moves

from the extreme left to about half way across on the right side; and on the fourth continuum (knowledge universal <—> knowledge related to context), the placement moves from the extreme left a little towards the centre, but is still quite close to the left end.

CHAPTER EIGHT

ANALYSIS OF CASE STUDIES

INTRODUCTION

This chapter analyses, interprets and draws conclusions from the six case studies carried out as part of the present study. As stated in Chapter Two, three of the case studies are of nursing lecturers and three are of automotive engineering lecturers.

Section One analyses the case studies of the three automotive engineering lecturers. Inferences about how each lecturer conceptualises teaching and learning are teased out in relation to each of four continuums (which were introduced in Chapter Two). Conclusions are then drawn from a comparison of the conceptualisations from the three cases.

Section Two analyses the case studies of the nursing lecturers following the same procedure as for the automotive engineering lecturers.

Section Three analyses all six case studies by comparing the conceptualisations of the two groups. Again, this is accomplished in terms of the four continuums.

Theoretical basis of the analysis

As discussed in Chapter Two, the analyses are based upon principles derived from discourse analysis and, for each case, are carried out under four continuums; interpretations of the cases are underpinned by the combined theoretical perspective of critical theory and poststructural analysis; and the focus, that is, the

boundaries, of the cases are discourses related to how each lecturer conceptualises teaching and learning.

SECTION ONE : CASE STUDIES OF THREE AUTOMOTIVE ENGINEERING LECTURERS

INTRODUCTION

The faculty in which the automotive engineering lecturers are located is multidisciplinary, and includes a range of trade and science courses. Two of the lecturers focus the discussion of their teaching practice on a lesson with a full-time course leading to the NZQA's award of National Certificate for Entry to the Automotive Trades. They also comment, from time to time, on their teaching in other classes. The third lecturer discusses a lesson with a block-course provided for apprentice motor mechanics. He also comments on his teaching practice with the one-year, full-time National Certificate in Automotive Engineering course

The automotive engineering courses are run according to the Motor Industry Training Organisation's (MITO's) and the NZQA's requirements. At the time of the study, these courses were funded through the MITO. Detailed requirements for the National Certificate for Entry to the Automotive Trades were set out in an MITO manual which was used by the lecturers as a written curriculum. Similar material provided by the ITO was also used as a curriculum for the motor mechanics' course. The polytechnic concerned had not, at that time, developed its own written curriculum from the MITO's requirements, but this was planned in order to meet the NZQA's requirements. Apart from not having developed its own written curriculums from the ITO's material, the polytechnic was running the courses in accordance with the NZQA's requirements.

The analyses of the three case studies in this section follow:

ANDY : ANALYSIS OF CASE STUDY

Background

After completing his apprenticeship and qualifying as an automotive engineer, Andy worked as a motor mechanic in the automotive engineering trade for seven years, before gaining a teaching appointment in 1971.

Since his first teaching appointment, Andy has had considerable experience as an automotive engineering lecturer and course administrator in a polytechnic. He also spent two years teaching automotive engineering in the Pacific Islands, during the 1970s.

Andy holds an Advanced Trade Certificate in Automotive Engineering. But, despite his considerable teaching experience, he does not hold a teaching qualification. Had he been appointed to a teaching position in a polytechnic on or after 1 February 1974, Andy would have been eligible for, and indeed required to complete, the twelve-week tutor-training course that was established on that date and made obligatory for new tutors/lecturers to complete over the first few years of their appointment (except for those who already held a teaching qualification or equivalent). Thus, unlike many polytechnic lecturers appointed more recently, Andy has not completed the basic tutor training course. However, he was offered, and took up, the opportunity to complete four weeks of the course.

The lesson which Andy chose as the focus for discussion in the third interview was a workshop session in which the students on the National Certificate for Entry to the Automotive Trades (NC) course worked on self-paced tasks as part of the unit on the use of hand-tools (Unit 228: Use of Hand Tools).

Analysis

1. The means are separated from the ends of teaching/learning

<--->

The means are integrated with the ends of teaching/learning

Andy's description, as follows, of how he integrated into his teaching practice an opportunity for teaching that arose from an occurrence in the classroom (a "teachable moment") is, in effect, an example of how he integrates the means with the ends in his teaching practice. Sometimes a teachable moment may involve simply a variation from a planned lesson and the inclusion of a point that had not planned. At other times it may involve the inclusion of something that is considered to be important, but not included in the curriculum. In this instance, Andy describes a teachable moment involving the latter situation, when the point that he introduced was not included in the curriculum. It involves a cylinder head gasket that had been put on back to front. It provided an opportunity for Andy to introduce a point concerning the cost of an avoidable error:

.... he'd just taken the cylinder head off and I walked over and I happened to notice that the previous person who had done the job had put the cylinder head gasket on back to front ... [laughs]. Rather bad news ...//... so I pulled the class over and I didn't tell them and said "You know what went wrong here? What happened? ... What was wrong?" And I hadn't spoken to anyone at that stage ...and they picked it up fairly quick that the gasket was round the wrong way...So then we had a discussion on how easy it is to do it and what if it was a fancy modern engine that takes ten hours to put the head on, then you found it was wrong with the water running, and had ...to take it all out? - and that's 20 hours down the tube? and who's going to pay for that? - So you draw the whole thing out and it's only because I saw something...odd that had happened.

(E1/4: 14)

Andy also describes another similar example where a student had put a crankshaft in back to front and was having trouble fitting the end covers:

... so I called the class around and pointed out how easy it was to put things back to front ... and how difficult it was to put the end housings on if you had it back to front... And ah I should have checked him out earlier but it ah was a crazy fault...Everyone - we all had a laugh about it...just did it in fun...They're only beginners - you don't - there's no point in putting a knife into them at all is there?...You turn it into a fun situation.

(E1/4: 34)

The above quotation also shows not only how Andy varies the planned "ends" of his teaching, but also how he adjusts the means - in this instance by introducing humour into his lesson. He does this in order establish positive rapport with his students, which he believes will be beneficial to the students' learning. Another example of the use Andy makes of humour involves the use of anthropomorphism:

when someone in the workshop starts beating something with a hammer when they shouldn't ... I start giving off cries of pain: " Ouch! Oooh ! Ow! " [laughs]

(E1/4: 406)

The following quotation shows that Andy does not simply accept the outcomes of the course specified in the official curriculum. Because his and his colleagues' professional reputations are "on the line", Andy wants to ensure that students are "up to a reasonable level". In other words, they vary the ends in accordance with their own professional judgement of what the students need to learn:

.... and none of us are very keen to put our signature to that unless we are fairly sure that the guy is up to a reasonable level...that's where it all locks in because...you're putting your name on the line.

Interviewer:
Yes, yes - and you don't do that lightly?

Andy
No, no - no not when you're well known around town - at every blinking garage! [laughs].

(E1/4: 245)

Despite the indications above that in practice Andy, intuitively if not explicitly, conceives teaching/learning as a process in which the means are integrated with the ends, at other times he appears to conceive teaching/learning more as a linear progression through various stages of difficulty. For example when asked what learning means to him, he states:

It's very elementary to start off with but lifts from that level quite quickly. We assume that everybody knows - not much [laughs] ...But very quickly those who do know are going to work - move on to the next stage...

(E1/1: 310).

Yet, in the same statement he also says that learning is:

..becoming aware and having a concept of the practicalities and the theoretical aspects of the subject in mind

(E1/1: 310)

Andy use of the word "becoming" in the above quotation suggests that he conceives learning as a process, rather than the attainment of an end. Further, his statement suggests that he conceives learning as something that occurs within a student's mind rather than externally and that it involves the integration of theory and practice or mind and body.

In the next quotation, he speaks of learning continuing without ever achieving the "total". The implication, despite another reference to "level", is that learning is a continuing, open-ended process:

...and I feel as though you never ever completely succeed at anything at all...You can never say that you've achieved total... it can never be like that

(E1/1: 381)

Andy expands on this notion:

... I don't know it all ... quite often I learn something every day.

Interviewer:
So when the students have reached the learning outcomes in our curriculum ...they're not really ...?

Andy:
It's only the beginning in my opinion - it's only the beginning...

Interviewer:
... the learning thing goes on?

Andy:
Yes, yes... we have further training...and it brings them up to a certain level but after that there's no stopping to it . It just goes on. Plus you have to keep up with the advances on cars - the technology is changing all the time. And you have to keep yourself up to date with that - so it never stops.

(E1/3: 87)

The explicit message in Andy's next statement is to do with students realising there is a need to continue learning beyond the course. The statement, arguably, also implies that students, by realising the need to continue learning, are learning about learning itself; or, in other words are *learning to learn*:

.... and I think it's rubbing off on the students that they're only starting in the game and there's lots of experiences that they're going to go through and it's learning experiences all the way...It's not just books and schooling and that side...it's the experience of life going through with working on these different cars and models and trucks and Lord knows what ....

(E1/4: 261)

Andy's use of the phrase "rubbing off on the students" suggests that this aspect may be taught indirectly through a variety of "hidden" influences rather than through didactic teaching. It might also indicate that Andy is unsure about how it is taught or whether it ought to be taught at all.

Summary

Andy describes how he integrates "teachable moments" into his teaching practice. In effect, he integrates the means and the ends of teaching and learning. Andy also describes using his professional judgement to vary the official outcomes (ends) of his teaching programme, when necessary in order to ensure that his students come up to a "reasonable" level. A reference he makes to what amounts to an attitude towards learning "rubbing off on students" suggests that he is aware, perhaps only vaguely, that some teaching/learning occurs by "hidden" means.

Andy indicates that he conceives learning to be an on-going, open-ended process that occurs in students' minds and includes both practical and theoretical aspects. On the other hand, he also indicates that he conceives learning as a linear progression through levels.

2. ***Learning/knowledge/skills are capable of precise linguistic description, pre-specification and measurement***

<----------->

Learning/knowledge/skills cannot be readily captured in linguistic description, pre-specified and measured

Andy's comment, as follows, indicates that he understands that the assessment of skills is not as straightforward and unambiguous as might be supposed (by the NZQA, for example - see Chapter Three):

... and we're marking that - we're going around marking it ... and the hard one is where you go back and someone's done the job three times and you find someone else has marked him the previous three times and your interpretation of what he's done isn't very good and he's been marked fairly well up.

Interviewer:
So what do you do then?

Andy:
... Well you talk it through with the boy and where he went wrong, and how did they miss this...and try to smooth things over because, of course, you can get yourself into a very awkward situation with that. And then I try and have a talk with the tutor and get it so that we're all working to the same standards. And this is the difficulty when you've got five or six people all teaching basically the same class - it's to set one standard isn't it? - to stay with one fixed idea all the way through - but everyone is different, we're all different and we all wander off the so called path ...My path is correct - everyone else's is wrong isn't it! [laughs] So you discuss things and you sometimes come to an agreement about how it should be done ... slight variations it's only slight. - it's not big things.

(E1/1:55)

Andy recognises that defining and assessing overall competency, which he believes to be an important aspect of a mechanic's knowledge, is difficult:

.... it starts to show as ability and competence... it starts to show in the individual. You can start to see it... but .... it's difficult to analyse something like that isn't it? It's an overall feeling for the ... whole structure

(E1/4: 432)

That Andy believes overall competence is important knowledge for a motor mechanic is relevant by itself (and is recorded under the next continuum). His elaboration of overall competence is of particular relevance here. He refers to motor mechanics requiring "feeling" or "empathy" for the parts of a car and "their (the parts) relationship with each other". What he describes is, in effect, the development of intuitive knowledge or *knowing in action* (Schon, 1987 -

see Chapter Four). In this respect, Andy's goal is for qualified motor mechanics to be able to diagnosis a fault in a motorcar immediately, from the sound of its motor, and, conversely, to judge from the sound whether a car is running well:

.... so to give you a full understanding and feeling for - for the bits and pieces in a motorcar. Well this is what I maintain a motor mechanic is in that he develops - is it empathy for all the parts throughout and their relationship with each other? ...and you can stand at a doorway and half-a-dozen cars go past and you can diagnose what's wrong with them from the noises that they're making as they go past ...because you have a feeling for all the components and so on .(E1/4:140)

Andy also describes how he, himself as a lecturer, makes use of what is, in effect, intuitive knowledge to evaluate his teaching practice:

... you have a feeling of the flow of how everything is going and that's from the reaction of the class and the people and the type of job that's going on and whether it's successful and whether tools - things are getting broken and murdered and all the rest of it you see ...So you have a feeling whether you're actually succeeding in getting something...to the normal flow of the pattern of work ... be it in the classroom or be it in the workshop.

(E1/4: 463)

Andy adds to his description:

Oh yes anyone who's taught - two or four hours in a classroom soon is aware if things are going okay or not. [laughs]... When it's going okay, the other thing is that the time has gone so quickly that ... there is other things that you could have done but the time has run out...And the other one is that - the one that... when things aren't going so well, they all get up and rush out the door at ninety mile an hour [laughs]. And the other one is they hang in behind afterwards and ask more leading questions about everything - but is that you or is that the interest level of the lesson you are doing, I'm not sure?

(E1/4: 489)

Another form of knowledge that Andy requires motor mechanics to acquire is the kinaesthetic response involved in using various tools appropriately. Again, this form of knowledge defies precise linguistic description and accurate measurement of the sort required by an objectives / outcomes curriculum model. Andy describes it as a "feeling" for doing tasks that students must develop:

...if you can actually give them the things - and play with them, and fiddle with them, and drop them, and break them, and all the rest - it - it develops the feeling for doing these tasks. A lot of it's only swinging spanners ... it's only tightening things up and undoing things - a lot of it basically comes back to that ... but there is skills and feeling for all that - the size of the thread, the diameter of the bolt, the type of spanner and the angle you're using it at - there's lots of physical things to learn there - it comes quickly

(E1/1: 329)

Using the example of teaching his students to use a feeler gauge, Andy describes how such a skill is taught: Students practise under the supervision of a lecturer who provides feedback until each student develops the ability to judge the "correct" feeling:

.... and it's the degree of friction, as it's sliding in and out, that tells us whether it's right or wrong and I spend quite a bit of time with students doing that - saying, "No this one's too loose, it should be a little bit tighter." and [they say], "Aw no, I thought it was okay." And there's a difference of opinion ...it makes things very interesting because we gradually get them up to everyone's doing it pretty much the same which is what it should be...And that's quite a skill to develop ...quite an interesting little skill ...and all it is a feeler blade sliding in a gap ...

Interviewer:
So there's judgement of it being right?

Andy:
Mm there's judgement. All of us - so we get about the same feel of ... what's tight, what's loose and what's correct.

(E1/1: 345)

The criterion against which the student's performance is judged (rather than measured) is Andy's judgement, not a precisely described standard. The knowledge involved is similar to Schon's (1987) artistry (see Chapter Five), rather than the precisely described and measurable knowledge of NZQA's standards (see Chapter Three).

Andy also describes "feelings" (attitudes and personal qualities) that he believes motor mechanics ought to possess or develop. He adopts the metaphors of "murdering" and "abusing" to explain his meaning:

.... Yeah that starts to show later perhaps, it's a depth and feeling - if you can use feeling towards the engines and so on - that you're not going to murder things as some of the young ones think it's all about. It doesn't show quite so much at this stage...with the engineering type work we're doing because everyone's pretty much at the one level.

(E1/2: 386)

Interviewer:
Can you explain a little bit more of your meaning of "murder"?

Andy:
Murdering engines [laughs] - abusing... A motor mechanic usually will not drive an engine to destruction...and you don't abuse [it] by over-revving - that ruins a motor. Motor mechanics do a bit of that but they know the limits - they don't go too far - ... because you can ruin the

thing you see...To me the idiot ones are those who just couldn't care less and just drive them to destruction - I can't see them becoming a decent motor mechanic at all myself...

Interviewer:
So that's something that you try to get across to the students?

Andy:
A little, because that's the personality of the person - you can't change it too much - you can point out the error of their ways and what the feeling of the trade - and we had a little session today with them about abusing cars and how the proprietor of a garage would think about it because of his customers. And then [we] discussed how the customer would feel if he viewed his engine or car being abused by somebody else

(E1/2: 393)

Andy expresses some uncertainty about the extent to which he can effect a change in a student's "personality". But in the next quotation his intention that students *shall* develop an attitude of respect for engines, tools and equipment and not to "abuse" them is unequivocal:

Yes yes it was quite forceful today [laughs]. That was the first day - there's been a few lectures I can tell you [laughs] .... And we have to step on that right from the beginning before they start abusing our equipment...We'd rather everything lasted well.

Interviewer:
... you mean the tools and so on ...?

Andy:
Yes, yes everything you can murder...even a spanner - you can put a piece of pipe on it and increase its leverage but I mean it's not doing the spanner much good and probably the bolt's being over-tightened... So that's abuse...that's murdering...to me as an engineering type.

(E1/2: 410)

Andy, himself, refers to the difficulty inherent in identifying exactly what it is that he means by not to "murdering" or "abusing" tools, equipment and engines:

.... over tightening things and revving motors and so on ... and that sort of thing - it's ah a bit hard to define isn't it?

(E1/2: 422)

They are not outcomes that could be taught in accordance with an objectives / outcomes model (see Chapter Three). Patience is yet another attitude that Andy believes is important for a motor mechanic to learn. It is another outcome that must be considered to be problematic for the objectives / outcomes model:

.... patience... Well, in the beginning they think they can do these tasks in five minutes flat and "What do we do next sir?" And it's not like that - if you want to get down to accuracy - and this is filing a piece of metal to the square - till it's on a square...and you have to do

that...and I've spent quite a bit of time with them just getting them to realise and understand how you check a piece of metal for flatness ... and how you check it for squareness and how I expect a high degree of accuracy ...

(E1/2: 460)

Summary

Andy describes difficulties involved in assessing what might often be considered straightforward, practical skills. Different lecturers interpret the standards in different ways. Assessing overall competency is also problematic, yet Andy believes this is important knowledge for a motor mechanic. In his comments on overall understanding, Andy describes the "feeling" or "empathy" that he believes motor mechanics ought to develop for motor vehicles and the way they operate. It is a form of intuitive knowledge. He also describes what amounts to intuitive knowledge that lecturers develop about their teaching practice. Another form of knowledge which Andy describes is, in effect, kinaesthetic knowledge. It is required by students to perform some skills. Judgement involving artistry rather than measurement is required to assess kinaesthetic skills. Andy also talks about teaching students attitudes, which are "caught" rather than "taught".

3. Knowledge comprises the sum of discrete components

<----------->

Knowledge has holistic characteristics over and above the sum of its separate components

It already has been noted that Andy conceives that holistic knowledge of the way a cars parts relate together is important knowledge for a motor mechanic. He believes that the present course "doesn't go to the depth of what we had before". It was restructured to meet the NZQA's and the MITO's requirements. Andy states:

.... it's probably the depth of each individual unit in comparison with what we were teaching before because it's rather shallow - it only scrapes through on the surface - it's a shallow system - it doesn't go to the depth of what we had before with the study and the knowledge of each individual unit in the motorcar.

(E1/2: 09)

Andy gets "less personal (professional) satisfaction out of it now" .(E1/2: 31). He explains that the problem lies with unit system (discrete components) which does not provide the overall (holistic) knowledge required by motor mechanics to diagnose faults:

..... what I was talking about was getting more the depth of understanding...or getting the view of the whole big picture...Whereas at present it tends to be just parts of the big picture... without having the whole mass.

Interviewer:
... if you've got the whole mass you've got an understanding there?

Andy?
A better understanding - your diagnosis and the rest - faults and so on - in my opinion can be better ... but that's deleted because the machine is taking over.

(E1/4: 97)

Andy's reference in the above quotation to the machine taking over is to the modern diagnostic equipment available, such as that for "tuning-up" motor vehicles. He is concerned that the equipment is replacing the need to develop skilled motor mechanics with the ability to understand how all the various components come together in a smoothly operating vehicle.

Further on in the conversation, Andy explains how the curriculum specifies the various elements of the tune-up that are to be taught "but doesn't actually teach how it all blends together in one final result at the end" with the motor running "sweet":

.... something like giving a car a tune-up - giving the car a tune-up and the way that it's supposed to be taught is you have all these units and each one's divided up into bits and you teach all these bits but it doesn't actually teach how it all blends together in one final result at the end, if the car runs smoothly...It doesn't emphasise that. Whereas we do. We link it together and then emphasise that the motor's got to run sweet...at the end of it - it goes through all the bits of how to do it - but it doesn't say that it's all linked together and the end result should be a beautifully, smooth-running engine .... but if you're just teaching the bits you're not going any further ... your end product is not very good. ....

(E1/4: 119)

Andy and his colleagues' response to what they perceive as a deficiency in the depth of knowledge in the official curriculum is to add to it - "to teach a bit

further ... to teach the whole, overall picture", despite the "tightly controlled" nature of the "performance criteria" (in the unit standards). He explains:

> This is the difficult part because the assessments are very tightly controlled and ...the performance criteria are tightly controlled and **we** [Andy's emphasis] try to achieve everything ...that's asked of us from the MITO - the Motor Industry Training Organisation...But over and above and beyond that, of course, we teach a bit further and we try to teach the whole overall picture ...it's all got to blend together so that, in the end, the motor or whatever it is, is running sweetly...so there is an overall feeling about the whole thing...It's not just... pigeonholes and filling them up - it's not that ....
>
> (E1/4: 163)

An implication of Andy's statement, "it's all got to blend together so that, in the end, the motor or whatever it is, is running sweetly", is that holistic knowledge comprises more than the sum of its individual components - there is additional understanding to be derived from the overall integration of knowledge (see Stevenson, 1993; in Chapter Four). Also Andy's phrase, "it's not just ... pigeonholes and filling them up" bears some similarity to the Freire's (1970) banking metaphor, as described in Chapter Four. Certainly Freire and Andy would agree that the prevalent form of teaching and learning is bereft of true understanding, even if their views of true understanding were different.

Andy provides the following example of an addition which he made to the official course:

> Yes well the...units of learning don't say anything very much about the transmission of a motorcar - that means the gearbox and the differential and that side - and there's very little in there so we actually... do gearboxes and we do transmissions and we do a little bit on differentials - so as to bring them up to some understanding at least about those parts of a motorcar.... The new system doesn't impress us ... greatly - in some areas ...without knocking it too much, you know - I feel as though there's some areas that can be improved and so we improve it.
>
> (E1/1:181)

Andy's next statement again suggests the conception that overall competency, in which the knowledge is integrated and "the end product's running sweetly", is more than knowledge from each separate "step". Assessment of each step separately does not mean that the motor will be "running smooth at the end":

.... it's competency-based ... programmes that we're running - now that to me is after you've done it a number of times, you're getting quite good at it - but they of course think if they can stumble through once, they've achieved the performance criteria ... but it's not because you haven't got the other side of the picture. You haven't got the competency which is going through each step ..... still sticking with the rules of the assessment ... flowing through it ... without any bother and achieving the objectives so the motor or whatever it is runs smooth at the end. So... there's the two sides - you're achieving the little bits but...you're also - the overall picture - that the end product's running sweetly.

(E1/4: 173)

Summary

Andy believes that holistic knowledge is required for the depth of understanding that motor mechanics ought to develop; for example, to diagnose faults. Overall knowledge, as described by Andy, is more than the sum of the parts making it up. To help his students develop holistic knowledge, Andy adds to the official curriculum. At the same time he is careful to include all that is required by the ITO.

4. Learning/knowledge has a universal application

<----------->

Learning/knowledge is related to its context

(including its political context)

The interviews with Andy did not lead to discussion which explored the above question. However, in retrospect, the following comment made by Andy seems to suggest that, at least, he intuitively conceives learning/knowledge is influenced by the way people think:

.... get the learning processes still carried out even though there may be differences between ...the thoughts of each individual

(E1/1:301)

The implication of the above statement is that knowledge is not universal, because how it is seen differs from one person to another. In other words, knowledge is shaped by personal theories, that, in effect, are the personal context in which the knowledge is understood or given meaning. Further discussion with Andy is required to clarify his meaning.

Summary

Andy's comment suggests the he conceives knowledge to be, to some extent at least, what is perceived by the person involved. It is not therefore universal. Further discussion with Andy is required to clarify his meaning.

Conclusions to the case study

From the perspective of the frame (the four continuums) adopted for the purpose of analysing the case studies, Andy's conceptualisation of teaching and learning is inferred to include the conceptions that:

- Learning is a continuing, lifelong process.
- Teaching and learning involve a process in which the means are integrated with the ends.
- Teaching and learning involve a linear progression through levels.
- Teaching and learning include knowledge and skills, such as some "straightforward" skills, kinaesthetic skills, attitudes, feelings, and intuitive knowledge, which are not amenable to precise description, pre-specification and accurate measurement.
- Holistic knowledge is important to understanding and is more than the sum of its individual components.
- Knowledge is influenced by the perspective of the knower (its context).

Thus on the first continuum (separated <---> integrated), Andy's inferred conceptualisation is towards the right insofar as he conceives teaching and learning to involve a process in which the means are integrated with the ends. But because, at times, he also seems to conceive teaching and learning as a linear progression through levels, his conceptualisation, in the researcher's judgement, ought to be placed over a range on the right-hand side of the continuum.

On the second continuum (precise description/measurement <---> more than readily captured) Andy's inferred conceptualisation is close to the right-hand end of the continuum, because he conceives that learning/knowledge/skills comprises considerably more than that which is amenable to precise description, pre-specification and accurate measurement. Further, he conceives that even straightforward skills can pose difficulties in regard to accurate assessment.

On the third continuum (discrete <---> holistic), Andy's conceptualisation is towards the right-hand end, because he conceives that holistic knowledge is important for the understanding that motor mechanics require and he conceives that holistic knowledge is greater than the sum of its separate components.

On the fourth continuum (universal <---> related to context), Andy's inferred conceptualisation is between the right-hand end and centre point, because he conceives that knowledge is influenced by the knower's interpretation (part of the context). However there is no indication that Andy conceives knowledge is influenced by its political context. The inference on this conceptualisation is made from very little data and thus is very tentative.

ALAN : ANALYSIS OF CASE STUDY

Background

Alan has had nine-and-a-half years of teaching experience in a polytechnic. He has taught at a range of levels including pre-employment, Trade Certificate and Advanced Trade Certificate. Before gaining a teaching position, he worked for twenty years as a motor mechanic in the automotive industry. He holds the qualifications of Trade Certificate and Advanced Trade Certificate (Automotive). In addition, he has extension certificates in alternative fuels installation and air conditioning. And he holds a Tutor [lecturer] Education Centre (TEC) Certificate,

awarded on satisfactory completion of the twelve-week tutor-training course for polytechnic tutors.

Alan chose to focus discussion in the second and third interviews on a practical lesson on hand-tool skills (Unit 228: Use of Hand Tools) which he was teaching at the time of the interviews to the one-year, full-time class of students studying towards a National Certificate for Entry to Automotive Trades.

Analysis

1. The means are separated from the ends of teaching/learning

<----------->

The means are integrated with the ends of teaching/learning

In following statement, Alan indicates that he adjusts the ends of education (if not the means as well):

> We can put bits into the training part if we feel they are missing ...
>
> (E2/1)

Alan's description of a lesson in which he introduces an aspect of wheel alignment that is beyond the performance criteria for the particular lesson, but of interest to his students, provides an example of his teaching practice in which he integrates the means with the ends:

> ...discussion on wheel alignment in general and some of the angles that were outside the parameters that they have to deal with ...
>
> (E2/4)

By following the spontaneous interests of his students, or, in other words, seizing upon the "teachable moment", Alan indicates that he conceives teaching/learning to involve an interactive process. He adds to this impression when he states that "no one system will work for all people" (E2/3) and that he tries to adopt approaches to which most students respond well.

Alan is concerned that the stricter requirements introduced by the NZQA mean there is less room than previously for him to use his professional judgement during his teaching practice. Put another way, Alan indicates the belief that teachers ought to be able to make adjustments between the means and the ends of teaching/learning in the course of their teaching practice:

... With the NZQA there's a more elaborate presentation... being that the guidelines we now have to follow are more strictly laid out... In the old days there was a bit of room for personal input ... and a tradesman's ...judgement.

(E2/2: 400)

Alan conceives his role is that of a tutor "giving guidelines and then allowing them (the students) to work and being there to assist them when required" (E2/3:331). This guiding/facilitating role is consistent with the conception of teaching/learning as a process, rather than as the attainment of a product. It is evident in the following quotation that Alan conceives the learning process to be a continuing one:

... the man who knows everything has not yet been born.... // ... you never stop learning, do you?

(E2/1: 392)

And in a later interview, when Alan is asked if he expects the National Certificate students to go beyond the attainment of the course's competency criteria, he states:

Yes - yeah and no. If they want to stay at that level that's fine but really they do have to go beyond it if they want to become effective tradesmen - yes. As I say it's a basic automotive course... and tradesmen have to work a level above that

(E2/4)

In the above response, Alan indicates that students "really" cannot expect to stop learning once they have attained the outcomes of the course. Then, in the following quotation, when he describes how he encourages students to develop an enquiring attitude, he describes what amounts, in effect, to a process for continuing to learn:

.... Well I see the learning for the motor trade - there are words I use all the time with my students - and I actually write them up without writing anything else along side them - the how, why and what type things, you know, how does it work? why is it there? and what is it actually trying to do?

(E2/1: 385)

When asked how he knows whether he is succeeding as a teacher, Alan does not simply comment upon outcomes as he might if he conceived teaching/learning in accordance with to the outcomes model. Rather he includes the following comments indicating that he evaluates the interactive process:

If you can get out into that third tier... that's when you get a lot of input from the students and that's when things go well.

(E2/2)

And later he states:

"success is generally when you do have a good interaction with your students" ..."

(E2/4)

Summary

Alan explained how he adds to the course when he considers "bits" are missing and at times when students show an interest. He believes that teachers ought to be able to use their professional judgement to make adjustments between the ends and the means of teaching. He conceives teaching/learning to involve an interactive process in which the teacher's role is more a guide/facilitator than a didactic instructor. Learning itself, he appears to conceive as a continuing, lifelong process with individual students learning in different ways. His description of how he encourages students to develop an enquiring attitude is, in effect, a description of developing a process for continuing to learn.

In explaining how he makes on-going judgements about the success of his teaching practice, Alan focuses upon the teaching process and the qualitative judgement that he makes in relation to the process.

2. ***Learning/knowledge/skills are capable of precise linguistic description, pre-specification and measurement***

<----------->

Learning/knowledge/skills cannot be readily captured in linguistic description, pre-specified and measured

As well as knowledge and skills that one might assume lend themselves to precise specification and measurement, Alan believes that motor mechanics require personal qualities, such as "communication and attitude towards the job and towards dealing with people" (E2/1), that one might assume do not lend themselves to precise description and measurement. He states, for example, that beginning students have "got to have the feeling that this is where they want to be ..."

(E2/3).

In the following statement, Alan indicates that he conceives learning as a human quality which resides within students and is influenced by personal attributes:

> ... people will learn what they want to. You can't teach them anything basically.... //... they have to be willing to learn the information. ... My theory is that you present the information - if they're interested they will learn it and if they're really keen they will even go beyond you and learn a lot more - you are just the arrow and pointing in the direction in which they should head maybe.
>
> (E2/2: 133)

Consistent with the conception that learning resides in individual students, Alan's reference in the above quotation to the teacher's role as an arrow pointing in a direction indicates that he sees the teacher as a facilitator. The implication is that a facilitator responds to the contingencies of particular situations (including the students' attributes) and flexibly guides the students' learning towards goals, rather than focusing narrowly upon the attainment of precisely specified outcomes. Alan also indicates that he conceives learning to be a continuing, open-ended process when he suggests that if students are "really keen" they will "go beyond you". By definition, open-ended learning cannot be pre-specified in detail.

Alan's conception of theory and practical as a unitary notion supports the inference that he conceives learning to reside in individuals, rather than as an external, objective thing. In the next quotation, his description brings theory and practical together in the student's mind.

> If you don't know how you cannot do, basically so you've got to use your mind as well as your hands. //... the people that are good with their hands are also good with their minds and the general concept - if he wasn't good with paperwork meant that he couldn't think very clearly. - but obviously if he was a good tradesman, he obviously thought very clearly...
>
> (E2/2)

When Alan refers to students developing a "feeling" for using hand-tools, he describes what is, in effect, kinaesthetic responses. Such responses would be difficult to define and pre-specify precisely, linguistically. They are learned without precise description over time by trial and error under the teacher's guidance and through experience:

> Yes, it's a learned ability...and the more you practise the better you become .... // ....for example...how tight do you do a nut up?... If you want it done specifically you'd use a torque wrench - a specific tool for tightening... but as a tradesman .... most bolts don't need to be torqued as such but have to be pulled up to approximately the correct torque - now that is a feel that you develop... it comes with practice ... // ... at the pre-employment level we're trying to make students aware rather than train - feel can only come with experience...
>
> (E2/3)

Alan provides further indication that the official system of pre-specifying and measuring outcomes falls short when he suggests that students may need to go beyond the official assessment criteria:

> ... my feeling about the assessment side of it is that maybe the students actually have to go beyond the basic requirements of the assessment to be actually assessed properly and the assessments are necessary because we have to have some outcomes - you know for a piece of paper that we can show
>
> (E2/3)

The implication of the above statement is that the official assessment meets the requirements of the system to document students' learning, but is not capable of counting all that is important. For example, Alan points out that performance criteria measure specific parts rather than overall understanding:

The performance criteria have to got to be aimed at specific parts... which in the system itself is fair enough.

(E2/4)

In relation to assessing overall competency, Alan states:

... you can't write them down can you ? ... That's a judgement call which is part of the area which probably makes it difficult when assessing students along performance criteria lines ...

(E2/4 582)

Alan's description of the unofficial system that the lecturers have devised for ensuring consistency in assessing supposedly straightforward skills suggests that any assumption of precision in the specification and measurement of such skills is problematic:

... what we are trying to do is to get - trying to get some evenness flowing through this thing - is that we are insisting that students practise the task a number of times... and we've got a method of tracking the practice runs before they attempt the assessment ... // ...it should not happen - according to the rules - but it does

(E2/4)

Alan makes use of intuitive knowledge, along with other forms of knowledge, to evaluate his teaching. He states that:

within yourself, you know that things have gone well ...

(E2/2)

By definition intuitive knowledge cannot be described precisely, pre-specified and measured.

Summary

As well as skills that can be described precisely and measured, Allan believes that motor mechanics require personal qualities, feelings, attitudes and kinaesthetic skills that do not lend themselves to precise description, nor to measurement. He also describes how he uses what is, in effect, intuitive knowledge to evaluate his own teaching. The official assessment requirements, Alan believes, are unsatisfactory because they do not capture some important aspects of the knowledge and skills. He gives the example of overall (holistic) knowledge which is important, but difficult to define and not included in the

official criteria. He suggests that (professional) judgement is required to determine whether students have an overall understanding.

Alan explains the difficulty of achieving consistent assessments of (apparently straightforward) skills amongst the different lecturers. He and his colleagues have devised their own system and requirements.

3. ***Knowledge comprises the sum of discrete components***

<----------->

Knowledge has holistic characteristics over and above the sum of its separate components

Alan's comments, included under the above continuum, concerning the difficulties of assessing overall (holistic) knowledge but, nevertheless, the importance of doing so, indicate that he conceives overall knowledge to be different from the knowledge of separate components.

Alan confirms that he believes holistic knowledge is important when he points out that, over and above basic skills, good motor mechanics, require "the ability to diagnose' faults, which, in turn, requires overall (holistic) knowledge of "how vehicles work". He states:

> Good basic skills along the lines of their basic hand-tool skills and work skills [and] the ability to diagnose..., and along with diagnosis, of course, must come, a reasonable general knowledge of the working of the motor trade - how vehicles work, systems - systems' functions
>
> (E2/1)

Because they believe that there is a need to develop overall knowledge in order to develop the understanding required by a motor mechanic, Alan and his colleagues add to the official curriculum:

> ..not so much in this particular unit [Hand-tool skills] but in some of them we go deeper than the actual .... training manual requires.
>
> (E2/1: 107)

In the following quotation, Alan quite clearly indicates that he conceives holistic knowledge to be more than the sum of discrete pieces of knowledge when he states that he does not "think it would be possible to get a complete over-view" from units of learning:

> To be fair I don't think it would be possible with units of learning to get a complete over-view. What has to happen is a person has do the units, learn basic skills, then adapt themselves to suit the conditions.... //... you cannot be a motor mechanic unless you are able to adapt to the situation... it's part of the training - it can't be done with units of learning. I would agree entirely. There are specific things here that are being looked for - but if you can do these specific things ... then probably the adaptation for diagnosis will come from it anyway ...
> (E2/1: 132)

By stating that "probably the adaptation and diagnosis will come anyway", Alan expresses some uncertainty or tension concerning the efficacy of the course's focuses upon discrete units. He believes the holistic integration or overall understanding is important for a motor mechanic, yet this aspect of the students' learning is left for them to work out for themselves.

Summary

Alan explains how motor mechanics require overall (holistic) knowledge of motor vehicles in order to diagnose faults. He and his colleagues add to the official curriculum to ensure that such knowledge is developed, which means that in some units they "go deeper ... than the actual training manual requires". By explaining that simply learning individual units is unlikely to provide the overall (holistic) understanding a motor mechanic requires, Alan demonstrates his own understanding of the principle that the whole is greater than the sum of the parts. Alan's comment concerning his hope that students will eventually learn to integrate the discrete units taught on the course and develop an overall understanding indicates tension between the curriculum and what he believes to be necessary in the work of a motor mechanic.

4. Learning/knowledge has a universal application

<----------->

Learning/knowledge is related to its context (including its political context)

When discussing the "difficulties in agreeing on performance standards", Alan stated:

"... but then different people have different views ... and these views do tend to colour the way you see things"

(E2/4)

Alan's comment reflects his understanding that knowledge is shaped by people's views or theories. In a sense, the comment also implies an understanding (perhaps an intuitive understanding) that knowledge is influenced by its context.

Summary

Very few data were collected concerning the extent to which Alan conceives knowledge to be related to its context or to have a universal existence. But the data that were collected suggest that he conceives knowledge to be influenced by its personal context.

Conclusions to case study

From the perspective of the frame (the four continuums) adopted for the purpose of analysing the case studies, Alan's conceptualisation of teaching and learning is inferred to include the conceptions that:

- The means and the ends of teaching and learning are integrated in an on-going, interactive, human process in which lecturers take the role of a guide and facilitator and use their knowledge to make professional judgements concerning the process and the learning.
- Teaching can be judged by a qualitative process.
- The evaluation of learning may include professional judgements.

- As well as skills which can be described precisely and measured accurately, teaching and learning include other forms of knowledge which do not lend themselves to precise description, nor to measurement; for example, kinaesthetic skills, personal qualities, feelings, and attitudes.
- Intuitive knowledge is a valid form of knowledge.
- Holistic knowledge involves "deeper" understanding which is more than the sum of the parts making it up.
- Knowledge resides in people, combines theoretical and practical aspects into a unitary concept, and is influenced by personal "theories"; that is, its personal context.

Thus on the first continuum (separated <---> integrated), Alan's inferred conceptualisation is near the right end because he conceives teaching and learning to involve the interaction of the means with ends in a continuing process.

On the second continuum (precise description/measurement <---> more than readily captured) Alan's inferred conceptualisation is at the right hand end, because he conceives teaching and learning to include more than can be described precisely, pre-specified and measured accurately. Further, he conceives that even straightforward skills can pose difficulties in regard to accurate assessment.

On the third continuum (discrete <---> holistic), Alan's inferred conceptualisation is near the right-hand end, because he conceives that holistic knowledge involves "deeper" understanding which is more than the sum of the parts making it up. He believes that motor mechanics require deep knowledge and the resultant understanding.

On the fourth continuum (universal <---> related to context), Alan's inferred conceptualisation is on the right-hand side, towards the right-hand end. Alan

appears to conceive that knowledge is related to its personal context, but not to its political context. As very few data were collected on this continuum, the inferred conceptualisation must be considered tentative.

DON : ANALYSIS OF CASE STUDY

Background

Don is an experienced motor mechanic with twenty years' practical experience in the trade. He has also had a further ten years' experience teaching automotive engineering. In addition to an Advanced Trade Certificate (Automotive Engineering), Don holds an "Arc Welding Ticket" (Trade Certification Board) and stages one and two of a New Zealand Certificate in Engineering. He also holds a Tutor [lecturer] Education Centre (TEC) Certificate , awarded on satisfactory completion of the twelve-week tutor-training course for polytechnic tutors.

Don chose a lesson on automatic transmissions as the focus for discussion in the third interview. The lesson is taught to apprentices who attend block courses at the polytechnic as part of the level three and four NZQA programme. While many of Don's comments throughout the four interviews relate to this level three and four course for apprentices, it is by no means the sole focus of his comments. He also often comments on his teaching practice with the one-year, full-time (levels one and two) course leading to the award of National Certificate in Automotive Engineering.

Analysis

1. The means are separated from the ends of teaching/learning

<----------->

The means are integrated with the ends of teaching/learning

In response to a specific question concerning whether he makes use of *teachable moments*, Don responds:

Yeah, all the time... It happens on a daily basis with me actually where... there's something of practical value that I feel the students would benefit by...

(E3/4: 67)

In effect, Don makes adjustments between the means and the ends of teaching/learning during his teaching practice. It can be argued, therefore, that he recognises, intuitively at least, the view of teaching and learning as a process involving the integration of the means and the ends.

Don expresses the view that students have individual, preferred learning styles. In the following quotation, he also indicates the belief "responsibility" for learning rests with the individual concern:

... as the saying goes, you can lead a horse to water but you can't make it drink.

(E3/3)

Don believes that motivated individuals learn not only from formal lessons, but also by "pondering" (reflecting) later on what has been learned. Thus motivated students continue to learn beyond the lesson:

I feel that a lot of learning takes place afterward not just during the session...but afterwards ...when a person ponders about things and ...thinks about the course or the lesson. If that process continues, then the learning continues ...

(E3/3)

In addition to supporting the belief that learning is an individual "responsibility" and that the learner's motivation is important, the above statement also implies, again, that Don conceives learning to be a process in which the means are integrated with the ends.

A further indication that Don, intuitively at least, conceives teaching/learning in accordance with a process model rather than an objective/outcomes model is revealed following some questioning aimed at encouraging him to reflect upon the way he uses questions in his teaching practice. Don states:

Well I never tell my students the answer directly...

(E3/4: 566)

When the interviewer suggests that maybe Don is helping his students to develop a process for continuing to learn, he agrees:

.... but ...yes, it's a process if you like that I try and teach my students...to think about things and to try to nut and work things out ...

(E3/4)

Don sees a need for his students to continue to learn after the course because the trade will continue to change. However, before the above suggestion, he had not consciously included "learning to learn" in his teaching practice, even if he has done so more or less intuitively. At a conscious level Don, in keeping with the official curriculum which does not focus upon processes such as "learning to learn", simply assumed that somehow the students would automatically develop the ability to continue learning. In this respect, Don stated that "by giving them a good foundation" the students "would automatically have the ability to keep up with the latest changes ...". He suggested that they would do this by reading "technical journals and things like that". And that when new developments come in, "you can usually work it out based on knowledge that you already have"

(E3/4)

Elsewhere, Don referred to the "adaptive type skills" the students learn. He explained how students learned to extend their basic repertoire of skills by marrying different combinations of skills and part skills together:

... and of course those skills are developed by the student themselves ... because ...what they invariably do is ... marry half a skill with another half a skill.

(E3/4c)

Consciously Don hopes the students will adapt automatically. Intuitively he helps them to learn to learn.

The following quotations, in which Don refers to learning going up in progressive steps to higher levels suggests the possibility that aspects of Don's conception of teaching and learning may be consistent with an objectives/outcomes model, rather than a process model. He states that:

... learning continues and goes up in steps.
(E3/3)

and

Yeah, well all the stages are defined ...Ah that's why they're called level one, two, three and four. And each level just gets that little bit harder ....It would be difficult to do level four without having done level two and three ...

(E3/4)

The apparent contradiction between the above statement and Don's other statements about learning may be a reflection of the fact that the objectives/outcomes model is the model adopted by both the polytechnic concerned and the NZQA. Don thus may have accepted some of aspects of the official conception but not others. It may be that Don's actual conception of teaching and learning does not lie squarely at one extreme or the another. It may lie somewhere between.

In the next statement, Don almost seems to return to the conception of learning as a continuing process, but still uses the objective/outcomes model's terminology. His explanation suggests that the "end product" of each course becomes the means for attaining the next end or product on the "next rung on the ladder". In this sense, he suggests a continuing process:

... during the training - with each student you're probably producing four or five end products...What I mean by that is, after the pre-apprenticeship course you're providing one end product ... which is going to be useful as a first year apprentice ... Then they come back for further training .../ /... and then you're producing an end product which is going to take them up the next rung of the ladder ....

(E3/4c)

Summary

When Don describes how he makes use of "teachable moments" in his teaching practice, he indicates an understanding of teaching and learning as a continuing process, involving an interactive process in the classroom. His view of learning as a continuing process is evident again when he describes how "pondering" on outcomes learned in a lesson leads to further learning; and, again, when he talks about students developing the habit of trying to "work things out", particularly when he realises that this is a process for "learning to learn"

What he describes is, in effect, dialectic interaction between the means and the ends of teaching and learning. While Don may not be consciously aware of the details of the process, he seems to have some intuitive knowledge of it, nevertheless.

Don is explicit concerning his belief that individuals have their own preferred learning styles and, ultimately, are "responsible" for their own motivation and learning.

At another time during the interviews, Don describes how learning goes up in steps to higher levels. It is a description which is consistent with an objectives/outcomes model and implies that he conceives learning as a linear progression to an end. As such it appears to be a direct contradiction to the above statements indicating that he conceives learning as a continuing process, consistent with a process model. An explanation may be that his conception is influenced, but not dominated, by the official paradigm.

2. ***Learning/knowledge/skills are capable of precise linguistic description, pre-specification and measurement***

<----------->

Learning/knowledge/skills cannot be readily captured in linguistic description, pre-specified and measured

Don's comments reveal that even for what curriculum developers (outside of education) might consider to be objective skills, accurate description and measurement pose difficulties. There is "a certain amount of wobble" in the system:

> I feel that the system has a certain amount of wobble in it .... Because you see ...if you imagine ...a straight line ... from this point to that point [draws an imaginary line on the desk] anywhere on that straight line may be an acceptable standard... Now you might get a very conscientious tutor who works right up here [points]...and one who's not so conscientious who works there [points] so there's a sort of margin...
>
> (E3/4:893)

As well as the differences between the judgements of individual lecturers concerning the satisfactory performance of particular skills, there is the question of competence over time. Don believes demonstrating competency on one occasion, as required by the official curriculum, is unsatisfactory. Students ought to be able to perform the skill at a later date. Thus Don argues determining actual competency requires professional judgement. But, again, different lecturers make different judgements:

> .... it's got to be repeated ...over and over again ...and this is where the anomalies come in ... where one ...lecturer's definition....based on professional judgement, of whether that student is competent or not may differ to another tutor's. Because, if you read the book, they must know how to do the task - they don't say anything there about... remembering how to do it five months down the track...
>
> (E3/4c: 24)

Don refers to the "spirit of the performance criteria" being to produce a useful employee. But the official specification falls short. Consequently, he and his colleagues have introduced their own requirement for students to perform each task a number of times:

Now the spirit of the performance criteria is to achieve a competent...student who will be useful to an employer ....but somehow between there and there that ...doesn't happen unless you do what we do ...and get them to repeat it and repeat it, until it virtually comes out of their ears.

(E3/2: 75)

Thus, in Don and his colleagues' view, the official criteria fail to capture in words precisely what is actually intended, but the "spirit" is evident. They comply with the spirit rather than what is stated and, in doing so, attempt to ensure their students are competent when they arrive in the workforce.

In the course of discussing assessment, Don explains how he sometimes uses his professional judgement to make a global assessment rather than "go[ing] through the whole lot" and assessing each element against the official criteria. He illustrates with the example of assessing students' performance of a *tune-up*. In effect, Don provides an example of how he sometimes relies upon his own intuitive knowledge, or what Schon (1983) calls *knowing in action* (see Chapter Four):

... each task has different elements. Using the example of a tune-up again. Now I might get a student to do the tune-up assessment and there'll be certain things wrong with that engine...Now if you come back and now the engine's going sweet as a nut, ... then you know, well I must have done everything right ...otherwise it wouldn't be sounding like that...the engine wouldn't be going well....Then again, if the engine sounds rough you think to yourself "Well they may have done right except for one thing... so let's find out what that one thing is." And then you've got to go through the whole lot ...so a lot of it is really professional judgement. ....

(E3/2)

In the above quotation, Don describes himself assessing student performance against the criterion "the engine's going sweet as a nut". It is an abstract, qualitative criterion that defies precise expression linguistically. It is *not* the sort of criterion that is encompassed within the objectives/outcomes model (see Chapter Three). A further implication arising from the quotation is the use Don makes of holistic knowledge in making his global assessment. Holistic versus

discrete components of knowledge is the subject of discussion in the next section.

Don describes another global or intuitive assessment that he makes use of during his teaching practice. It is the impression that he intuitively forms of how well his teaching practice is proceeding. It is based upon a variety of feedback that he receives during his teaching practice and spontaneously interprets:

... by the response of the student(*s*) ...are they forthcoming with questions? ...You can tell by the expression on their faces...are they really looking at you with interest?...Do they seem enthusiastic and ...This is what you often see when students aren't interested - you see a couple talking together there ...and another couple talking together there and ...and telling jokes ...and the next thing you know you've lost them...So ..yes you can ...tell - how well you're doing by ... the response you get ... I tend to ask probing questions as well. I mean if no one answers ...then they're not with you and I make sure that the questions are reasonable questions that they should know...and they either respond or they don't.

(E3/2b: 10)

In response to a direct question, Don identifies some personal qualities and non-technical skills which he believes motor mechanics require. They are qualities such as consideration and skills to do with communication, treating staff in the right way and resolving situational problems. They are not the sort of qualities and skills that lend themselves to precise specification and accurate measurement:

Oh for sure ...in this day and age - it never used to be as important because ...people ... were more forgiving about this sort of thing - but you've got to know how to treat the owner of a car ..../..... so you you've got to be ...considerate and ... protect...your employer's clientele...I guess that ..if you have no customers, you don't have a job either and if you own a business or if you're in a position of responsibility, you've got to know how to treat staff and ...have business practice skills as well...

(E3/1 - E3/1b: 03).

Don continues:

what I try and teach my students ...especially the ones that come back for retraining and at the higher level courses is that. "Listen to what the customer says or is telling you about their car - what are the symptoms? ...Ask them what's happening and when it's happening ....and whether it's a rainy day, or whether it's a sunny day, or a cold day...in case there's dampness involved or whatever". Then a further suggestion is to suggest to the customer, "Let's go for a

drive. Now would *you* like to drive and show me what's happening?" .... because often what the mechanic thinks the customer's saying is not actually what the customer is saying at all.
(E3/1b: 28)

Following on from one of his earlier comments, to the effect that he considered himself to be a perfectionist, Don was asked if this was an attitude he tried to teach his students. He responded:

Well I think a certain amount of it just naturally rubs off ... that's what happens ...
(E3/2: 132).

It seemed that while being a perfectionist was not included in the official curriculum, Don considered it a worthwhile personal attribute for students to learn. Such attributes, of course, do not lend themselves to inclusion in the objectives/outcomes curriculum model, nor does Don's suggestion that an important attribute might "just naturally rub off" or be "caught" rather than "taught" comply with the objectives/outcomes model. In effect, what Don refers to as "just naturally rub[ing] off" involves role modelling.

Summary

Don's responses reveal that, even for what might be considered objective, describable and measurable skills, accurate, consistent measurement by different assessors is problematic. One of the problems is to do with the relationship between competence and the retention of skills over a period of time. Different assessors may judge this in different ways. Don believes that the spirit of the curriculum is to produce a competent employee, but the official specification of standards does not ensure this. Therefore, Don and his colleagues have adopted their own standards which require students to demonstrate their competence by performing skills, not only once as officially required, but a number of times.

Another variation to the official assessment procedures that Don describes himself making involves the use of a global, qualitative criterion for a whole task, rather than a series of official quantitative standards for each part of the

whole. He believes that his professional knowledge enables him to judge subjectively, more or less intuitively, whether the performance overall is competent.

Don also describes how he makes use of what are, in effect, global, spontaneous, intuitive, on-going assessments or judgements about the success of his teaching practice. Other skills which are difficult to describe precisely and to measure that Don believes are important for a motor mechanic include consideration, communication skills, staff relationships, problem solving skills, and listening skills. Don suggests that some skills or personal attributes are learned through role modelling rather than didactic teaching.

3. ***Knowledge comprises the sum of discrete components***

<----------->

Knowledge has holistic characteristics over and above the sum of its separate components

Two of Don's responses in the above section indicate that he conceives holistic knowledge to have characteristics over and above the sum of the separate parts making it up. The first is revealed when Don describes how he can judge that a student has performed all the separate steps required to tune a car because the "engine's going sweet as a nut" (E3/2). He knows immediately that all is in order, on the basis of his instantaneous, intuitive, holistic knowledge (Schon's knowing-in-action - see Chapter Four). The characteristic of immediacy cannot be achieved through checking all of the component parts. In the situation described, it is *not* having to check separate components that Don values.

The second situation involves how Don knows whether he is succeeding in his teaching practice. He describes what amounts to a total, holistic, intuitive impression that he receives from a class of students. Again it is the

instantaneous nature of the knowledge that is of value, and this characteristic would be lost if feedback were collected from the individual components making up the situation. Thus in both examples, the holistic knowledge possesses a characteristic that is not available from an examination of all the separate parts.

Don makes the point that understanding is important for a motor mechanic:

> ...if you can understand how something works, you know how to repair it.
> (E3/2:264)

An implication is that motor mechanics must have an overall, holistic understanding of how the various components of a motor car function together, in order to diagnose faults and make repairs.

In response to a question, Don indicates that a good motor mechanic "must be able to handle any job on a motor car":

> Okay that's very easy. A good motor mechanic is a person who can handle any job on a motor car...competently...So there would be nothing that would come into a workshop that person couldn't handle...The next thing would be to get that job done quickly...and at the same time to do a good job...so that it doesn't come back ...
> (E3/1: 685)

In a direct sense Don's statement means that a motor mechanic must be able to diagnose and fix any fault in a motor car. Another implication is, again, that a motor mechanic must understand not only the discrete components, but also how they function together; that is, a motor mechanic requires holistic knowledge of motor vehicles

In his next statement, Don indicates that a motor mechanic also must be able to judge what actually needs to be done and what safely can be left out:

....now a good mechanic you might say is one who does a ... perfect job...but... it'll take you two weeks...So a ...sign of a good mechanic is knowing what you can leave out ...and still achieve the same end result...The engine's not going to break down, it will be good for a certain number of kilometres...it'll run well, but it will be finished in the required time frame (E3/2)

Don believes that mechanics must develop the ability to see situations from a holistic perspective, which is not achieved by adding together all the information from the separate components. The knowledge from the components and from the situation itself must be integrated into, as it were, a holistic solution. Don's statement indicates, in effect, that he conceives holistic knowledge to be different from the sum of knowledge of components making up the whole.

Summary

Don describes how, in some situations, he is informed instantaneously by holistic knowledge. In these situations any knowledge gained by considering each separate component would lose its immediacy and be of less, or little, value. Don suggests that motor mechanics require holistic knowledge of motor vehicles in order to understand how the various parts function together and thus to be able to diagnose faults and make repairs. Motor mechanics also require holistic knowledge and understanding in order to decide, given the circumstances, what needs to be done and what ought to be omitted.

4. Learning/knowledge has a universal application

<----------->

Learning/knowledge is related to its context (including its political context)

No data was obtained on this aspect of Don's conceptualisation of teaching/learning.

Conclusions to the case study

From the perspective of the frame (the four continuums) adopted for the purpose of analysing the case studies, Don's conceptualisation of teaching and learning is inferred to include the conceptions that:

- Teaching and learning involve an educational process which, in turn, involves interaction between the ends and means of education.
- Learning is a continuing, lifelong process.
- Individuals have preferred learning styles and, ultimately, are responsible for their own learning.
- Learning progresses in a linear path through increasing levels of difficulty.
- Accurate assessment of skills by different assessors is problematic and depends upon professional judgement.
- Competence includes the retention of skills over a period of time.
- Knowledge includes more than that which can be pre-specified, described precisely and measured accurately (for example, intuitive knowledge, consideration of others, communication skills, staff relationships, problem solving skills, listening skills, and personal attributes).
- Some skills and knowledge are "caught" rather than "taught" (through role modelling).
- Overall or holistic knowledge is central to the understanding of motor vehicles that motor mechanics require.
- Overall or holistic knowledge provides greater understanding than can be attained by knowing about all the separate components. It has characteristics that are not available simply from knowledge of the separate components without knowledge of how they relate together.

Thus on the first continuum (separated <---> integrated), Don's inferred conceptualisation is towards the right-hand end, because he indicates that he

conceives teaching and learning to involve a process in which the means are integrated with the ends. But because he also indicates the conception that teaching and learning involve a linear progression through levels, his conceptualisation would need to be placed some distance back from the right-hand end, perhaps over a range to the right of the centre point.

On the second continuum (precise description/measurement <---> more than readily captured) Don's inferred conceptualisation is close to the right-hand end of the continuum, because he conceives that learning/knowledge/skills comprises more than that which is amenable to precise description, pre-specification and accurate measurement. Further, he conceives that even straightforward skills can pose difficulties in regard to accurate assessment.

On the third continuum (discrete <---> holistic), Don's inferred conceptualisation is close to the right-hand end, because he conceives that holistic knowledge is central to the understanding of motor vehicles that motor mechanics require, and because his responses indicate implicit understanding of the notion that holistic knowledge provides greater understanding than can be attained simply by knowing about all the separate components.

No conceptualisation can be inferred for Don on the fourth continuum (universal <---> related to context).

CONCLUSIONS TO CASE STUDIES OF THE AUTOMOTIVE ENGINEERING LECTURERS

Conclusions from the three case studies are compared through the frame provided by the four continuums used in the analysis. The discussion answers research question (2.1.) concerning the similarities and differences amongst the conceptualisations of the three automotive engineering lecturers.

On the first continuum (separated <---> integrated), one lecturer's (Alan's) inferred conceptualisation of teaching and learning can be placed at the right-hand end, because he conceives teaching and learning to be a process in which the means are integrated with the ends. In some of their comments, the other two lecturers (Don and Andy) indicate that they too conceive teaching and learning as a process, but in other comments indicate that they conceive teaching and learning to involve a linear progression through levels to an end - a conception which implies that the means are separated from the ends, rather than integrated.

Locating the two apparently "mixed" conceptualisations on the continuum is problematic. They cannot be placed, fairly, at the right-hand end or the left-hand end. In balance, based upon the researcher's impression of the relative emphasis given by the individual lecturers to each view, placing their inferred conceptualisations across a range, to the right of centre, seemed most appropriate. Possible explanations for the "mixed view" are discussed in Chapter Nine.

On the second continuum (precise description/measurement <---> more than readily captured) all three lecturers' inferred conceptualisations are placed near the right-hand end, because all three conceive that learning, knowledge and skills comprise more than can be described precisely, pre-specified and measured

accurately. Also all three indicate that even straightforward skills can pose difficulties in regard to accurate assessment.

On the third continuum (discrete <---> holistic), all three lecturers' inferred conceptualisations are close to the right-hand end, because they conceive that holistic knowledge is central to the understanding that motor mechanics require, and because they indicate implicit understanding of the notion that holistic knowledge provides greater understanding than can be attained simply by knowing about all the separate components.

On the fourth continuum (universal <---> related to context), no inference is made concerning one lecturer's (Don's) conceptualisation, because no relevant data were collected. The inferred conceptualisations for the other two lecturers (Andy and Alan) are located towards, but not at, the right-hand end of the continuum, because they conceive that knowledge is influenced by the holder or, so to speak, by its personal context. There is no indication, however, that either conceives knowledge to be related to a political context.

The above findings suggest that the three automotive engineering lecturers conceptualise teaching and learning in a very similar way, at least in relation to the four continuums. Even taking into account the "mixed" conceptions implied by two lecturers in relation to the first continuum, it can be stated that: all three automotive lecturers conceive, or imply, the conceptions that teaching and learning are continuing processes involving interaction between the means and ends; that learning, knowledge and skills comprise more than can be described precisely, pre-specified and measured accurately; and that knowledge includes holistic understanding which involves more than the sum of the separate parts. Also, two of the lecturers indicate the conception that knowledge is related to its context.

SECTION TWO : CASE STUDIES OF THREE NURSING LECTURERS

INTRODUCTION

The faculty in which the nursing lecturers are located is concerned mainly with teaching students studying towards a Bachelor of Nursing degree and registration as a nurse. These students attend a three-year, full-time course. The degree programme is also offered as a *Bridging Course* for registered, practising nurses who, having qualified *without* a degree under the past system, wish to up-grade their qualifications and qualify for a degree. Other full-time and part-time courses related to nursing and health are also offered by the faculty.

Two of the lecturers in the study are teaching in the degree course and focus most of their comments on that course. The third lecturer focuses much of his discussion on the Bridging Course. He is also teaching in the three-year degree course and focuses some of his comments on that course, too.

The Bachelor of Nursing programme was designed by the polytechnic concerned and approved by the NZQA. The polytechnic was also, as required, accredited by the NZQA to teach the course and award the degree. Registration as a nurse is awarded by the Nursing Council of New Zealand. Funding is allocated through the Ministry of Education, in accordance with government policies, but changes to a tendering may be a possibility in the future [see the Minister of Education's (Smith, 1994a) comments in relation to ITOs, in Chapter Seven].

The analyses of the three case studies in this section follows:

ELIZABETH : ANALYSIS OF CASE STUDY

Background

With over sixteen years' experience teaching in nursing programmes, Elizabeth is an experienced nursing educator. Her first teaching appointment was to a hospital school of nursing where she taught for six years. Later she gained an appointment to the polytechnic programme where she had been teaching for ten years at the time of accepting the invitation to participate in the interviews.

Elizabeth's experience as a clinical nurse includes three years as a district nurse and one year as a public health nurse.

In addition to the qualification of RGON (Registered General and Obstetric Nurse), Elizabeth holds a Bachelor of Arts degree in psychology and a certificate awarded on completion of the twelve-week Tutor Education Centre course for newly appointed polytechnic lecturers.

Elizabeth left her tenured position as a lecturer at the polytechnic before the fourth interview had taken place. Nevertheless, she still willingly participated in the fourth interview. It took place at her home.

Elizabeth chose a series of lessons on oncology taught to the second year students as the focus of her discussion in the third interview.

Analysis of case study

1. The means are separated from the ends of teaching/learning

<--->

The means are integrated with the ends of teaching/learning

Elizabeth indicates that she believes learning ought to progress in a logical order from simple to complex. For example, she explains that students need to learn "the basics of asepsis" (N3/4) in the classroom before proceeding to learning about asepsis in a clinical situation, where, without the basic knowledge, they would be unsafe to practice. And when students learn to put on dressings, they start with "a simple, clean dressing" and progress to "... more complicated things like um ulcers and um yeah cavities ..." (N3/4). She emphasises this latter point in the following statement:

> I think it would be rather daunting if .... for a very new practitioner in year one to suddenly be facing big gaping holes in people .... and how to deal with them
>
> (N3/4)

Thus it may appear that Elizabeth conceives teaching and learning in accordance with a progressive, linear, objective /outcomes model such as that described in Chapter Three. On the other hand, the practical realities of what the students must face in clinical practice and the safety issues involved appear to be central considerations in Elizabeth's comments. Furthermore, in other responses, she indicates quite clearly that she conceives teaching and learning as continuing process and open-ended.

In the following quotation, Elizabeth refers to the continuing need for nurses to keep up-to-date and to the point that no two clients are the same (which implies that nursing education must be open-ended):

> .... every one has to keep up to date in their field and certainly at the end of three years no student should profess that they now know everything....You're constantly reminding them that, "Hey - given the time that we've got, we're only skimming the surface of this. A lot more learning will go on when you are out there nursing... "...We tell human stories of people that

we've nursed ... so students should pick up the message that...none of the stories are exactly the same ... no two clients are going to be exactly the same.

(N3/1)

Again, this time when responding to a question about how students learn to make the connections between the theory learned in Year One and practical problem situations introduced at Year Two, Elizabeth indicates that learning must be open-ended. She refers to their being no one answer that "is exactly to the book". She states:

... I haven't taught in year one... But they come to us ready to apply it to whatever... Obviously we can't set every possible scenario and talk about every possible - so the students have to make a lot of those links themselves. We can give them examples in class and tell them stories about different patients - the clients that we've nursed but ... none of their experiences are ever exactly according to the book.

(N3/1)

Elizabeth's description of the interactive process that she fosters in her teaching practice is also consistent with a process model in which the means are integrated with the ends. She does not simply choose and apply the best means for attaining the pre-specified ends which are set out in the curriculum's "learning outcomes", but "goes with the flow" of student interest that emerges within the inter-personal interaction in her classroom. While still concerned to "cover" the specified requirements, Elizabeth, at times, follows students' interests on aspects that are not included in the curriculum unit she is teaching, or, on some occasions, in any part of the curriculum. She states:

I try to go with the flow of the class and where the interest is but at the same time try and ... remember to...cover the things that I'm supposed to be covering because the course is so full that if you don't actually do what you're timetabled to do the students in effect miss out ...//... Sometimes though you can direct them to ... textbooks or journal articles and they can sort of cover the ground in their own ... way...but I ... so I try to go with what interests them and what questions are appropriate and things but at the same time ...cover what we're supposed to.

(N3/4)

The above quotation indicates that Elizabeth conceives teaching and learning as a process involving interaction between the means and the ends, rather than a "process" in which the means can be separated from the ends.

Elizabeth's response, included in the next section, concerning the unsatisfactory nature of assessing clinical nursing by means of a written examination, indicates that she also conceives that a separation between teaching and assessing is unsatisfactory.

Elizabeth's use of the word "cover", in the above quotation, is interesting and possibly significant. It suggests that she may be thinking in terms of former curricula or syllabi which set out content to be covered, rather than the present curriculum which sets out standards to be attained.

Although at times, in following the students' interests, Elizabeth goes beyond the specified outcomes for the unit she is teaching, she feels "comfortable" with the curriculum. The reason, she explains, is because she was a member of the team of lecturers who "devised" it:

> ... when that curriculum was devised we all had input and worked on it together as a team... so... for the most part we did that as a team effort so ...what we all thought and felt comfortable with ... went into the curriculum ...
>
> (N3/4: 142)

In the following quotation, Elizabeth explains that lecturers' must, themselves, role model such personal qualities and attitudes as respecting other people's points of view. The lecturers must demonstrate what is required by "doing it" themselves.

> .... I think it's important to role model to the students that other people's points of view - you don't necessarily have to agree with them, but at least you can listen.... I mean we're trying to teach them to respect other people's points of view with their nursing clients and... if we don't do it in class to their points of view. I mean... there's a discrepancy there...We're trying to teach them to respect other people's points of view... we need to role model about being sensitive to other people
>
> (N3/3)

An implication of Elizabeth's statement is that desired attitudes or qualities may be "caught" by students, rather than (or as well as) consciously "taught" by the lecturer.

One problematic aspect of "catching" rather than being taught is that what is learned may not be what was intended. Writers describe this as the "hidden" or unintended curriculum (Apple, 1993; Codd, 1993; Cornbleth, 1990). They point out that students learn from all aspects of the teaching context, including the institutional environment, the institutional organisation, the teacher and the teaching processes. Such aspects become, in effect, the means of teaching and learning. Thus, teachers need to consider both the means and the ends, particularly how they related to each other

Summary

Elizabeth explains the practical logic of progressing from simple to complex situations in teaching clinical nursing; but, nevertheless, does not conceive nursing education to be simply a linear progression towards a stated end. Rather she conceives nursing education to be a continuing, open-ended process. Elizabeth tries to "go with the flow" in her teaching practice, but, at the same time, remembers to "cover" the curriculum requirements. In effect, she adjusts the means and the ends of her teaching in accordance with the interactive process that evolves. She thus appears to conceive that the means and ends of teaching ought to be integrated. She also appears to conceive that teaching and assessing of at least some clinical practice ought to take place in the same setting.

Elizabeth conceives role modelling to be an important means of teaching. This view suggests that the means and ends of teaching must be consistent because students learn from the process itself (and from the context in which the process is located).

Although she sometimes adds to the official curriculum, Elizabeth is "comfortable" with the curriculum. She explains that she was involved in writing it. What she and others felt comfortable with went into the curriculum.

2. Learning/knowledge/skills are capable of precise linguistic description, pre-specification and measurement

<----------->

Learning/knowledge/skills cannot be readily captured in linguistic description, pre-specified and measured

Elizabeth distinguishes between rational and affective knowledge, or, in her words, "head" and "heart" knowledge. She suggests that some aspects of heart knowledge can be learned only through experience in a practical setting:

> Sometimes I think they probably learn some skills...just strictly in the practical setting - ones that you can't really teach in tech...You can, I suppose, talk in theory about caring for somebody who's dying... It's not the same as actually being there and going through...the same.
>
> (N3/4)

Elizabeth's assertion that some skills can only be learned through experience is supported by both Polanyi's (1957) and Schon's (1983, 1987) writing (see Chapter Four). An implication is that because "heart knowledge" is not amenable to precise description, pre-specification and measurement, it does not comply with the fundamental requirements of the objectives / outcomes model.

During another interview, Elizabeth refers to the problem associated with students knowing on paper (the theory), but not being to perform the skill in practice:

> ... There is the possibility that students can give all the right answers on paper and not be able to communicate at all with the person they are caring for.
>
> (N3/1:212)

This observation leads Elizabeth to question the validity of a written examinations as a means of assessing a student's clinical performance. Instead, she advocates assessments based upon observation of their clinical performance:

> ...the best measure really is watching how they perform out there in the clinical area. I don't know that any written exam or multi-choice exam the Nursing Council can set can really, truly measure that.
>
> (N3/1)

Yet, as Elizabeth points out, the final assessment of the students for registration as a nurse is made through a written examination:

> ... Nursing Council examination is multi-choice ... they just have to choose the right answer
>
> (N3/1)

Elizabeth's assertions concerning the problems of assessing some forms of nursing knowledge suggest again that the objectives/outcomes model, which requires that skills and knowledge be described precisely, pre-specified and measured accurately, is unsatisfactory for nursing education.

Another way in which Elizabeth's assertion suggests the objectives/outcomes model is unsatisfactory involves the separation it implies can be made between teaching and assessment. In this particular instance, as also noted in the previous section, the assumption is made that what is taught in one setting can be assessed independently in another setting, by a different person. But Elizabeth, in effect, suggests that some practical skills need to be assessed in the setting in which they are practised.

In elaborating further on the assessment of students' in a clinical setting, Elizabeth mentions the "gut" or intuitive feeling that she sometimes experiences:

> Sometimes when you look at the learning outcomes, the student has actually met them, but something in the gut-instinct tells you that there's something that you're not very happy with.
>
> (N3/1)

Elizabeth's comment in the above quotation suggests that the person assessing a student needs to be a professional nursing educator.

In the next quotation, Elizabeth explains the place of intuitive knowledge in clinical nursing:

> Nurses do tend to work a little anyway on some of their intuition and sometimes when you look back that actually is your best guide ... Sometimes you just get a hunch about something. It happens all the time when you're nursing people.
>
> (N3/1:270)

Intuitive knowledge, according to Elizabeth, has a place in nursing. Therefore there is an argument for its inclusion in the nursing curriculum. But because, by its nature it cannot be described precisely, pre-specified and measured accurately, it does not satisfactorily meet the requirements of the objectives / outcomes model.

Elizabeth again refers to her intuitive knowledge when she comments on how she knows she is succeeding in her teaching practice. She describes picking up the "vibes" and the cues that are provided through the students' reactions:

> ...I think you pick up the vibes...whether the students are interested and whether they seem to be with you and what's going on. You get quite perceptive at looking at their body language - seeing if they're watching their watch or yawning or staring out the window. I mean they would all be cues to me that they are not particularly interested or finding it very stimulating
>
> (E3/2: 448.)

The intuition which Elizabeth describes is immediate, holistic knowledge that comes to her in particular situations. In the above instance, it is knowledge which enables her to make on-going evaluations of her teaching practice. It appears to be based upon knowledge she has acquired through her professional experience as a teacher. It is what Schon (1983, 1987) describes as *knowing-in-action* (see Chapter Four).

Summary

Elizabeth conceives that heart knowledge (affective knowledge) can be learned and assessed only in clinical settings. It does not comply with the objectives/outcomes model's requirement for precise description, pre-specification and accurate measurement, nor with its requirement, as discussed in the previous section, for the separation of the means from the ends of teaching and learning.

Elizabeth also describes the use that practising nurses make, and she makes in her teaching practice, of intuitive knowledge. Again this form of knowledge does not comply with the requirements for precise description, pre-specification and accurate measurement.

3. Knowledge comprises the sum of discrete components

<----------->

Knowledge has holistic characteristics over and above the sum of its separate components

The quotations towards the end of the above section indicate that Elizabeth conceives holistic knowledge to be a valuable form of knowledge. Despite giving this impression, Elizabeth also appears to accept the fragmentation associated with the separation of theory and practice in the nursing curriculum during Year One, while the students are coming to "grips" with the theory. However, she does conceive a need for integration (which implies a more holistic understanding) through the application of this knowledge to situations involving people from Year Two on:

.... back in year one - that's where they come to grips with the theory and then as they move on, they start applying it to people experiencing different things

(N3/1)

When Elizabeth comments further that the students have "to make a lot of those links themselves" (N3/1), it begins to appear that, in effect, she may be giving expression to tension between the separation of theory and practice in the course structure. Regardless of the basis of her feelings, Elizabeth's comments clearly indicate that she believes nurses require integrated, holistic knowledge.

In commenting upon assessment procedures, Elizabeth indicates that she and her colleagues see a place for recall or lower level learning in the nursing course, but attribute greater importance to comprehension and higher level learning:

> Some of it is - straight recall level but we try to keep those sort of questions more to a minimum. We're looking for more comprehension - application at a higher level.
>
> (N3/1: 406)

Elizabeth's emphasis upon understanding and her concern that nurses gain holistic knowledge are consistent with Ramsden's (1992) findings. He associates an emphasis upon the holistic, integrated character of knowledge and an active rather than passive approach to learning with *deep learning* and understanding (see Chapter Four).

In talking about her teaching practice, Elizabeth describes how she, as a lecturer, must be able to instantly and sensitively critique students' responses and, in doing so, stimulate "thinking" from all the students:

> Have to critique on your feet what the students are saying and you have to in a sensitive way, if you think it's warranted, actually point out "There is another way of looking at this and how about... and what if... and ?" ... So you get the students all thinking.
>
> (N3/3)

The above quotation confirms Elizabeth's concern to develop understanding, insofar as thinking is a pre-requisite of understanding (Ramsden's active approach).

To conceive that holistic knowledge can contribute to greater understanding than is available through the knowledge of discrete components is, in effect, to conceive that holistic knowledge has a property over and above that of its separate components. It would seem, therefore, that Elizabeth intuitively, even if not explicitly, conceives holistic knowledge in this way.

Summary

Elizabeth recognises that nurses have a need for recall and lower level knowledge, but places greater importance upon understanding and higher level knowledge. She believes that nurses require integrated, holistic knowledge of the sort that is associated with deep understanding.

To conceive, as Elizabeth seems to, that holistic knowledge can contribute to greater understanding than is available through the knowledge of discrete components is, in effect, to conceive that holistic knowledge has a property over and above that of its separate components. It thus appears that Elizabeth, intuitively at least, conceives holistic knowledge in this way.

4. Learning/knowledge has a universal application

<----------->

Learning/knowledge is related to its context (including its political context)

The interviews with Elizabeth did not lead to any substantial discussion in this area. Elizabeth, however, did make one statement indicating that she conceives some nursing knowledge to be fundamental, in the sense that it is useful in any nursing setting; and other nursing knowledge to be very specific, in the sense that it is relevant only to very specific nursing situations:

> There is a basis for fundamental sort of knowledge they need to have ... which is useful in any setting but in any setting at the same time there's also very specific...knowledge and skills.
> (N3/4)

However exactly what Elizabeth means by "any setting" is by no means entirely clear. For example, she may mean exactly what she says; that is, that this sort of nursing knowledge is universal across time and place. On the other hand, she may mean that knowledge is relevant across many nursing settings of a certain sort, but not in a completely unqualified way. There may be limits of time and place. Some further discussion is required.

By implying, as she did during the interviews, that nursing knowledge is a form of knowledge in its own right, Elizabeth implies that knowledge is related to its context; that is, nursing knowledge is related to a nursing context.

Summary

Elizabeth explains that some nursing knowledge is specific to particular situations, while other knowledge applies to any nursing setting. Also by implying that nursing knowledge is a form of knowledge in its own right, Elizabeth implies that knowledge is related to contexts. Thus it appears that her conceptualisation in this category, lies towards the right-hand end of this continuum, but not at the end.

Conclusions

From the perspective of the frame (the four continuums) adopted for the purpose of analysing the case studies, Elizabeth's conceptualisation of teaching and learning is inferred to include the conceptions that:

- Nursing education is a continuing, open-ended process involving interaction between the means and the ends.
- In at least some instances, teaching and assessment of clinical practice ought not be separated.

- Nursing knowledge includes affective and intuitive knowledge, which cannot be described precisely, pre-specified and measured accurately.
- Nurses require integrated, holistic knowledge of the sort that is associated with deep understanding.
- Holistic knowledge has properties over and above those of its separate components.
- Some nursing knowledge is specific to particular situation while other nursing knowledge applies in any nursing setting.
- Nursing knowledge is a valid form of knowledge and is related to a nursing context.

Thus on the first continuum (separated <---> integrated), Elizabeth's inferred conceptualisation is close to the right-hand end, because she conceives that nursing education is a continuing, open-ended process involving the interaction between the means and the ends, and, in some instances at least, teaching and assessment of clinical practice ought not be separated.

On the second continuum (precise description/measurement <---> more than readily captured) Elizabeth's inferred conceptualisation is close to the right-hand end, because she conceives that learning/knowledge/skills comprises more than that which is amenable to precise description, pre-specification and accurate measurement, including affective and intuitive knowledge.

On the third continuum (discrete <---> holistic), Elizabeth's inferred conceptualisation is close to the right-hand end, because she conceives that nurses require integrated, holistic knowledge of the sort that is associated with deep understanding, and that holistic knowledge has properties over and above those of its separate components.

On the fourth continuum (universal <---> related to context), Elizabeth's inferred conceptualisation is placed, tentatively, towards the right-hand end, because her comments indicate the conception that some nursing knowledge is specific to particular situations while other nursing knowledge applies in any nursing setting. Also, by conceiving that nursing knowledge is a valid form of knowledge, she, in effect, conceives that a particular sort of knowledge is related to nursing contexts.

ANN : ANALYSIS OF CASE STUDY

Background

Ann qualified as a Registered Nurse in 1973. She then practised in an intensive care unit, a coronary care unit and in general medical-surgical nursing. In these areas, Ann had experience both as a staff nurse in a hospital setting and as a district nurse in a community setting, giving her a total of about ten years' clinical experience in the two settings.

Following her clinical experience, Ann first gained a teaching position in a hospital programme before gaining a position in the polytechnic system. At the time of the interview she had been employed teaching nurses and administrating nursing programmes for a total of approximately ten years. She holds a Masterate Degree with honours.

Ann chose to focus discussion in the third interview on a lesson on nursing research which she took with a second year group. Her lesson was designed to meet the requirement of *Learning Outcome 13*, of the unit *NT 111: Nursing Technology and Research 1*, of the nursing curriculum for the Bachelor of Nursing course, of the polytechnic concerned. The requirement is stated as: "Be able to conduct a literature review".

1. The means are separated from the ends of teaching/learning

<--->

The means are integrated with the ends of teaching/learning

Ann's statement, as follows, indicates that she varies the ends of her teaching sessions from the detailed "learning outcomes" set in the curriculum units in order to ensure that her students develop the knowledge which she believes nurses require. She explains that she uses an "interactive approach" in her teaching practice. It involves responding to relevant interests that are "triggered off" by the dynamics of the classroom interaction (teachable moments), to "maybe go off on a tangent a bit" and "talk about it (the matter of interest) and sometimes it'll be quite irrelevant to what you're teaching", but helps students to make links between the discrete units:

.... and I tend to have in the classroom a kind of interactive ...approach.... to my teaching so that... even though it's fairly structured I like to ... have the students ask questions or make comments and so... I always respond ... // ... and so this is maybe the right time to maybe go off on a tangent a bit... and to talk about it and sometimes it'll be quite irrelevant to what you're teaching but something will trigger for the students - you might say something and it might trigger something from another tutor even - another lecture session that they've had ... // ... papers are quite discrete units ... and we don't have the same integrated curriculum that we used to... because it's a nursing curriculum ...there is...an integration. Hopefully we are making links in the students' minds ... // ... and so I'll stop and explain it ... because that's the time that... they made the link ...

(N1/4)

Ann's statement suggests that she feels a degree of tension with the new curriculum's emphasis upon discrete units, compared with the previous curriculum's emphasis upon holistic knowledge, a point that is taken up again under the third heading of this analysis.

The next two quotations indicate that Ann conceives learning to be a continuing, open-ended, career-long process. In the first of these quotations she refers to changes in nursing knowledge and the consequent need for nurses to continue to learn. Further, Ann is concerned to develop in "our students...the ability to think critically" and thus the ability to "perhaps be able to change

things...for the better". In effect, Ann talks about encouraging her students to develop a process whereby they can continue to learn and, in so doing, contribute towards change for the better of nursing:

> No I don't think I'll ever stop learning...about nursing - yeah and it's changing all the time, like everything else...so what we can teach in three years is... just a beginning...it sounds very ... patronising doesn't it - to say you have to instil in our students...the ability to think critically, to be able to make decisions and to be able to ...take responsibility for those decisions and ...to look at what's happening around them ...and to perhaps be able to change things .... for the better....using the knowledge that they have gained and the knowledge that they will gain during their practice.
>
> (N1/2)

An implication of Ann's statement is that she conceives that nurses, themselves, ought to be responsible for developing nursing knowledge and thus determining the ends of nursing education.

In the following comment on the lesson on research which she had recently taught, Ann explains how she aims to "enthuse" her students rather than simply providing them with facts to write down and store away. Her hope is to "engender" in them "a life-long research mindedness":

> ... to enthuse them really so that they develop an enthusiasms for research ... but it's not just a topic to be learned and written down and stored away but that they do find it interesting and yes that they're motivated to... // ... It's a life-long research mindedness that we're trying to instil in them ...instil in them - sounds a bit kind of ah - paternalistic doesn't it? - Engender is a better word.
>
> (N1/1)

Achievement of this aim would provide all her graduates with the means whereby they could continue to contribute to nursing knowledge throughout their careers and, at the same time, a process whereby they could continue to learn themselves.

The foregoing discussion suggests that Ann not only conceives teachers ought to be responsible for the means and the ends of teaching, but also that she takes this responsibility upon herself in her own teaching practice. She provides

further insight on this matter when she responds to a question concerning the extent to which she has the official course outcomes in mind as she teachers, compared with her own knowledge of what is required.

Ann says that both the official outcomes and her own knowledge are important and that, in fact, both are reasonably well in agreement. She elaborates that she and her colleagues wrote the outcomes themselves. Consequently they were able to ensure, within the requirements of the NZQA's model, that the needs of the nursing profession, as they saw them, were included. They worded the outcomes so that the curriculum included the things "we know nurses need to know":

> ..... a very valid question in nursing education... // ... especially with NZQA ... // ... maybe it's once nursing education came into polytechs and out of hospital schools of nursing we've...been more structured and...the expectations of having very clear outcomes and ... very rigid processes...It's been more difficult to relate theory to practice since we came into the polytechnic... into tertiary education and that's... been a real criticism...of nurses...So I think we tend to teach them things that we know nurses need to know...But the outcomes ... we have a lot of control over the outcomes even though they are prescribed...and we can word them in such a way and set them out in such a way that we - that they meet the needs of what *we* perceive as being the needs of the ... nursing profession.
>
> (N1/4)

Summary

Ann uses an interactive approach in her lessons, thus involving students and, when appropriate, following interests triggered off by the dynamics of the class. She conceives learning to be a continuing, open-ended, career-long process in which the means are integrated with the ends. Nurses, she believes, need to learn not only about keeping up with changes in nursing knowledge, but also to think critically so that they can institute changes for the better. Ann further believes that students ought to take responsibility for their own learning. By teaching them to think critically, she encourages this sort of responsibility And, by engendering in them enthusiasm for research, she equips them with a process

for continuing their own education in nursing and for contributing towards the development of nursing education.

Although Ann has some concerns about the way the present curriculum is structured, she is satisfied that it allows her to teach what she believes nurses need to know. Ann and her colleagues were involved in writing the curriculum and thus were able to ensure that it was satisfactory in their eyes.

2. *Learning/knowledge/skills are capable of precise linguistic description, pre-specification and measurement*

<----------->

Learning/knowledge/skills cannot be readily captured in linguistic description, pre-specified and measured

In the following quotation, Ann describes three hierarchical levels at which learning occurs in the nursing course. They are the skills level, which involves learning to "do" things or perform skills; the cognitive level, which involves understanding the rationale underlying skills; and the valuing level, which involves developing attitudes, ideals and a professional philosophy of nursing. She makes the point that the three levels "interact":

> ...nurses will learn the skills [the first level] of something like research - like literature review - but they need to understand why a literature review is important...so that's the cognitive level [the second level]... and I still think in terms of Bloom's taxonomy although it's a very... technical-rational paradigm to work from - but... they learn the rationale for the skills and then they learn the ...values and...incorporate into their own particular philosophy of nursing...those values and ideals [the third level]....That's how I feel about learning, that it occurs on those three levels and that those levels interact... and to learn the skills they have to usually be able to do it - like they have to be able to physically do things... to be able to acquire... that knowledge...and to be able to understand the rationale for why they're doing it they have to...see the connection - it has to make sense to them.
>
> (N1/2)

Ann describes a hierarchical progression of learning that is, in effect, a progression from practical (skills) to theoretical/conceptual (cognitive and valuing). An implication is that lower-level learning is kinaesthetic and higher-

level learning is cognitive. Her emphasis upon understanding reflects *some* similarity with the interpretivist paradigm (Carr and Kemmis, 1987) and an *indication* of similarity with Habermas's (1972) practical interest (see Chapter Five). Also, it is an emphasis which is consistent with Ramsden's approach to deep learning (see Chapter Five).

From Ann's description of learning we might expect some, but not other, aspects of learning to be readily amenable to precise description, pre-specification and measurement. In this respect, it would seem that skills or "do[ing] things" would pose few difficulties. Understanding, as an abstract concept, might pose greater difficulties, but not insurmountable difficulties if indirect measures or indicators (Anderson, 1990) were accepted. Valuing, however, would be likely to defy precise description, pre-specification and measurement, particularly insofar as, in Ann's words: "they [the students] learn the values and incorporate into their own particular philosophy of nursing ... those values and ideals".

In the next quotation, Ann stresses the point that nursing practice includes everything nurses do, not just the skilled tasks they perform. In addition to identifiable skills, nurses require inter-active abilities, the ability to empathise, appropriate attitudes and the knowledge and skills required to be culturally safe:

> Nursing practice is everything that nurses do in their practice ... // ... includes identifiable skills plus more things - more than just identifiable skills - attitudes, approach and interactive abilities, empathy, establishing rapport ... //... cultural safety is basic to nursing practice
> (N1/2)

Clearly Ann conceives that teaching and learning ought to be concerned with more than outcomes which can be described precisely, pre-specified and measured accurately in the manner required by the objectives/outcomes model, described in Chapter Three. In the next quotation, Ann describes tacit

knowledge, another of the forms of knowledge which does not - and by definition, cannot - comply with the objective/outcomes model's requirements.

Ann describes how nurses develop tacit knowledge based upon their experiences. They come to recognise, at a sub-conscious level, recurring patterns in the responses and situations of those for whom they are caring. It is a form of *knowing-in-action* (Schon, 1983; 1987) and is recognised by Benner et al. (*op. cit.*) as an aspect of *clinical judgement* (see Chapter Three). Experienced nurses know immediately what to do and how to respond in particular, holistic situations:

... and it just becomes like second nature ... we call that tacit knowledge - you see - but...as we've become more experienced we build up patterns and ... we don't actually know exactly why, but we just know by looking at somebody that they're going to die in the next half hour ...

(N1/4)

The development of intuitive knowledge, however, Ann explains, requires experience beyond the nursing course:

.... to begin to develop the tacit knowledge...they're not ... able to do that until they've been registered for probably two years...before they start to be able to look at things ... and look at the whole person and start to draw on different aspects of what they've learnt to come together in this particular incident...It takes about two years of experience to ...be able to do that... We don't get that far by the end of the course.

(N1/4)

In the next quotation, we learn that intuitive knowledge plays an important part in Ann's own on-going evaluation of her teaching:

.. because I know whether I've been successful - I just know ... // ... you get a sense of how well you - I've been teaching... just by the way the students interact - the way the questions are asked, how well I answered them and just that...//... it's something that happens in the classroom between the group and the teacher but I feel that I know - sometimes I come out thinking gee I really...feel as if I did that well - you know sometimes I think that...Sometimes I think gosh that didn't go very well... or... I know when I've done well, and know - I believe - when I haven't done well ...

(N1/4: 216/b)

When discussing her lessons on research, referred to above, Ann states that she believes "nurses should be able to find opportunities (for research) in nursing

practice - use opportunities to build up the basis of nursing knowledge". (N1/1). She aims to "enthuse them" (her students) and "engender" ..//.. "a life-long research mindedness" (N1/1) in them. Clearly Ann conceives learning to be continuing and open-ended, which necessarily means that it cannot be pre-specified in accordance with the requirements of an objectives/outputs model (see Chapter Three). Nor does the aim, or desired outcome, "to enthuse them" come within the models requirements. The critical, emancipatory aim which Ann describes [quoted more fully previously under category (1)] is also open-ended. She states:

> ... trying to instil in our students...the ability to think critically, to be able to make decisions and to be able to ...take responsibility for those decisions and ...//... to perhaps be able to change things .... for the better
>
> (N1/2)

An emancipatory aim is necessarily open-ended as it quite intentionally challenges the current ends (see Freire, 1972; in Chapter Four) and emancipation is inextricably linked with the freedom of others and thus with the moral values of truth and justice. Democratic debate is required rather than imposition by the power-holders (Habermas, 1972; Grundy, 1987; see Chapter Five).

While Ann's aim in her lesson on research may go beyond the official aim for the unit, it is within a more general (and difficult to measure) aim included in *The Profile of the Graduate;* (i.e., "Value research activities and foster the spirit of enquiry, the concern for ideas and their application; have the confidence to investigate and solve problems, and be able to recognise the advancing nature of knowledge and practice. ...").

Ann clarifies the existence of two sorts of outcomes in the curriculum. She describes those at the end of each unit as being very specific. In contrast, she

points out in the following statement, the outcomes in the graduate profile are not measurable, but require the lecturers' professional judgements:

> ... we have the..."Profile of the Graduate" we call it....which is what we would expect our graduates to be like... at the end - having done this three year course... and those outcomes are not measurable but they're based on professional judgement ...
>
> (N1/2)

The Profile of the Graduate had been approved by the NZQA as part of the course curriculum. Yet, although it provides a useful outcome statement against which lecturers may exercise their professional judgement, it is hardly consistent with the NZQA's objective/outcomes curriculum model and its requirements concerning precise standards (see Chapter Three).

Summary

Ann conceives that there are three different forms of teaching and learning required on the nursing course: skills, cognitive and valuing. Each involves a different level of knowledge. She explains that skills, the lowest level, involves doing; cognitive, the next level, involves the rationale for doing; and valuing, the highest level, involves incorporating ideals and values into the students' own philosophies of nursing.

Although knowledge in the form of skills is likely to be amenable to the precise description, pre-specification and measurement required by the objective/outcomes model, cognitive abilities are likely to pose difficulties and valuing to defy such treatment.

Other forms of knowledge which Ann conceives to be important for nursing, but which are not amenable to precise description, pre-specification and measurement, include intuitive knowledge, attitudes, interactive abilities, the ability to empathise, the ability to establish rapport, the ability to be culturally safe, and research mindedness. Further, Ann's conception of learning as on-

going and open-ended is incompatible with the notion of precisely describing outcomes prior to teaching and learning.

3. Knowledge comprises the sum of discrete components

<--->

Knowledge has holistic characteristics over and above the sum of its separate components

The Profile of the Graduate, to which Ann refers above, describes the integrated knowledge and skills which the course aims to develop in its graduate nurses. Ann, herself, in the first quotation above (in section 1), stresses the need for nurses to make "links" between the "discrete units", "because it's a nursing curriculum ...there is...an integration". She makes this point again, concerning the need for an holistic sort of integration, in the following quotation:

> ... because nursing is a holistic...sort of interaction...whereas we're teaching here...in building blocks - so it's not until the third year...that we know whether it has all come together...The integrating feature of nursing now is the practicum - is the clinical that they do... So...we attempt to...draw together all the threads...of what they've been learning in the theory...because what I've been talking about here is the theory...part of nursing ...
>
> (N1/3: 2)

Ann also, as she did in the first quotation above (in Section 1), expresses some uncertainty or tension about whether the course structured as it is in discrete units will achieve the necessary integrated, holistic knowledge. However she suggests that practica is the "integrating feature of nursing now"; that is, of the nursing course as it has been developed in recent years in polytechnics. She indicates as she did in an earlier statement, part of which is quoted again below, that there is a separation of theory from practice and that these two aspects need to be brought together to achieve an integrated, holistic understanding:

> ..It's been more difficult to relate theory to practice since we came into the polytechnic...
>
> (N1/4)

The following segment from the interviews again indicates tension between a course structured in discrete units and the need for integrated, holistic knowledge. It also suggests that Ann and the other lecturers attempt to make up for the deficiency in the curriculum design by fitting in what they believe the students should know:

Interviewer:
Yes - so all those bits have to somehow come together?

Ann:
Well in nursing education we feel that, but the way the curriculum is structured now we can't do that - we can't do it that way - we're not expected to and we don't do it - but that's something that is frustrating.

Interviewer:
Yet the profile that we looked at in the last interview brings a lot of the things together.

Ann:
It does. ...At the end of three years... hopefully they will have made those connections - that they will have synthesised the knowledge and started to...develop their own sort of ...critical thinking skills...so that they can... bring it all together ... //.... nursing is really a holistic...the knowledge for nursing is integrated from a whole lot of different areas...so to actually do things in discrete units... I suppose it's difficult for lecturers to know whether we are - and yet the curriculum should spell that out - but again we all go in with our own idea of what we believe the students should know...and...and so we fit it in somewhere but we don't have any idea of what others...are really teaching in that informal kind of interaction... that goes on between the student and lecturer.

(N1/3)

Summary

Ann conceives nursing to involve holistic interaction. Thus she believes there is a need for students to develop a holistic perspective. She indicates tension and uncertainty that the course, which is structured in discrete units, will lead satisfactorily to the attainment of integrated, holistic knowledge; but, nevertheless hopes this will be achieved through the practica. She believes that individual lecturers try to make necessary links amongst the discrete units to provide the integrated, holistic knowledge required; but suggests that these are isolated efforts and the need is for a coordinated approach.

From her comments, it is clear that Ann conceives holistic knowledge to involve understanding over and above that available from knowledge of a number of discrete units.

4. Learning/knowledge has a universal application

<----------->

Learning/knowledge is related to its context (including its political context)

In an earlier quotation (under "1"), Ann stated that she attempts to instil (engender was a word she used later) in her students "the ability to think critically" and to make responsible decisions concerning change for the better. As previously suggested, she, in effect, conceives that nurses ought to be responsible for developing nursing knowledge and determining the ends of nursing education. Her overall aim is emancipatory involving the development of nursing knowledge and the betterment of nursing. An implication that arises from her statement is the conception that nurses have their own perspective, which is different from that of those in whom control of the present curriculum is vested, or that nurses may develop a different perspective in the future. In this sense, then, Ann conceives that knowledge is related to particular interests rather than existing in a universal form.

Ann's statement, as follows, suggests that she conceives knowledge is related to particular contexts, insofar as she argues for the development of nursing knowledge relevant to the New Zealand situation:

> Once registered, a nurse should be able to find opportunities (for research) in nursing practice - use opportunities to build up the basis of nursing knowledge, especially in the New Zealand situation - ... // ... little nursing research ... // ... in its infancy in terms of publications
>
> (N1/1)

The following segment from an interview indicates that Ann also conceives knowledge to be related to a context that includes issues of power and politics.

The issue under discussion is cultural safety, an aspect of the nursing curriculum that attracted considerable media attention at about the time of the interviews.

Essentially, Ann argues that, through developing nurses' research skills, she is helping to provide a means that will assist nurses in gaining professional autonomy and, by implication, power for nurses to determine nursing knowledge and the ends of nursing education:

Ann:
...cultural safety is basic to nursing practice if our - if nurses are not culturally safe then - cultural safety is just a label that's been recently attached to something that we've always included in our ... because it's convenient - I think nursing is suffering from scapegoating because a lot of people sort of feel that there's far too much going on in New Zealand at the moment and that they're being far too easy on some groups of people and so nursing is a convenient target because we're seen as being people who are easily bullied and I actually feel quite angry about what's happening at the moment ... so I would like to think that ...

Interviewer:
So why do you feel angry?

Ann:
Well because I think that we are perceived as being a powerless group of people who can be used for some politician's political gain and I think that that's one of the feelings that I suppose I take with me into my teaching and also it's one of the reasons that developing a research mindedness is important for our students. I can see it in a lot of different facets of students' and nurses' lives, like when a politician says I have had 200 letters from my constituents saying that they're really concerned about cultural safety and I would like them to be able to say well show me those 200 letters and not just accept that because a politician says that he has had 200 letters that he has in fact had 200 letters. Now that's the sort of thing that becomes important that they critically evaluate everything that they don't just take things at face value - and that is a skill that is - that develops over time with nurses that a course like this - maybe accelerates that process.

(N1/2)

Summary

By arguing for student nurses to develop critical thinking skills in order to introduce changes for the better and for nurses to take responsibility for developing nursing knowledge, Ann indicates that she conceives knowledge to be related to particular interests, rather than to exist universally. Similarly, her argument for the development of knowledge relevant to the New Zealand situation indicates that she conceives knowledge to be related to a particular context. Finally, the example she provides of developing research skills in order

to refute unjust statements by politicians indicates that she conceives knowledge to be related to a political context.

Conclusions

From the perspective of the frame (the four continuums) adopted for the purpose of analysing the case studies, Ann's conceptualisation of teaching and learning is inferred to include the conceptions that:

- Nursing education is a continuing, open-ended, career-long process in which the means are integrated with the ends.
- Critical thinking skills and research skills provide the means for continuing to learn and for developing nursing knowledge.
- A number of forms of knowledge which are important to nurses are not amenable to precise description, pre-specification and accurate measurement. They include intuitive knowledge, attitudes, interactive abilities, the ability to empathise, the ability to establish rapport, the ability to be cultural safe, and research mindedness.
- Holistic knowledge is important in nursing.
- Holistic knowledge involves understanding over and above that which is available from knowledge of a number of discrete units.
- Knowledge is related to particular interests, including political interests; and to its context.

Thus on the first continuum (separated <---> integrated), Ann's inferred conceptualisation is close to the right-hand end, because she conceives nursing education is a continuing, open-ended, career-long process in which the means interact with the ends.

On the second continuum (precise description/measurement <---> more than readily captured) Ann's inferred conceptualisation is close to the right-hand end of the continuum, because she conceives that a number of forms of knowledge which are important to nurses are not amenable to precise description, pre-specification and accurate measurement, including intuitive knowledge, attitudes, interactive abilities, the ability to empathise, the ability to establish rapport, the ability to be culturally safe, and research mindedness.

On the third continuum (discrete <---> holistic), Ann's inferred conceptualisation is close to the right-hand end, because she conceives that holistic knowledge is important in nursing and that it involves understanding over and above the understanding available from knowledge of a number of discrete units.

On the fourth continuum (universal <---> related to context), Ann's inferred conceptualisation is placed at the right-hand end, because she conceives that nursing knowledge is a valid form of knowledge (that is, knowledge related to its context). Ann also conceives that, as well as being related to its context, knowledge is related to particular interests, including political interests.

ERNIE : ANALYSIS OF CASE STUDY

Background

Ernie is an experienced clinical nurse and nurse educator. His clinical experience includes two years in intensive care, a period as a nurse anaesthetist, as well as administrative experience as a charge nurse and a nursing supervisor. At the time of the interviews, Ernie had a total of eight years' experience as an nursing educator, including experience as an administrator in this field, too.

Ernie's basic qualification is that of a registered nurse. He also holds two supplementary qualifications, each gained on completion of an additional one-year course. One in intensive care and, the second, in anaesthetics. More recently he completed a BA in nursing and has begun study towards an MA. His formal qualification for teaching, in addition to papers studied as part of his degree courses, is a Tutor Education Centre (TEC) Certificate, the certificate awarded on successful completion of the twelve-week tutor (lecturer) training course for polytechnic lecturers.

Ernie chose, as his focus for discussion in the third interview, a lecture on research which he gave, as part of the unit on research, to a group of qualified nurses completing the part-time, bridging course to up-grade their qualifications to a Bachelor of Nursing. It was at the second year, or 200 level, of the degree. Ernie also teaches the topic of research, at the 200 level, in the full-time course for the under-graduate students seeking both registration as a nurse and a degree in nursing.

Analysis

1. The means are separated from the ends of teaching/learning

<----------->

The means are integrated with the ends of teaching/learning

By defining learning in terms of "being able to manage the process of change", rather than learning facts, Ernie indicates that he conceives learning as a continuing, cognitive process inhering in the learner, rather than as an end or product that exists apart from the learner:

> ... for me learning....has not so much to do with teaching but has far more to do with people being able to ...manage the process of change... //...because ...we live in a world that's continuously changing and whatever you learn today is out of date in a couple of weeks or a couple of months... and so rather than learning facts... I think that what students should be taught is to learn how to cope with the change, what the process of change is...so that they become independent learners ..
>
> (N2/2)

It seems that Ernie does not see teaching and learning in terms of didactic instruction in keeping with the empty vessel metaphor, but in terms of empowering students by helping them to develop learning processes and thereby enabling them to become independent learners. He expects them to take responsibility for their own learning:

> ... for me it's extremely important...that students ... realise their own potential ... and I think that in the old fashioned way of teaching students were really treated as empty vessels ....and all the information was given to them...I think it's against empowerment ...If you want to empower students, then ...one of the things that I think is important is to share with students what ...the learning outcomes are ...and, while I [can] help with those learning outcomes by providing lecturers and tutorials, at the same time I - I absolutely have the ... expectation ...that students will go the way themselves as well ... they know that they can get help, but at the same time they should try to say, "Right I can get there myself."
>
> (N2/2: 239)

Interestingly, in his discussion of critical social science, Fay refers to a tripartite process of enlightenment, empowerment and emancipation. He explains that empowerment is "an enabling, motivating resource for its (critical social science's) audience" (Fay, 1987:29), and, further, that it has emancipation as its goal. Thus, according to Fay's conception of empowerment, Ernie may be empowering his students by assisting them to learn for themselves but, at the same time, he may be thwarting their emancipation by requiring them to achieve predetermined learning outcomes. He is developing the means for emancipation, but controlling rather than encouraging debate and action in relation to the ends (see also discussion of Freire's notion of empowerment in Chapter Four).

In the next quotation, Ernie explains, in effect, how he used to teach in the manner of a didactic instructor, but has now adopted a facilitating role. He "want(s) the session to be directed by the students" and "to flow": His explanation implies that an iterative process (Hall, 1994; Stevenson and Laird, 1994) takes place, which, in turn, implies the integration of the means with the ends of the lesson:

... and so my teaching's different as well...from...the very first two years I was really far more lecturing ...telling them and going in with notes and keeping strictly to the notes and being prepared for all sorts of questions. Well now I go in with a minimum of notes, a minimum of structure because I want the session to flow - I want the session to be directed by the students.

(N2/3: 500)

Ernie explains, as follows, how he tries to ensure that the planned *learning outcomes* for the session are reached, but on occasions the lesson gets "bogged down" and "one or two things" are not achieved. It seems that Ernie's facilitation includes a strong focus upon the planned learning outcomes. To achieve anything other than the planned ends is to get bogged down. Again, it seems that Ernie conceives the means of teaching/learning may be varied, but not the ends:

... the only thing that I ensure is that I somehow reach the learning outcomes ...but the road that I take might be different even if I take the same session for another class...because very much depends on the students...on their questions, their reactions...in relation to the discussions that they have...You might move faster than at other situations when for some reason - and whether that's me or not I don't know - sometimes you get bogged down and you go in a circle because the students for some reason don't get it or I'm unable to explain... And so you know while most sessions...end up reasonably the same ... [I] cannot guarantee they will...and... in case ... we haven't achieved one or two things...I really wanted to achieve, I just tell the students and ...ask them to ...to read it up... refer them to certain books, certain articles.

(N2/3: 175)

However, in the next quotation, Ernie states that he considers the planned learning outcomes to be minimal and aims for his students to attain more. This statement, then, does imply that he conceives an integration of the means with the ends of education:

Yeah ... because I also see it as a minimum. I don't see ...the curriculum outcome as ... the end of it - I just see it as the minimum...outcome ...In certain areas we might, I don't know, we might just reach that minimum but I hope that in a number of other areas that we really exceed that minimum..

(N2/3: 226)

Ernie, in accordance with the curriculum, places importance on developing students' ability to think reflectively. To develop this ability, students are required to "journal"; that is, to write about and analyse their clinical

experiences. Ernie explains how reflective thinking provides students with the means for developing their own knowledge of nursing practice, thus enabling them to practise in situations that are new to them:

> ... so ...the patient was crying and you did something...and then afterwards you...think back....on what you did when you came into that room and .....and how did the patient react to what you did...So if you say," Well ...maybe I wasn't very ...effective ....Or maybe ...what I did was wrong and maybe I should have done that."... but it might be that ...you can say, "Well it was really amazing that this patient was ...very sad and I just spent some time with her and the moment that I put the chair by her bed, she really calmed down and ...we had a little bit of a discussion and she really cheered up a lot. So...for me next time when something similar happens, quite likely I'm going to respond in a similar way". ...Well if ...the next time ... you do that ...and this patient gets even more frustrated and angry, ...then you might write ... that really it didn't work ..you just say, " Well I'm .. puzzled ... and I've discussed this with the staff nurse ...who suggested this or suggested that, so tomorrow I'm going to try this or try that." So reflective ... practice is the answer I think.
>
> (N2/4b: 179)

Central to journalling, as described by Ernie, is a process involving the integration of the means with the ends of teaching/learning. It is a dialectical process - a form of *praxis* - in which reflection and action are mutually constitutive of each other (see Carr and Kemmis, 1986). Ernie's advocation of journalling indicates that he, at least intuitively, conceives the means are integrated with the ends in some forms of teaching and learning.

Summary

Ernie indicates that he conceives learning as a continuing, cognitive process of change, rather than as an end or product that exists apart from the learner. He aims to adopt an interactive teaching style and to empower students. It seems that he integrates the means and ends of teaching and learning in a teaching process, until he reveals his concern to ensure that the ends specified in the curriculum are attained. Then it becomes clear that, in his teaching practice, only the means are varied. To control the ends in this way is disempowering rather than empowering (Carr and Kemmis, *op. cit.*; Freire, *op. cit.*)

Other aspects of Ernie's teaching, such as going beyond the curriculum requirements, encouraging and assisting students both to reflect on their nursing practice and to develop a process whereby they can continue to learn independently, are by their nature open-ended rather than closed and thus have greater potential to be empowering. The latter two - reflecting and developing an independent learning process - are likely to involve an integration of the ends and means in a dialectical process.

2. ***Learning/knowledge/skills are capable of precise linguistic description, pre-specification and measurement***

<----------->

Learning/knowledge/skills cannot be readily captured in linguistic description, pre-specified and measured

Ernie distinguishes between knowledge which is quantifiable, such as skills and facts, and knowledge which is not quantifiable, such as that required in caring. He believes that nurses need to learn both sorts of knowledge:

> ... and we have sometimes arguments about that...among the staff because some staff, I think, go too much towards...the not-so-quantifiable things...Say, for instance, if your focus totally becomes on caring...then you produce nurses without knowledge...While you need to know how to care, you also need to know what to do in certain situations...//...one exact way .... and that's absolutely exact knowledge ... there's no two ways about it...
>
> (N2/3)

By stating that if lecturers go too much towards "...the not-so-quantifiable things...//...then you produce nurses without knowledge...", Ernie indicates that he does not regard non-quantifiable things as real knowledge. In effect, Ernie's view is a manifestation of what Elley (1996a) warns us of when he argues that measurable knowledge and skills captured by standards-based assessment are likely to be seen as the most worthwhile knowledge (see Chapter Five).

In response to the interviewer's question concerning intuitive knowledge, Ernie explains how he believes it is based upon very clear experiences from the nurse's

past which are brought to bear on a present situation, but without the nurse being able to make specific links between the past and present experiences:

For me intuitive knowledge ... it's not something that you do...just willy nilly out of the nothing - I mean it's definitely based on very...very clear experiences from the past...but the thing is that you don't link it strictly to those experiences

(N2/3)

Ernie's explanation of intuitive knowledge is, on the surface at least, consistent with Schon's (1983, 1987) views outlined in Chapter Four. However Ernie, unlike Schon, emphasises the rational basis to intuitive knowledge. In the light of his above comment indicating that non-quantifiable "things" are not knowledge, it may be that Ernie wishes to recognise intuitive knowledge as real knowledge and thus stresses its rational basis.

In the next quotation, Ernie comments on his own experience of intuitive knowledge when he first walks into a class of students. His comment clearly shows that he both recognises the existence of such knowledge and that he finds it difficult to define:

I think it's just more intuition ...I mean ... when you go to a class... you know what type of class you will get - whether it will be a talkative class or whether it will be a very quiet class ...and ...I think you know - you just look at how the people are sitting ...where they are sitting... how attentive they are just when you come in...I mean there are a number of things... most times I'm right but ... if you would say, "Well just number them." I don't know - it's just something ... that you know when you come in.

(N2/3)

During a discussion about whether qualitative aspects of nursing such as caring could be specified adequately and taught as learning outcomes, Ernie argues that even the experts define it in different ways. He, nevertheless, believes there are a number of 'lines' that can be focused on. He concludes that aspects of caring are really learned without being taught. Overall, Ernie's comments indicate that caring is, indeed, difficult define:

... that is a difficult ...topic ...you cannot ...find a definition of caring anywhere ... I mean every single book will have a definition of caring and you put them all together and none of them is exactly the same...but there are definitely a number of lines that go through the caring ...and they are the type of things that we will focus on. So, for instance, when you look at

empathy... and being able to relate ...and build up a relationship with somebody and express feelings for the person, they are the type of things... I don't think you need to teach that I think that - yeah, I think that students learn it without it being taught.

(N2/1)

Ernie also states that its important for the lecturers to "role model" caring.

...if we want to be caring nurses then we have to be caring teachers

(N2/1b)

Ernie's last two points - that learning about caring is "caught" rather than "taught" and that lecturers ought to role model caring - may well come together in the same process; that is the role modelling may be the means by which caring is "taught". This is an instance where the means (role modelling) must be consistent with the ends (to be caring), not simply the most efficient means of attaining the end. In a sense, the means are the desired end (or represent the end) and it is the students' experiences during the course that assume importance. The notions of the means and end being mutually constitutive and of experience being more important than outcomes are accommodated within a process model, but not an objectives/outcomes model (see Chapter Three). Nor is role modelling accommodated within an objectives/outcomes model. It is not amenable to the precise description, pre-specification and measurement required.

In the next quotation, Ernie distinguishes between assessing caring theory and caring in a practicum. He believes that theory can be assessed "tightly", essentially, because lecturers can devise questions which require specific answers; but argues that it is "extremely hard" to assess caring in a practicum setting. Ernie suggests that in a practicum only the person being cared for and the carer actually know whether the relationship is a caring one. "A third person (lecturer) who is looking at what's happening is not able to see whether it's a caring one (relationship)":

Yeah ...well measuring caring or assessing caring in the practicum is extremely hard to do and, to be honest, nobody knows how to measure it. There are at least 50 articles written over the last ten years on assessment of caring in a practicum and we don't know how to do it ...One of the theorists even goes that far that she says that maybe caring is something that only is measurable and is observable between the carer and the cared for,...so that an outsider a third person who is looking at what's happening is not able to see whether it's caring...And so we can only assume that if things look normal and in a caring sense [laughs] that we say, " Right, caring is occurring here."...So that's the practicum and I do agree ... but when you talk about a theory of caring then it is a totally different ball game. ..You can use different theories of caring I don't mind, but if I set an exam or an assignment in which I say I want you to analyse caring and I want you to apply it to some sort of simulated setting and then explain...how the caring theory is applied in that setting, you can exactly measure it. I can say ..."Does this student interpret theory in the way it was intended by the theorist?" ...and then " Is this student able to ...relate this theory into simulated practicum setting...?" The student might, for instance, say, " I'm applying it to an elderly person or ...at ...a young family...and so you can see how it's related ... to that aspect. So I think there is there is a big difference

(N2/4b)

Ernie does not answer the question of how caring in a practicum can be satisfactorily included in a curriculum based upon an outcomes model. Instead, he implies that it is satisfactory to simply include the theory of caring in the curriculum within the requirements for precise description, pre-specification and measurement. The rest will somehow happen or be "caught", especially if the lecturers are caring role models.

Interestingly, however, in the next quotation, Ernie expresses ambivalence concerning the efficacy of examinations. On the one hand, he believes the lecturers ought to measure what the students have attained and the system demands it; but, on the other hand, he indicates uncertainty about the validity of short-answer responses used in the nursing examinations:

... but again I'm very ... ambivalent about what to do about it because on the one hand I can see that somehow you should be able to at least measure a certain degree of ...what students... have...learned...what have they mastered? And yet on the other hand I say...this is really...the modernist paradigm that you need to be able to tick boxes and if you can't tick it, it means that the students doesn't know it ...I'm not so sure about that. I never talk openly with the students about this...but it's a big dilemma for me ...

(N2/2)

Ernie recognises that discrepancies exist between results in written examinations and students' actual nursing abilities. Yet he does not appear to recognise the problem of teaching and examining theories about caring that may not be

consistent with students' actual abilities to be caring in clinical nursing situations.

In answering a concern raised by the interviewer, Ernie argues that the written learning-outcomes in the curriculum are very specific. He refers to an outcome from the section *Nursing Technology and Research II,* which states: "Students will be able to: 1. Utilise various skills appropriate to identified situations"

Ernie explains that the statement is "tight" because it states that the skills chosen must be appropriate to an identified situation. This also means the outcome can be tested, through the creation of a particular situation with specific requirements. Further, [because particulars are not given], the outcome statement has the flexibility to accommodate different practical situations in a changing world. Ernie states:

> Yeah - *Utilises various skills appropriate to identified situations*...If you teach the students for the here and now you say," This is the situation and that's it." ...But, of course, we all know that that's not reality...and that...what is appropriate today might not be appropriate tomorrow - ....it might not be appropriate in this context...So while ...I feel the curriculum is ...tight in the sense that it talks about various skills - it talks about [the ways] that those ....skills are utilised appropriately...You can make it ...forty different situations ...so in that sense ... the curriculum is very open...But in the testing we can be extremely tight. So I disagree...when you say, " How can you ever measure it?" because we can create a situation and say this is the identified situation. For instance we are ...looking at cultural safety ...and getting in actors - Maori actors - Pacific Island actors - they will act a certain situation ... and so the students will then respond to that situation...
>
> (N2/4b)

Elsewhere, Ernie suggests that, given the requirement to gain NZQA's approval for changes to the curriculum, there are advantages in avoiding the inclusion of the detailed specification of outcomes and assessment procedures:

> ... your curriculum should be ...should only have the bare bones ...because it is all NZQA approved so the moment that you put heaps of fine details in - the moment that you change those fine details ... you have really to go back to NZQA and say, "Well we have some changes here - can we do this? can we do that?"
>
> (N2/2b)

Later in the same interview, Ernie describes the importance of carefully wording curriculum statements relating to assessment procedures. He illustrates with the example of "may include" rather than the more obligatory "procedures include":

> ... but you can get around it - it's more a word play I guess....When we came to ...to assessment, for instance, it said somewhere, "Assessment procedure*s include* boom, boom, boom, boom... " Well we ... we will be changing it on all the papers and ... it will state .... "...*A*ssessment procedure*s may* include...
>
> (N2/2b)

Summary

Ernie distinguishes between knowledge which is quantifiable, such as skills and facts, and knowledge which is not quantifiable, such as that required in caring. He believes that nurses need to learn both sorts of knowledge. However, in describing them he suggests that to focus too much upon caring is to "produce nurses without knowledge" An implication of his wording is that he favours rational knowledge rather than qualitative knowledge.

Although he recognises intuitive knowledge, Ernie stresses its rational basis in people's experiences, even if they are not able to make direct links with the particular experiences. He admits that caring is "extremely hard" to assess in a practicum, but argues that caring theories can be assessed "tightly" in classroom teaching. Although some of the written outcomes in the curriculum do not appear to be amenable to precise measurement, Ernie argues that they are because, in effect, they are interpreted to have specific meanings by the lecturers. This implies, according to the discussion in Chapter Four, that the course assessment is normative not standards-based as required by the NZQA's model.

Thus Ernie conceives that some forms of nursing knowledge in a practicum setting are not amenable to precise description, pre-specification and accurate measurement. But he appears to conceive that, in other situations, nursing

knowledge is capable of precise description, pre-specification and accurate measurement.

3. ***Knowledge comprises the sum of discrete components***

<--->

Knowledge has holistic characteristics over and above the sum of its separate components

Ernie points out that one of the aims when nursing education underwent changes in the 1970s, first in England and then in New Zealand, was to "educate rather than train" students. The emphasis changed from knowing "what" to knowing "why". Understanding why things are done in a certain way and the relationship between things are, Ernie believes, important. He continues:

> ... you can train a dog... but when it comes to people you should educate them rather than train them ... and so it's not so much that you need to say what you have to do, but why do you do it? And why do you do it in that specific way?... And the only way that you can reason why you do something in a certain way is when you have knowledge about it and can explain it and can see the relations between the different things that you do
>
> (N2/1: 45)

Understanding involving "see[ing] the relations between the different things that you do" implies deep, holistic understanding (see Ramsden, on learning, in Chapter Four).

The next quotation clearly shows that Ernie believes nursing knowledge applies holistically to patients. It also shows he believes holistic knowledge ought to be taught in separate parts or disciplines before "you meld them together again":

> ... when you talk about holistic ...nursing or holistic caring,...you talk about...looking after the patient ...psychologically...socially, physically and spiritually, culturally - but by already speaking of these concepts you are already separating them... But it's only a separation to increase understanding...After that you meld them together again.
>
> (N2/4b: 265)

This statement implies that holistic knowledge is simply the sum of its components.

Summary

Ernie believes that developing understanding in which students "see the relations between the different things you do" is important on the nursing course. He also acknowledges that holistic knowledge is important in nursing and that it is best taught by studying the separate components first, then "melding" them together.

Thus Ernie appears to conceive that understanding and holistic knowledge are important, but *not* that holistic knowledge involves greater understanding than is attained by simply by adding-on discrete components. In other words, he does not appear to conceive that holistic knowledge includes more than the sum of its discrete components.

4. Learning/knowledge has a universal application

<--->

Learning/knowledge is related to its context

(including its political context)

Ernie describes how he encourages his students to "challenge the lecturer". He wants them to think about and question knowledge:

> .. I think people should say...students should challenge the lecturer...Though I don't want students to challenge every word I say. I mean you want to achieve something [laughs] but... I would love it if somebody says...and sometimes they do - and sometimes I say on purpose something that is really controversial just to get them to respond and I think that's important.
> (N2/3)

Encouraging students to question knowledge implies the conception that knowledge is problematic, which, in turn, implies that it is *not* universal.

The action, as Ernie describes it, of encouraging students to challenge what the lecturer says is necessarily political. Particularly given that, in accordance with the NZQA's curriculum model, the Nursing Council is involved in determining

what is appropriate knowledge for nursing graduates to attain. . However, for two reasons, Ernie's statement is not considered by the researcher to indicate that he conceives knowledge (or teaching or learning) to be political, either at a conscious or subconscious, more intuitive level. Firstly, nothing he states, explicitly or implicitly, in the above quotation or elsewhere even suggests that his *thinking* or *personal theories* might include, or be consistent with, the notion that knowledge is political and related to a political context; apart, possibly, from his description of encouraging his students to challenge what he says. Secondly, in other responses discussed above (N2/2: 239; N2/3: 175), Ernie clearly explains how, in his teaching practice, he attempts to "ensure" that students "reach the learning outcomes" (N2/3: 175) His concern for students to attain the recognised outcomes is again reflected in the above statement when he says, "I mean you want to achieve something". Thus, it seems, Ernie does not actually allow any substantive challenge to the required knowledge. Encouraging students to challenge their lecturer, but still ensuring that the recognised, prescribed ends are attained, is hardly consistent with the conception that knowledge is political. Overall, Ernie does not appear to conceive that knowledge is political.

Ernie's description (under the first continuum above) of how students use journalling to develop their own nursing knowledge implies that knowledge is related to its context - a clinical nursing context in this instance. It also indicates that, in this sense, Ernie conceives knowledge is related to its context.

Summary

Ernie's advocation of journalling as a means of developing nursing knowledge indicates that he conceives knowledge to be related to its context (nursing knowledge to a nursing context) rather than to be universal. And his description of encouraging students to challenge what he says, implies that he

conceives knowledge to be problematic rather than universal and permanent.

Although the action that Ernie describes of encouraging students to challenge what is being said may seem to suggest, on the surface, that he conceives knowledge to be political, closer analysis suggests that he does not.

Conclusions

From the perspective of the frame (the four continuums) adopted for the purpose of analysing the case studies, Ernie's conceptualisation of teaching and learning is inferred to include the conceptions that:

- Learning involves the continuing, cognitive process of change.
- Teaching and learning in relation to curriculum requirements involve a facilitating, interactive process in which the means, but not the ends, are adjusted.
- Students ought to learn to reflect upon what they have learned and thus develop into independent learners.
- Nursing knowledge includes quantitative and qualitative aspects.
- Some nursing skills, such as caring, used in clinical situations are not amenable to precise description, pre-specification and accurate measurement.
- Most nursing knowledge, particularly nursing theory, is amenable to precise description, pre-specification and accurate measurement.
- Holistic knowledge and understanding are important in nursing. Holistic knowledge is best taught in its separate, component disciplines first, then melded into one.
- Knowledge is problematic and related to its context rather than universal.

Thus on the first continuum (separated <---> integrated), Ernie's inferred conceptualisation seems at first to be appropriately placed towards the right-hand

end, when he explains that he sees teaching and learning to be a facilitating, interactive, continuing, cognitive process involving change. But when he expresses his concern for students to attain the officially specified ends, he indicates that he conceives only the means ought to be varied in the teaching process, not the ends. Thus placing his conceptualisation at one point on the continuum is problematic. In balance, a placement across a range, to the right of the centre point seems most appropriate.

On the second continuum (precise description/measurement <—> more than readily captured) Ernie's inferred conceptualisation is towards the left as he conceives that much, but not all, nursing knowledge is amenable to precise description, pre-specification and accurate measurement.

On the third continuum (discrete <---> holistic), Ernie's inferred conceptualisation is on the right-hand side, between the right end and centre point; because he conceives that both holistic knowledge and understanding are important. However. he does not appear to conceive that overall, holistic knowledge is greater than the sum of the discrete components.

On the fourth continuum (universal <---> related to context), Ernie's inferred conceptualisation is towards the right, but not entirely at the right-hand end. He appears to conceive that knowledge is problematic and related to its context, rather than universal. But, in balance, he does not appear to conceive that knowledge may be political or related to a political context.

CONCLUSIONS TO CASE STUDIES OF NURSING LECTURERS

Conclusions from the three case studies are compared, through the frame provided by the four continuums. The discussion answers research question (2.2) concerning the similarities and differences amongst the conceptualisations of the three nursing lecturers.

On the first continuum (separated <---> integrated), two of the nurses' (Elizabeth's and Ann's) inferred conceptualisations are close to the right-hand end, because they conceive nursing education to be a continuing process in which the means interact with the ends. The third lecturer, (Ernie) like the other two lecturers, comments in a manner that indicates he conceives nursing education as a continuing process, implying interaction between the means and the ends. But, in other responses, he emphasises the importance of attaining pre-specified outcomes, and, in doing so, indicates the conception that only the means, not the ends, ought to be varied during teaching practice. His appears to be a "mixed" conceptualisation, similar to that of two of the automotive engineering lecturers.

As with the Automotive engineering lecturers whose conceptualisations on this continuum were inferred to be "mixed", placing this nursing lecturer's "mixed" conceptualisation on the continuum is problematic. In balance, based upon the researcher's impression of what the lecturer said, it would seem appropriate to place it across a range to the right of the centre point. Possible interpretations of the reasons underlying the "mixed" conceptualisation are discussed in Chapter Nine.

On the second continuum (precise description/measurement <---> more than readily captured) two of the nursing lecturers' (Elizabeth's and Ann's) inferred conceptualisations are close to the right end of the continuum, because they

conceive that learning, knowledge and skills comprises more than that which is amenable to precise description, pre-specification and accurate measurement. The third nursing lecturer's (Ernie's) conceptualisation is towards the left-hand end of this continuum, because, unlike the other two nurses, he conceives that most, but not all, nursing knowledge is amenable to precise description, pre-specification and accurate measurement. Thus the locations of the lecturers' conceptualisations on this continuum indicate that one lecturer holds a view which is diametrically opposed to the views of the other two lecturers. Possible reasons underlying this difference are discussed in Chapter Nine.

On the third continuum (discrete <---> holistic), two of the nursing lecturers' (Elizabeth's and Ann's) inferred conceptualisations are close to the right-hand end, because they conceive holistic knowledge to be important in nursing and to provide greater understanding than that available from knowledge of a number of discrete units. Where the third nursing lecturer's (Ernie's) conceptualisation ought to be placed is not as clear. While he conceives that holistic knowledge is important and related to understanding, he does not appear to conceive that holistic knowledge is greater than the sum of the discrete components. In balance, based upon the arguments presented earlier (under continuum 4 of the analysis of the case study of Ernie), the conceptualisation was located over a range to the right of the centre point.

On the fourth continuum (universal <---> related to context), two of the lecturers' (Elizabeth's and Ernie's) inferred conceptualisations are placed towards the right-hand end of the continuum, but a little distance from the end. They conceive that knowledge is related to its context. The third nursing lecturer's (Ann's) inferred conceptualisation is placed at the right-hand end of the continuum, because she conceives that knowledge is related not only to a context, but also to a political

context. Thus, all three inferred conceptualisations on this continuum are similar, but one "goes further" than the other two.

The above findings suggest that two (Elizabeth and Ann) of the three nursing lecturers conceptualise teaching and learning in a very similar way, in relation to the four continuums, at least. They conceive or imply the conceptions that teaching and learning are continuing processes involving interaction between the means and ends; that learning, knowledge and skills comprise more than can be described precisely, pre-specified and measured accurately; that holistic knowledge provides more understanding than the sum of its separate parts; and that knowledge is related to its context.

The inferred conceptualisation of the third lecturer (Ernie), as already mentioned, is markedly different from that of the other two lecturers, on the third continuum. Unlike the other lecturers, he conceives that nursing knowledge taught on the course can be described precisely, pre-specified and measured accurately. However his inferred conceptualisation on two of the other continuums, the first and third, is similar in at least some respects to the those of the other two lecturers. And on the fourth continuum, his conceptualisation is within the same range as the other two.

SECTION THREE:

COMPARISON OF THE AUTOMOTIVE LECTURERS' AND THE NURSING LECTURERS' INFERRED CONCEPTUALISATIONS OF TEACHING AND LEARNING

The three automotive engineering lecturers' and the three nursing lecturers' inferred conceptualisations of teaching and learning are discussed and compared in this section. The discussion answers research question (2.3), which concerns the similarities and differences between the automotive and the nursing lecturers' conceptualisations similarities and differences amongst the nursing lecturers' conceptualisations.

All six lecturers indicate that they conceive teaching and learning as continuing processes involving interaction between the means and ends. Two automotive and one nursing lecturer also indicate that they conceive teaching and learning as a linear progression to a pre-specified end, a progression which implies the separation of the means from the ends. There are, thus, similarities and differences amongst the conceptualisations of the individual lecturers, but there is no discernible difference between the conceptualisations of the two groups, with respect to continuum 1.

Three automotive lecturers and two nursing lecturers indicate that they conceive teaching, learning and knowledge to include more than can be described precisely, pre-specified and measured accurately. One nursing lecturer indicates that he conceives "classroom" teaching, learning and knowledge to be capable of precise description, pre-specification and accurate measurement. While this difference, vested in one lecturer's conceptualisation, exists between the two groups, there is

nothing to suggest it is representative of a more general difference between the way automotive and nursing lecturers conceptualise teaching and learning. To the contrary, apart from the one exception, the conceptualisations of the two groups are very similar, in terms of continuum 2. (Possible reasons underlying the "variant" lecturer's conceptualisation are discussed in Chapter Nine.)

All six lecturers indicate that they conceive holistic knowledge and understanding to be important. Five of the lecturers also indicate that they conceive holistic understanding involves more than the sum of its separate parts. Essentially all six conceptualisation are quite similar. Thus no difference is indicated between the automotive lecturers' and the nursing lecturers' conceptualisations of teaching and learning, in relation to continuum 3.

Two automotive lecturers and three nursing lecturers indicate that they conceive knowledge is related to its context. One nursing lecturer also indicates that she conceives knowledge to be related to a political context. No data was collected on the third automotive lecturer in relation to this matter, continuum 4. Thus the conceptualisations of teaching and learning attributed to all of the lecturers for whom data were collected are very similar, in terms of continuum 4. There is no discernible difference between the two groups of lecturers.

It is pointed out that the inferences made about conceptualisations on continuum 4, were based upon comparatively few data and, consequently, ought to be regarded with caution.

Overall, there is substantial agreement between how the three automotive engineering lecturers and the three nursing lecturers indicate they conceptualise teaching and learning. The similarity is reflected by the placement of all of the

conceptualisations inferred in the present study, with one exception, on the right-hand side of the all four continuums (that is, on the right of the centre point).

CHAPTER NINE

DISCUSSION AND CONCLUSIONS

Section One begins the chapter with discussion of the findings relating to the NZQA's and the six lecturers' conceptualisations of teaching and learning. The discussion focuses upon answering the first three research questions posed at the outset of the study or, in some instances, developed during the study. In summarised form, the questions are as follows:

Research question (1) concerns revealing the conceptualisation of teaching and learning underlying legislation and policy aimed at reforming education in polytechnics, particularly policies implemented through the NZQA and the ITOs.

[The conceptualisation in question (1) was later attributed to the NZQA - see Chapter Two, Section Three.]

Research question (2) concerns revealing the main features of the six polytechnic lecturers' conceptualisations of teaching and learning, particularly with regard to: (2.1) the similarities and differences amongst the automotive lecturers' conceptualisations; (2.2.) the similarities and differences amongst the nursing lecturers' conceptualisations; (2.3) the similarities and the differences between the automotive and the nursing lecturers' conceptualisations; and (2.4). the possibility of combining the lecturers' conceptualisations into one representative conceptualisation.

[Question (2.4.) was later deleted, as explained in Chapter Two, Section Three.]

Research question (3) concerns the differences between the lecturers' and the NZQA's inferred conceptualisations of teaching and learning.

[Question (3), above, is the revised version - see Chapter Two, Section Three]

Section Two seeks, firstly, to interpret and develop an understanding of the findings in terms of the critical and theoretical background included in the literature reviewed in the present study. Then, secondly, to draw attention to possible implications for teaching and learning in polytechnics suggested by the study. The discussion and

conclusions in this section provide answers to the fourth and fifth research questions, which in summary form are as follow:

Research question (4): concerns understanding the findings in terms of critical and theoretical educational and related literature.

Research Question (5): concerns the implications for teaching and learning in polytechnics of any differences found between the lecturers' conceptualisations and the conceptualisations implicit in policy.

Section Three concludes the chapter with a brief discussion of the study's strengths and weaknesses, suggestions for further research and a concluding statement.

SECTION ONE: INFERRED CONCEPTUALISATIONS

Introductory explanation

To facilitate comparison, the three sets of inferred conceptualisations derived from the study are located diagrammatically on the four continuums used in the analysis. The points, or ranges, at which the conceptualisations are placed have been determined on the basis of the researcher's judgement after consideration of the data presented in the study. There is no mathematical basis to the locations.

The NZQA's inferred conceptualisations (in 1995/1996)

Figure 3 shows the NZQA's inferred conceptualisations of teaching and learning (in 1995/1996), in accordance with the findings reported in Chapter Seven. The graphic presentation, discussion and conclusion provide an answer to research question 1.

Discussion

On the first continuum, the conceptualisation, marked with an 'X', has been placed slightly to the right of the left-hand end; because there was an indication in 1994 that

the NZQA was considering the need to include "processes" in its model. However, as was suggested previously (in Chapter Seven), including processes within an objectives/outcomes is problematic. And there was no indication that the model was to be changed. Thus the conceptualisation is placed only a short distance from the left-hand end. The NZQA's other three conceptualisations are located at the extreme left-hand end of the continuums.

Continuum (1)

<-----X----------->

means separated from ends — *means integrated with ends*

Continuum (2)

<-X----------->

capable of precise description / measurement — *more than can be described / measured*

Continuum (3)

<-X----------->

discrete components — *holistic*

Continuum (4)

<-X----------->

universal application — *related to context/political*

Figure 3: The NZQA's inferred conceptualisations of teaching and learning (as at 1995/1996)

Conclusion

The placement of the conceptualisations graphically on the continuum highlights the conclusion drawn in Chapter Seven: that, at the time of the case studies in the present study, the NZQA appeared to conceive, without exception, that the means

are, and ought to be, separated from the ends of teaching and learning; that teaching, learning and knowledge can be described precisely, pre-specified and measured accurately; that knowledge comprises the sum of its discrete components; and that knowledge has a universal existence.

It is further concluded that these findings are consistent with the NZQA's conceptualisations which were inferred from the discussion in chapters three, four, five and six of writers' criticisms of the education reforms and recorded in the summary/conclusion of each of those chapters.

The lecturers' inferred conceptualisations

Chapter Eight includes conclusions at the end of Section One and Section Two, in which the main features of the inferred conceptualisations of the three automotive engineering lecturers and the three nursing lecturers, respectively, are discussed. This discussion, as pointed out in Chapter Eight, answers research questions (2.1.) and (2.2.).

Section Three, in Chapter Eight, compares the three automotive engineers' and the three nursing lecturers' inferred conceptualisations. The discussion and conclusions answer research question (2.3) (as was pointed out in Chapter Eight).

In this chapter, Figure 4 shows diagrammatically the placement of all six lecturers' inferred conceptualisations on the four continuums used in the analysis of findings. It adds a visual dimension to the previous answers to research questions (2.2.) and (2.3). In addition, further attention is given to answering question (2.3), which concerns the similarities and the differences between the automotive engineering lecturers' and the nursing lecturers' inferred conceptualisations. The following discussion and conclusion review and develop the answer.

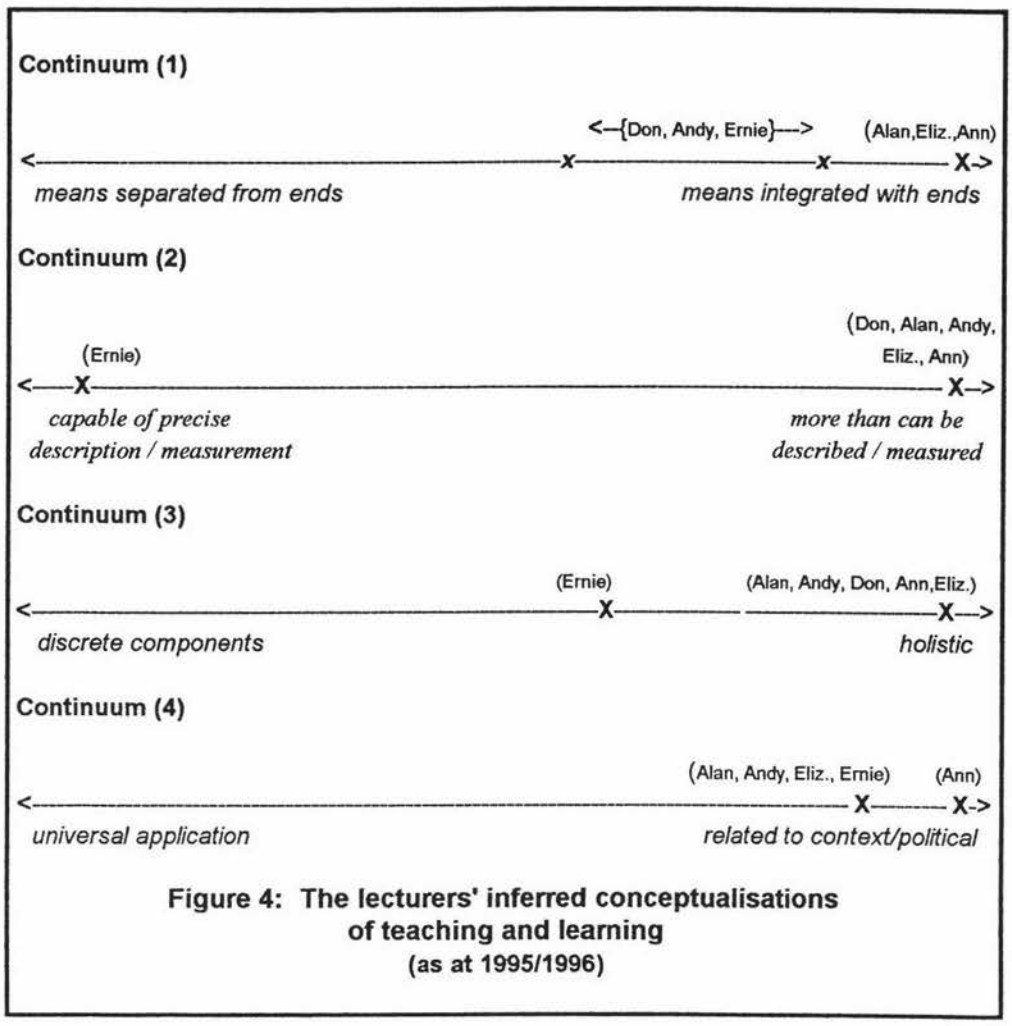

Figure 4: The lecturers' inferred conceptualisations of teaching and learning (as at 1995/1996)

Discussion

With one exception, the six lecturers' inferred conceptualisations shown in Figure 4 are all located towards, or at, the right-hand end of the four continuums. The exception, discussed previously, arises from Ernie's strong belief that most of the knowledge taught on the nursing course is capable of precise description, pre-specification and accurate measurement. Thus Ernie's conceptualisation on the second continuum is located at the extreme left-hand end.

Two further variations, also mentioned previously (in Chapter Eight), are, firstly, Don's, Andy's and Ernie's "mixed" conceptualisations located over a range on the first continuum (shown thus: *x*<--{Don, Andy, Ernie}-->*x*); and, secondly, no

conceptualisation is shown for Don on the fourth continuum, because no appropriate data were collected to enable a placement to be made.

Conclusion

From Section Three in the previous chapter, the graphic representation in Figure 4 and the above discussion, it is concluded that, with one marked exception, one omission and a rider concerning three "mixed" conceptualisations, the six lecturers' inferred conceptualisations are all very similar to one another. By and large, the lecturers conceived: that teaching and learning involve a continuing process in which the means and the ends are integrated; that teaching, learning and knowledge include more than can be described precisely, pre-specified and measured accurately; that holistic knowledge involves more than the sum of its component parts; and that knowledge is related to its context.

The lecturers' inferred conceptualisations present a view of teaching and learning that is consistent with educationists' critical views of NZQA's developments included in the discussion in chapters three, four, five and six of the present study.

Comparison of the NZQA's inferred conceptualisation with the six lecturers' inferred conceptualisations

The diagrammatic representations of the NZQA's and the lecturers' inferred conceptualisations in Figures 3 and 4 facilitate a comparison, which answers the revised version of research question 3.

Comparison of the NZQA's inferred conceptualisations, in Figure 3, with the lecturers' inferred conceptualisations, in Figure 4, clearly shows marked differences. With the one exception of Ernie's conceptualisation on the second continuum, the NZQA's inferred conceptualisations and the lecturers' inferred conceptualisations are on opposite sides, towards opposite ends, of the four continuums. More

specifically, the placements of the inferred conceptualisations reflect the following contrasts:

The NZQA conceives that the means and the ends of teaching and learning can and ought to be separated in a linear progression to the attainment of an end; whereas the lecturers conceive teaching and learning as a continuing process in which the means are integrated with the ends.

The NZQA conceives that teaching, learning and knowledge are capable of precise description, pre-specification and accurate measurement; whereas all but one of the lecturers conceive teaching, learning and knowledge to include more than can be described, pre-specified and measured accurately.

The NZQA conceives knowledge to be the sum of discrete components; whereas the lecturers conceive holistic knowledge to be related to understanding and, except for one lecturer, conceive that the whole comprises more than the sum of its parts.

The NZQA conceives that knowledge exists in a universal form; whereas the lecturers, for whom data were collected, conceive that knowledge is related to its context.

Conclusion

Thus it is concluded that the NZQA and the lecturers appear to conceive teaching and learning in markedly contrasting ways, in 1995/1996 at least However, there is evidence of some changes to the NZQA's conceptualisation of teaching and learning since that time.

Changes to the NZQA's inferred conceptualisations from 1996 to 1999

Figure 5 shows changes that were found to have occurred to the NZQA's inferred conceptualisation of teaching and learning from 1996 to 1999

Continuum (1)

```
   <------
<-X--------X------------------------------------------------------------------------>
```

means separated from ends — *means integrated with ends*

Continuum (2)

```
   ------------------------------------>
<-X-----------------------------------X------------------------------------------------>
```

capable of precise description / measurement — *more than can be described / measured*

Continuum (3)

```
   ------------------------------------------------------------>
<-X-------------------------------------------------------------X------------------------>
```

discrete components — *holistic*

Continuum (4)

```
   ------->
<-X--------X------------------------------------------------------------------------>
```

universal application — *related to context/political*

Figure 5: Changes to the NZQA's inferred conceptualisation of teaching and learning (1996 - 1999)

Legend

X = 1995/96 position **X** = 1996/99

-----> = direction of change

On the first continuum, the conceptualisation has been moved back to the left-hand end. This is because no further indication was found of a substantive change following the NZQA's 1994 statement to the effect that teaching and learning were being considered as a process rather than as an outcome. The earlier indication of a change has not led to further developments, or changes to its curriculum model.

On the second continuum, the conceptualisation has been moved close to the centre point, because evidence suggests the NZQA has modified its previous stance considerably. It has begun to admit outcomes of a much less tangible nature than it did previously. The move includes the change from an insistence upon the exclusive use of standards-based assessment - which, essentially, requires the precise description, pre-specification and accurate measurement of outcomes - to the acceptance of other forms of assessment, as noted in Chapter Seven.

On the third continuum, the inferred conceptualisation has been moved across to the right-hand side of the continuum. This is because the NZQA has recognised that holistic outcomes for courses have a meaning over and above those attained by adding the components together. It appears, though, that the NZQA has not extended this principle - that the whole may be more than the sum of its components - to include smaller units of learning than courses. Nor does it appear that a link has been made between holistic knowledge and understanding.

On the fourth continuum, there is a slight movement to the right. This reflects the NZQA's recognition that the transfer of credits across courses may, in some instances, be problematic because the knowledge involved may be related to particular purposes for which the courses were designed, or, in other words, to particular contexts. More evidence of a broader understanding of this concept of a relationship between knowledge and its context would be needed to justify a move to the right-hand side of the continuum.

Conclusion

There is evidence that the NZQA's conceptualisation of teaching and learning has changed in the period from 1996 to 1999. In some respects, at least, it has become more like the lecturers' conceptualisations. And more like the views of its critics. However, the NZQA appears to be resisting any changes to the means-ends conception of teaching and learning underlying its objectives/outcomes model.

What is not known from the present study is whether the lecturers' inferred conceptualisations have also changed during the period from 1996 to 1999. Time and resources available did not permit the collection of the data required to investigate this matter.

SECTION TWO: INTERPRETATION AND IMPLICATIONS OF THE FINDINGS

This main purpose of this section is to interpret the findings from the present study and to point out implications for teaching and learning in polytechnics that are suggested by them. The discussion and conclusions answer research questions 4 and 5.

A theoretical interpretation of the findings

The findings relating to the lecturers' and the NZQA's conceptualisations of teaching and learning are interpreted in terms of the educational and related literature discussed in the study. The interpretation involves developing a critical and theoretical understanding of the findings, as required to answer research question 4. Material is drawn from that presented in chapters one, two, three, four, five and six, which, considered together, in effect, provide a fuller answer to research question 4.

Discussion

Chapter One introduced the notion that people's theories influence what they see. In the same vein, Chapter Four included a brief reference to how scientific paradigms structure observations in accordance with the concepts and theories impregnated in the particular paradigm. The literature discussed in Chapter Five developed the related notion that knowledge is a social construction rather than something which exists universally. Then in Chapter Six, discussion focused upon, first, how the beliefs and ideologies representing the interests of the power-holders enter, unnoticed, into the language, discourses, ideologies and ways of thinking of the populace and, in so doing, come to influence how people think and what is counted as knowledge; and, second, how the direction of that influence in the 1980s and 1990s has moved towards the adoption of an economics paradigm through which people are coming to define themselves, society, education and knowledge.

Marginson (1997), one of the writers whose contribution is discussed in Chapter Six, makes the particularly relevant point that the *mode of thought* associated with a theory influences not only what phenomena are "counted", but also what phenomena remain hidden from sight. Further, when the mode of thought for considering education is a neo-classical economics frame (an economics paradigm), allowable phenomena include observable inputs and outputs that can be measured in economic terms. But the more intangible aspects of education that cannot be defined and measured in economic terms are suppressed or hidden from view.

Codd (1996a, 1996b), whose writing is also included in the discussion in Chapter Six, links the NZQA and the National Qualifications Framework with an economic perspective. He argues that the NZQA strongly subscribes to an instrumentalist, market view of education in which 'standards setting' is divided from 'curriculum delivery' (the ends from the means) and knowledge is conceived as a product, as a commodity and as a performance, rather than as a personal attribute.

Up to this point, then, the view developed in the theoretical discussion is that, under the influence of the government and other economic power-holders, the NZQA is conceiving teaching and learning through an economics paradigm which is influencing what is recognised and counted as knowledge. It is a view which is consistent with the NZQA's inferred conceptualisation of teaching, derived from the document analysis described in Chapter Seven and reported above, in this chapter. It is also a view which is consistent with the economic themes found to underlie the NZQA's policies in the selection of official documents analysed and discussed in Chapter Seven. Further, it is a view that is consistent with NZQA's conceptualisations of teaching and learning inferred from the criticisms of the reforms discussed in chapters three, four, five and six, and recorded in the summaries/conclusions to those chapters.

But the view from the literature does not appear, at first at least, to be consistent with the findings relating to the lecturers' inferred conceptualisations, apart from the exception of Ernie's conceptualisation on the second continuum. According to the above arguments, one would expect the lecturers as members of society to be influenced to conceive teaching and learning through an economics paradigm, in a similar manner to the NZQA. But, by and large, it seems, they do not. What explanation is offered?

One possible explanation is suggested by Beeby's (*op. cit.*) statement quoted in Chapter One, concerning the way that teachers "have an infinite capacity for going on doing the same things under another name" (Beeby, *op. cit.*: 25). But Beeby is referring to a conscious, or at least mainly conscious, resistance. He explains how teachers characteristically exert their own views in the face of change to which they are not committed, but this does not explain how the lecturers resist discourses that, as described in Chapter Six, influence people through hegemonic processes, without their conscious awareness.

A more satisfactory explanation is offered by Weedon's (1987) poststructural theory, as outlined in Chapter One; together with Luke's (1995) writing on discourse analysis, as outlined in Chapter Two; and Foucault's (1972; 1980) writing on discourses, as discussed in chapters two and six. This writing conceives that people's subjectivities are formed, so to speak, at the intersection of competing discourses, by prevailing ideologies and beliefs embedded in the discourses. People are, without their awareness, influenced by not one, but by multiple competing discourses, to see the world and themselves within the world in particular ways. Peters and Marshall (!996) explain (as described in Chapter Two), in reference to Foucault's writing, that "*subject* carries twin meanings of an active knowing subject and of an object being acted upon - a *product* of discourses" (*ibid.*: 30) and an agent who can act.

Based upon Weedon's, Foucault's and Luke's writing, an interpretation of the lecturers' apparent resistance to the prevailing economics discourses might be that the lecturers, like other people, are influenced by a number of different sorts of discourses, without their conscious awareness. Amongst these discourses, two sorts of competing discourses have particular potential to influence their teaching practice; namely, economics and education discourses. Of these two sorts, the education discourses have the more powerful effect on the lecturers. Thus the lecturers are influenced by education discourses to conceive teaching and learning through an education, rather than economics, paradigm.

The lecturers are not, however, simply objects that are acted upon by the discourses. They are active knowing beings with the potential to understand situations and to act. Potentially their actions could contribute towards accepting and, perhaps, strengthening the education discourses or, alternatively, towards recognising and accepting economics discourses.

The poststructural, competing discourses explanation of the findings also provides an explanation of the inconsistency arising from Don's, Andy's and Ernie's apparently "mixed" conceptions on the first continuum. All three indicated in some of their responses that they conceived teaching and learning as a process involving interaction between the means and the ends. But in other responses both Andy and Don indicated that they also conceived teaching and learning as a linear progression to a predetermined end. And Ernie indicated that he also conceived teaching and learning to involve interaction in which the lecturer varied the means but not the ends.

Don's, Andy's and Ernie's responses can be interpreted to reflect tensions stemming from the curriculum model, which the NZQA has constructed in accordance with an economics discourse and an economics paradigm and imposed on the lecturers. In this interpretation the lecturers are "struggling" to operate, in accordance with education discourses and an education paradigm, in the midst of economics discourses and parameters imposed by a curriculum model based in an economics paradigm. Thus, the lecturers are observed to conceive teaching and learning in a manner which includes knowledge that is not readily defined, not always predictable in advance and difficult or impossible to measure accurately. But, at the same time, they are confronted by the NZQA's conception which excludes aspects of education that cannot be defined and measured in economic terms. The lecturers are, as it were, caught between competing discourses, or the material effects of competing discourses.

Similarly, tensions arising from the curriculum model and the phenomenon of competing discourses may also explain why Ernie argues so strongly that outcomes on the nursing course are very "tight", and that knowledge and skills are described precisely and measured accurately. He may be interpreting an educationally sound and acceptable outcome in the manner required by the "competing" economics

discourses and economics paradigm.. Thus he, too, may be caught, as it were, between the two discourses.

Another, more subtle, interpretation is also suggested by the findings considered in the light of the literature reviewed. Don's, Andy's and Ernie's apparently "mixed" conceptions on the first continuum and Ernie's apparently inconsistent conception on the second continuum may arise from tensions and confusion in the midst of conflicting discourses. But their responses actually may point to a solution to the problem. There may be a need to adopt two curriculum models -a process model and an objectives model - to provide for the different forms of teaching and learning in both the automotive engineering and the nursing courses. This development is discussed further in the next section.

The literature reviewed in the study does not offer any specific, theory or interpretation concerning the changes observed in the NZQA's conceptualisations of teaching and learning between 1996 and 1999. However, it does provide the theoretical base that underlies the following interpretation.

The NZQA's move from conceptualisations of teaching and learning, which were entirely consistent with an economics perspective, to the acceptance of some views which came closer to accommodating aspects of an educational perspective can be interpreted as a response to the pressures exerted by critics, such as those whose challenges are discussed in chapters three, four, five and six of the present study. But no change is observed in respect of the NZQA's objective/outcomes model. It has been retained. Thus it is a conclusion of this study, that the changes are at a surface rather than a deeper, more fundamental level. Consequently the NZQA's "improvements" may, through the continuation of confusions and inconsistencies at a deeper level, prove to be counterproductive, rather than leading to the intended improvements to its "system" and to teaching and learning.

Summary and conclusions

A theoretical and critical interpretation of the findings based upon the education literature reviewed in the present study suggests that in 1995/1996, at the time of the case studies, society's power-holders were promulgating economics discourses that were coming to influence the way of thinking of many people throughout society. The finding that the NZQA was conceiving teaching and learning through an economics paradigm was consistent with theory concerning the influence of economic discourses. But the findings in relation to the six lecturers' conceptions of teaching and learning were not consistent with theory concerning the influence of economics discourses.

Poststructuralism, discourse theory and critical discourse analysis suggest that the difference between the NZQA's and the lecturers' conceptualisations may be related to the different effects of competing discourses upon each group's conception of education. It is thus argued that, for the NZQA, economics discourses have the stronger influence; whereas, for the lecturers, education discourses have the stronger influence.

Changes observed in the NZQA's conceptualisations of teaching and learning from 1996 to 1999 are interpreted as "surface" movement from an economics perspective towards an education perspective, but not to reflect any change at a "deeper" level. This explains why, despite some apparently quite significant changes, the NZQA has not changed from its objectives/outcomes curriculum model. It is concluded that the NZQA's changes are likely to be counterproductive, leading to further fundamental inconsistencies rather than to the improvement of teaching and learning.

The lecturers' responses, which at first appear to represent confusion related to inconsistencies arising from, as it were, superimposing an economics paradigm over an education paradigm, are suggested to point to the need for more than one curriculum model in both of the courses involved.

Implications for polytechnics suggested by the study

Three implications for teaching and learning in polytechnics that are suggested by the study are discussed. The discussion and conclusions provide an answer to research question 5.

The first implication arises from a surprise and concludes with a call to reconsider the curriculum model. The second develops the point introduced above; namely, the need for not one, but two curriculum models for each of the courses in the study. The third involves the threat to important knowledge if, in the future, lecturers do become influenced by economic discourses and come to conceive teaching and learning through an economics paradigm.

A surprise: Do some lecturers accept the curriculum model? Is the model satisfactory?

One of the reasons for choosing two contrasting courses - automotive engineering and a nursing - from which to select lecturers to involve in the study was the belief that the contrast would be reflected in the lecturers' conceptualisations of teaching and learning. It was believed that the automotive lecturers would be concerned almost entirely with straightforward skills of the sort that various writers (Codd, McAlpine and Poskitt, *op. cit.*; Elley, 1992, 1996b; Hall 1994; Irwin, Elley, and Hall, 1995) suggest can be accommodated satisfactorily in an objectives/outcomes curriculum model. And, in contrast, the nursing lecturers would be concerned that some of the more intangible skills, such as those involved in caring and intuitive knowledge, were not adequately included in their curriculum. It seemed likely that, on a surface level, the automotive lecturers would be satisfied with the curriculum model, but the nursing lecturers would not.

The exact opposite proved to be true. The automotive lecturers were all, on occasions, explicitly critical of the "new" system, whereas the nurses explicitly expressed satisfaction with the curriculum, despite responses that indicated deeper level problems.

One reason for the nurses expressed (surface level) satisfaction might have been that all three had been involved in writing their curriculum. They had been able to ensure what they wanted went into it. As Ann stated, "What we all thought and felt comfortable with ... went into the curriculum ..." (N3/4: 142). On the other hand, the automotive lecturers had very little, if any, involvement in writing their "curriculum". It was mandated by the Motor Industry Training Organisation, (with the opportunity to comment).

Notwithstanding their expressed satisfaction with the curriculum, the nurses, with the exception of Ernie in one area, indicated at a deeper level that they conceived a number of aspects of teaching and learning in a manner that is fundamentally incompatible with an objectives/outcomes model. For example, they conceived teaching and learning to include some intangible, difficult to define and measure outcomes.

It was surprise enough that, as mentioned, the automotive lecturers explicitly expressed dissatisfaction with the curriculum, but an even greater surprise when they, like the two nurses, indicated at a deeper level, a conception of teaching and learning that is fundamentally at odds with an objectives/outcomes curriculum model. The automotive lecturers in the study appeared to have a deep-rooted concern to teach knowledge and skills that they believe to be important, even if the knowledge and skills are difficult to describe precisely, pre-specify and measure accurately.

Regardless of whether the nurses and the automotive engineers inferred conceptualisations are a surprise or not, they suggest that the curriculum model for both courses is inadequate.

Conclusion

Five of the lecturers in the study, including three automotive and two nursing lecturers, appeared to have a deep rooted concern to include in their teaching, because they conceive it to be important, knowledge that is not amenable to precise description, pre-specification and accurate measurement. That the present curricula tend to exclude these forms of knowledge and learning ought to be a matter of concern.

Reconsideration of the curriculum model

Schon's (1983, 1987) writing, (see chapters four and five) may be about a different situation, but nevertheless provides an insightful frame through which to consider the inadequacies of the NZQA's curriculum model. In criticising the ability of professional practitioners to resolve everyday problems, Schon argues that the difficulty arises because the problems faced by practising professionals involve *indeterminate* situations, and are not the well structured problems for which professional education has prepared them.

The traditional curriculum model, Schon argues, is at fault. He points out that the idealised positivist notion is one of rigorous practitioners solving instrumental problems by applying theory and practice derived from systematic, preferably scientific, knowledge. Practitioners are conceived to be instrumental problem solvers who select technical means best suited to a particular purpose" (Schon, 1987: 3). But the reality which Schon perceives is practitioners facing *indeterminate* situations.

Schon's answer, in effect, is to turn the traditional curriculum on its head. He rejects the traditional technocratic curriculum which puts basic science in first place, applied sciences in second place, and only finally - in order that students learn to apply research-based knowledge to the problems of daily practice - includes *practica*. In its place he advocates a curriculum based upon the careful examination of *artistry*; that is, competence seen in the way practitioners handle *indeterminate* situations. In the context of the present study, *indeterminate* situations are defined to include knowledge that is difficult or impossible to describe precisely, pre-specify and measure accurately.

The lecturers' comments viewed, as it were, through Schon's frame suggest that a process model, which encourages the integration of the means with the ends of teaching and learning, and which has as its focus the way competent professionals handle indeterminate situations, may well lead to improvements in both the automotive engineering and the nursing courses. A process model of this sort would encourage a focus upon students' experience and the quality of that experience rather than simply the attainment of quantifiable outcomes. The points raised by the research on learning, discussed in Chapter Four, would receive due attention, including students' needs and responses; the possible effects of the "hidden curriculum"; and developing deep, holistic learning; rather than surface, atomistic learning. Role modelling would receive due attention as a means of teaching, even if the specific outcomes could not be measured. *Indeterminate* situations would be placed at centre-stage, rather than off-stage where they do not count. Knowledge and skills that are difficult or impossible to describe precisely, pre-specify and measure accurately would be a central focus; they would count.

However, there would still be a place for a form of an objectives/outcomes model in both of the courses in the present study. The need is suggested, indirectly, by the lecturers who explicitly identify two forms of knowledge (Alan, Ernie and

Elizabeth), or three forms of knowledge(Ann), or who imply that there are two forms of knowledge (Andy and Don). It is also suggested, indirectly if not directly, by writers who describe more than one form of knowledge (for example, Eisner, 1979; Habermas, 1972; Elley, 1995; Grundy, 1997; Hall, 1994; Irwin, Elley, and Hall, 1995; see chapters three and five).

It is the researcher's belief that a process curriculum model, in which the means and the ends of education are integrated, ought to be devised, "controlled" and taught by professional lecturers within the context of an education paradigm. To avoid contradictions and inconsistencies (and to remove the source of lecturers' tensions, such as those discussed in the previous section) the objectives/outcomes model also ought to be devised, "controlled" and taught within an education paradigm.

Conclusions

It is thus concluded that adopting a process model for "indeterminate" aspects of the automotive engineering and the nursing courses potentially will lead to improvements, particularly through the official inclusion and development of important knowledge and skills that are currently excluded because fundamentally they are not compatible with an economics paradigm and the NZQA's conception of teaching and learning. It is further concluded that a form of an objectives/outcomes model also ought to be developed within an education paradigm and adopted for appropriate aspects of the courses. Thus for each course, teaching and learning would be conceived, developed and taught in accordance with two curriculum models, both based in an education paradigm.

A threat to important knowledge

The differences between the lecturers' and the NZQA's inferred conceptualisations found in the present study suggest some profound implications for teaching and learning in polytechnics.

Apple's (1993) warning (see Chapter Six) concerning teachers becoming *deskilled* points to one very serious problem. He argues that in jobs where there is a "separation of the conception from the execution" (Apple, *ibid.*: 121), and professionals no longer plan and control their own work, the skills essential for doing such tasks self-reflectively and doing them well, will atrophy and disappear. In the teaching profession this means that: "... professional teachers who care greatly about what they do..." will be lost and replaced by "alienated executors of someone else's plans" (Apple, *ibid.*: 123).

With the increasing desire of government to give the control of the ends of polytechnic education to employers in general, and ITOs in particular (see Chapter Seven), there appears to be every chance that professional polytechnic lecturers, such as those in the study, will be replaced by *technician* lecturers. It is likely that this new breed of lecturer will remain uninfluenced by education discourses and take on, without even being aware of what they are doing, the prevailing economics discourses. As a consequence, in the future, polytechnic students may be "taught" by *technician* lecturers who conceive teaching and learning through an economics paradigm, similar to the way in which the NZQA was found to conceptualise teaching and learning in the present study. Then, much of the important more difficult to describe, less tangible, less measurable knowledge currently unofficially included in the curriculum, might *actually* be lost (see references to Black, 1994; Broadfoot, 1991; Codd, et al., 1995; Darling-Hammond, 1994; Elley, 1995, 1996; Lofty, 1993; Romberg and Zarinnia 1989; Torrance 1993 - in Chapter Five).

Conclusion

The de-professionalisation of polytechnic lecturers in the future may lead to *technician* lecturers being influenced by economics discourses to conceive teaching and learning through an economics paradigm, with the consequence of the loss of valuable knowledge to education and society, including employers and students.

SECTION THREE: OVERALL CONCLUSIONS TO THE STUDY

Strengths and weaknesses of the study

One of the strengths of the present study is the consistency between the theoretical perspective derived from the literature and the findings from the analysis of documents and the case studies. The NZQA's conceptualisations of teaching and learning inferred from the literature are consistent with the conceptualisations inferred from the analysis of documents. The suggestions from the literature that the power-holders are conceiving education through an economics paradigm and, by means of their control over discourses, influencing others to take on an economics perspective, is consistent with the economic themes revealed in the analysis of policy documents and with the way that the NZQA is inferred to conceptualise teaching and leaning. And the lecturers' conceptualisations inferred from the case studies are consistent with the views of educationists who criticise the NZQA's developments.

Drawing data from different sources, in the manner described above, is the central principle involved in establishing validity by means of triangulation. That there is considerable congruence in the above data drawn from different sources contributes to the present study's validity claim.

The following strengths of the study are, as is pointed out in each instance, also weaknesses:

The conceptual nature of the study is a strength. Its bases in critical theory and poststructuralism meant that, in conjunction with the methodology of case study and discourse analysis, it was possible to analyse responses at a deeper than surface level. The deeper level of understanding has the potential to provide clear insight into problems that may be understood only vaguely, or not at all, at a surface level. Further, critical theory seeks to involve those being researched as co-researchers, thus giving them the opportunity to develop an understanding of their own situations; that is, the situations being researched. How this may occur is illustrated in the following example from the case studies in the present study.

All six lecturers in the case studies were explicit that the development of holistic understanding is important for their students. The three automotive lecturers stated quite clearly that the official course organisation and/or content does not develop holistic knowledge. Two of the nurses indicated concern that their students may not make the links required for the development of holistic knowledge. Ann, for example, said, "Hopefully we are making the links in the students' minds" (N1/4), but actually indicated some doubt. Like the other lecturers, her concern was with the course organisation (and/or content). What the lecturers did not appear to consider was the relationship between the organisation of their courses, the conception of knowledge and the curriculum model. The deeper level of the present research encourages the development and use of concepts which offer understanding and insights into these issues. It was an aim of the present research that the lecturers would share in this development of knowledge. Unfortunately, this aim was largely unachieved on this occasion, as is discussed below. Nevertheless, the example still illustrates the potential benefit of a theoretical approach.

The conceptual nature of the research might also be a weakness, particularly if potential problems related to its theoretical nature were not identified by the researcher and taken into account by the reader. Four such potential problems are: (1) The danger of reifying concepts and forgetting that, while they may have material effects, they exist only in people's minds - perhaps only the researcher's mind. (2) The conceptualisations in the present study are inferred by the researcher. Others, including those involved, may or may not concur with the researcher's inferences. (3) The notion of organisations having or reflecting conceptualisations is problematic; because, for example, organisations are made up of individual people. (4) Although how people think about things is important, there is by no means a clear relationship between thought and action. Nevertheless, the present study *is* about thinking and concepts, rather than actual actions.

The original intention of involving lecturers as co-researchers in the study, in accordance with the principles of critical theory was a strength. Unfortunately, in the end, the time required for discussion and reflection proved too great. Thus there was comparatively little evidence of the study leading to changes in the lecturers' understandings, let alone evidence of the lecturers taking democratic action to improve their situation and polytechnic education. Thus the failure to carry through this aspect of critical theory was a weakness.

A corollary of the above point is that, while the quoted statements are, of course, what the lecturers said, some of the meanings attributed in the research may not be theirs. Perhaps, in some of these instances where the meanings are not shared by both the researcher and lecturer, the lecturers may have taken on new understandings had there been more discussion. Perhaps, on the other hand, the researcher may have taken on new understandings.

The open-ended exploratory nature of the research was a strength insofar as the lecturers were encouraged to talk freely during the interviews and were not focused narrowly upon topics by the researcher. This also proved to be a weakness at the stage of interpreting the findings. For example, too little data were collected on the fourth continuum and, on occasions, follow-up questions, which might have been asked, had the researcher known how the data were to be analysed, were not asked.

The continuum proved to be a very useful frame for analysing the data and communicating the findings, but at the same time imposed a simplistic dichotomy and structure on the knowledge involved.

Proposals for future research

A natural follow-up would be to explore further the question of whether teachers are conceiving teaching and learning through an education paradigm and, if so, whether this is in opposition to an economics paradigm. If this research were underpinned by critical theory, it would also provide an opportunity to involve teachers as co-researchers in reflective discussion. Thus it would have the potential to provide new understandings, empowerment and democratic action towards change for the better.

Another area for research suggested by the present study is the notion of two (or multiple) curriculum models within one course.

Concluding statement

The frame through which the data are analysed in the study may be overly simplistic, but the findings are consistent, nevertheless, with the messages that emerge from the literature. It appears that in the current economic climate there is a real danger that important areas of knowledge which do not conform to an economic conception of

teaching and learning may be excluded and lost to the detriment of education, students, employers and society.

However, there is hope in the professional, educationally-based view of teaching and learning observed (inferred) in the lecturers in the present study. The lecturers were observed (inferred) to conceive that teaching and learning involve a continuing process in which the means are integrated with the ends; that teaching, learning and knowledge include more than can be described precisely, pre-specified and measured accurately; that holistic knowledge is more than the sum of its parts; and that knowledge is related to its context.

The hope for the future is that the polytechnic lecturers involved in the study, other polytechnic lecturers and teachers in general will, themselves, through examining, discussing and reflectively thinking about their lives as teachers, come to new understandings which empower them to take democratic action to bring about changes for the better. A critical approach is needed now, more than ever before.

REFERENCES

Abrahamson, M. (1983). *Social research methods.* Englewood, New Jersey: Prentice Hall.

Adelman, C., Jenkins, D. and Kemmis, S. (1976). Rethinking case study: Notes from the second Cambridge Conference. *Cambridge Journal of Education, 6* (3), 139-150.

Althusser, L. (1971). Ideology and ideological state apparatuses. In L. Althusser (Ed.). *Lenin and philosophy and other essays.* London: New Left Books.

Anderson, G. (1990). *Fundamentals of educational research.* London: Falmer Press.

Anderson, G.L. (1989). Critical ethnography in education: Origins, current status and new directions. *Review of Educational Research,* 59, 249-270.

Anderson, J.R. (1982). Acquisition of cognitive skill. *Psychological Review, 89* (4), 369-406.

Apple, M. W. (1993). *Official knowledge: Democratic education in a conservative age.* New York: Routledge.

Archambault, R.D. (1964). *John Dewey: Selected writings.* New York: Random House.

Argyris, C. (1976). *Increasing leadership effectiveness.* New York: Wiley-Interscience.

Argyris, C. and Schon, D.A. (1974). *Theory in practice: Increasing professional effectiveness.* San Francisco: Jossey-Bass.

Aronowitz, S. and Giroux, H.A. (1985). *Education under siege: The conservative, liberal and radical debate over schooling.* Boston: Bergin and Garvey.

Babbie, E. (1989). *The practice of social research* (5th ed.). Belmont California: Wadsworth.

Bailey, M. (1993). *Theoretical models and the assessment of competency.* VEETAC Competency Based Training Working Party: National Assessment Research Forum (TAFE), NSW, Sydney.

Barker, A. (1995). Standards-based assessment: The vision and the broader factors. In R. Peddie and B. Tuck (Eds.), *Setting the standards: The assessment of competence in national qualifications.* Palmerston North: Dunmore Press.

Barnett, R. (1994). The limits of competence: Knowledge, higher education and society. Buckingham: Society for Research into Higher Education and Open University Press.

Barry, N. (1986). On classical liberalism and libertarianism. London: Macmillan.

Bates, R. (1991). *Who owns the curriculum?* Paper presented to the Annual Conference of the New Zealand Post Primary Teachers' Association, Christchurch.

Bates, R. (1992). *Educational reform: Its role in the economic destruction of society.* Keynote address at the joint Annual Conference of the Australian Association of Research in Education and the New Zealand Association of Research in Education, Deakin University, Geelong.

Beare, H., Caldwell, B. and Millikan, R.H. (1989). *Creating an excellent school: Some new management techniques.* London: Routledge.

Becker, H.S., Geer, B. and Hughes, E.C. (1968). *Making the grade: The academic side of college life.* New York: Wiley.

Beeby, C.E. (1974). The present position of educational planning. In W.L. Renwick and L.J. Ingham (Eds.), *Educational Planning in New Zealand.* Wellington: Government Printer.

Benner, P. (1984). *From novice to expert: Excellence and power in clinical nursing practice.* California: Addison-Wesley.

Benner, P. and Tanner, C. (1987). Clinical judgment: How expert nurses use intuition. *American Journal of Nursing, 87,* 23-31.

Benner, P., Tanner, C.A. and Chesla, C.A. (1996). *Expertise in nursing practice: Caring, clinical judgment and ethics.* New York: Springer Publishing Company.

Berger, P.L. and Luckman, T. (1967). *The social construction of reality.* London: The penguin Press.

Black, P. (1994). Performance assessment and accountability. *Educational Evaluation and Policy Analysis, 16* (2), 91-203.

Blaikie, N. (1988). *Triangulation in social research: Origins, use and problems.* Paper presented at the Conference of the Sociological Association of Australia and New Zealand, Canberra, Australia.

Bobbitt, F. (1918). *The curriculum.* Boston: Houghton Mifflin.

Bobbitt, F. (1924). *How to make a curriculum.* Boston: Houghton Mifflin.

Bogdan, R.C. and Biklen, S.K. (1992). *Qualitative research for education: An introduction to theory and methods.* Boston: Allyn and Bacon.

Boggs, C. (1976). *Gramsci's Marxism.* London: Pluto Press.

Bolman, L.G. and Deal, T.E. (1991). *Reframing organisations: Artistry, choice and leadership.* San Francisco: Josey-Bass.

Bosner, S.A. and Grundy, S.J. (1988). Reflective deliberation in the formulation of a school curriculum policy. *Journal of Curriculum Studies, 20* (1), 35-45.

Boud, D. (1993). Experience as the base for learning. *Higher Education Research and Development, 12* (1), 33-44.

Bowden, J.A. and Masters, G.N. (1992). *Implications for higher education of a competency-based approach to education and training.* Interim report, Department of Employment Education and Training, Canberra.

Bradford, M. (1999). Foreword by the Minister for Tertiary Education. In *The national qualifications framework of the future* (White Paper). Wellington: Ministry of Education.

Brady, L. (1992). *Curriculum development* (4th ed.). New York: Prentice Hall.

Burns, J. (1994). 36.412, *Educational research methods: Study guide 2.* Palmerston North: Massey University.

Carr, W. and Kemmis, S. (1983). *Becoming critical: Knowing through action research.* Melbourne: Deakin University Press.

Carr, W. and Kemmis, S. (1986). *Becoming critical: Education, Knowledge and Action Research.* London: The Falmer Press.

Chi, A.T.H., Feltovich, P.J. and Glaser, R. (1981). Categorisation and representation of physics problems by experts and novices. *Cognitive Science, 5,* 121-152.

Clare, J.M.R. (1990). *Teaching and learning in nursing education: A critical approach.* Unpublished Ph.D. thesis. Palmerston North: Massey University.

Codd, J. (1989). Educational leadership as reflective action. In J. Smyth (Ed.), *Critical perspectives on educational leadership.* London: Falmer Press.

Codd, J. (1989). Evaluating tomorrows schools: Accountability or control? *Delta, 41,* 3-11.

Codd, J. (1990). Policy documents and the official discourse of state. In J. Codd, R. Harker and R. Nash (Eds.) *Political issues in New Zealand education.* Palmerston North: Dunmore Press.

Codd, J. (1993a) *36.452 M.Ed.Admin.: Theory and process in education: Study guide 1.* Palmerston North: Massey University.

Codd, J. (1993b). *36.452 M.Ed.Admin: Theory and process in education: Study guide three and readings three.* Palmerston North: Massey University.

Codd, J. (1993c). *Educational reform and the contradictory discourses of evaluation.* Paper presented at the Annual Conference of the New Zealand Association of Research in Education, University of Waikato, Hamilton.

Codd, J. (1994a). *Designing the framework for university qualifications: A question of standards.* Paper presented at the Annual Conference of the Association of Research in Education, Christchurch.

Codd, J. (1994b). Lecture on action research and case study. Delivered at Massey University, Palmerston North.

Codd, J. (1995). *NZQA and the politics of centralism.* Paper presented at the Annual Conference of the New Zealand Association of Research in Education, Massey University, Palmerston North.

Codd, J. (1996a). *Knowledge, qualifications and higher education: A critical view.* A keynote address to the Business of Education Conference, Auckland Institute of Technology, Auckland.

Codd, J. (1996b). Higher education and the Qualifications Framework: A question of standards. *Delta, 48* (1), 57-66.

Codd, J., McAlpine, D. and Poskitt, J. (1995). Assessment policies in New Zealand: Educational reform or political agenda? In R. Peddie and B. Tuck (Eds.), *Setting the standards: The assessment of competence in national qualifications.* Palmerston North: Dunmore Press.

Collins, A., Brown, J. and Newman, S. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In L. Resnick (Ed.), *Knowing, learning and instruction: Essays in honour of Robert Glaser.* Hillsdale, New Jersey: Erlbaum Associates.

Cornbleth, C. (1990). *Curriculum in context.* London: Falmer Press.

Court, M. (1994). *36.496, Women in Educational Organisations: Study Guide 1.* Palmerston North: Massey University.

Creech, W. (1998). Foreword by the Minister of Education. In *Tertiary education in New Zealand: Policy directions for the 21st Century* (White Paper). Wellington: Ministry of Education.

Creswell, J.W. (1994). *Research design: Qualitative and quantitative approaches.* California: Sage.

Crocombe, G.T., Enright, M.J. and Porter, M.E. (1991). *Upgrading New Zealand's competitive advantage.* Auckland: Oxford University Press.

Croft, C. (1993). *The conflicting world of standards-based assessment.* Paper presented at the 15th Annual Conference of the New Zealand Association for Research in Education, Hamilton, New Zealand.

Darling-Hammond, L. (1994). Performance-based assessment and educational equity. *Harvard Educational Review, 64,* 1-30.

de Saussure, F. (1974). *Course in general linguistics.* London: Fontana/Collins. (Originally published in French 1916.)

De Vore, C. (1993). Evaluation and Nursing Education: Where to Now? *Nursing Praxis in New Zealand, 8,* (1), 16-23.

Dewey, J. (1964a). Ends and values (Originally published in *Theory and valuation,* 1939). In R.D. Archambault (Ed.), *John Dewey on education: Selected writings.* New York: The modern Library.

Dewey, J. (1964b). The continuum of ends-means. (Originally published in Theory of valuation, 1939). In R.D. Archambault (Ed.), *John Dewey on education: Selected writings.* New York: The modern Library.

Dewey, J. (1964c). The relation of theory to practice in education. (Originally published in 1904.) In R.D. Archambault (Ed.), *John Dewey on education: Selected writings.* New York: The modern Library.

Dworkin, M.S. (1959). *Dewey on education: Selections with an introduction and notes.* New York: Bureau of Publications, Colombia University.

Education Amendment Act (1990). Wellington: Government Printer.

Edwards, W.L. (1991). *Sniffing the roses: What good schools can be like.* A paper presented to the course, What Makes a Good school? Kohia Teachers Centre, Auckland.

Edwards, W.L. (1998). *87.774 Evaluation of educational organisations: Study guide three.* Palmerston North: Massey University.

Eisner, E.W. (1979). *The educational imagination.* New York: Macmillan.

Elley, W.B. (1992). *Is standards-based assessment feasible?* Paper presented to a national workshop on professional development in educational assessment, Ministry of Education, Wellington.

Elley, W.B. (1995). What is wrong with standards-based assessment? In R. Peddie and B. Tuck (Eds.), *Setting the standards: The assessment of competence in national qualifications.* Palmerston North: Dunmore Press.

Elley, W.B. (1996a). Curriculum reform: Forwards or backwards? *Delta, 48* (1), 11-18.

Elley, W.B. (1996b). Unresolved issues in fitting academic courses into the Qualifications Framework. *Delta, 48* (1), 67-76.

Elliott, J. (1991). Disconnecting knowledge and understanding from human values: A critique of national curriculum development. *The Curriculum Journal, 2* (1), 19-31.

Entwistle, N.J. and Ramsden, P. (1983). *Understanding student learning.* London: Groom Helm.

Evans, G. (1991). Student control over learning. In J.B. Biggs (Ed.), *Teaching learning: The view from cognitive psychology.* Hawthorn: Australian Council for Educational Research.

Fay, B. (1987). *Critical social science.* Cambridge: Polity Press.

Field, L. (1990). *Skilling Australia.* Melbourne: Longman Cheshire.

Fletcher, S. (1992). *Competency-based assessment techniques.* London: Kogan Page.

Foster, W. (1986). *Paradigms and promises: New approaches to educational administration.* New York: Prometheus Books.

Foucault, M. (1970). *The order of things.* New York: Random.

Foucault, M. (1972). *The archaeology of knowledge* (A. Sheridan-Smith, Trans.). New York: Harper and Row.

Foucault, M. (1977). *Language, counter-memory, practice* (D. Bauchard, Trans.). Oxford: Basil Blackwell.

Foucault, M. (1979a). *Discipline and punish: The birth of the prison.* New York: Doubleday.

Foucault, M. (1979b). On governmentality. *Ideology and consciousness, 7,* 5-26.

Foucault, M. (1980). *Power/knowledge* (C. Gordon, Ed., C. Gordon, L. Marshall, J Mepham and K. Soper, Trans.). New York: Pantheon.

Foyster, J. (1991). *Getting to grips with on-the-job competencies.* Leebrook, South Australia: TAFE National Centre for Research and Development.

Freire, P. (1970). *Pedagogy of the oppressed.* (M.B. Ramos, Trans.). Continuum, New York: Seabury Press.

Freire, P. (1972a) *Cultural action for freedom.* Harmondsworth: Penguin.

Freire, P. (1972b). *Pedagogy of the oppressed.* Harmondsworth: Penguin.

Glaser, B. and Strauss, A. (1967). *The discovery of grounded theory.* Chicago: Aldine.

Glaser, R. (1984). Education and thinking: The role of knowledge. *American Psychologist, 39,* 195-219.

Gonczi, A. (1992). Introduction. In A. Gonczi (Ed.), *Developing a competent workforce.* Adelaide: National Centre for Vocational Education Research.

Gonczi, A. and Hager, P. (1992). The policy context for vocational education and training. In A. Gonczi (Ed.), *Adult learning strategies for vocational educators and trainers.* Adelaide: National Centre for Vocational Education Research.

Gonczi, A. Hager, P. and Athanasou, J. (1993). *The development of competency-based assessment strategies for the professions.* NOOSR Research Paper No. 7. Canberra: Australian Government Publishing Service.

Goode, W.J. and Hatt, P.K. (1952). *Methods in social research.* New York: McGraw-Hill.

Goodlad, J.I. and Richter, M.W. (1977). Decisions and levels of decision-making: Process and data sources. In A.A. Bellack and H.M. Kliebard (Eds.), *Curriculum and evaluation.* Berkley, California: McCutchan Publishing.

Gott, S. (1989). Apprenticeship instruction for real-world tasks: The condition of procedures, mental models and strategies. *Review of Research in Education, 15,* 97-169.

Greenfield, T.B. (1975). Theory about organisation: A new perspective and its implications for schools. In T.M. Hughes, (Ed.), *Administering education: International challenge.* London: Athlone Press.

Greeno, J. (1989). A perspective on thinking. *American Psychologist, 1* (44), 134-141.

Grob, L. (1984). Leadership: The Socratic model. In B. Kellerman (Ed.), *Leadership: Multidisciplinary perspectives.* Englewood Cliffs, New Jersey: Prentice-Hall.

Grundy, S. (1987). *Curriculum: Product or Praxis.* London: Falmer Press.

Habermas, J. (1972). *Knowledge and human interests* (2nd ed.). London: Heinemann.

Hager, P. and Gonczi, A. (1993). Attributes of competence. *Australian and New Zealand Journal of Vocational Education Research, 1* (1), 36-45.

Hall, C. (1994). *Obstacles to the integration of university qualifications and courses into the National Qualifications Framework.* Occasional Paper No.1. Wellington: Syndicate of Educational Centres of New Zealand Universities.

Hall, C. (1995a). *Meeting principles which accord with the National Qualifications Framework, but without standards* (Draft paper). Wellington: Victoria University of Wellington, University Teaching Development Centre.

Hall, C. (1995b). University qualifications and the New Zealand National Qualifications Framework. In R. Peddie and B. Tuck (Eds.), *Setting the standards: The assessment of competence in national qualifications.* Palmerston North: Dunmore Press.

Hammond, R.L. (1973). Evaluation at the local level. In B.R. Worthen and J.R. Sanders (Eds.), *Educational evaluation: Theory and practice.* Belmont, California: Wadsworth.

Hanson, E.M. (1996). *Educational administration and organisational behaviour* (4th ed.). Boston: Allyn and Bacon.

Hanson, N.R. (1958). *Patterns of discovery.* Cambridge: Cambridge University Press.

Hargreaves, A. (1992). Cultures of teaching: A focus for change. In A. Hargreaves and M. Fullan (Eds.), *Understanding teacher development.* London: Cassell.

Hargreaves, D. and Hopkins, D. (1993). School effectiveness, school improvement and development planning. In M. Preedy (Ed.), *Managing the effective school.* London: The Open University and Paul Chapman.

Harker, R. (1993). *Searching for trees in the post-modern forest: Tales of the educational dog.* Paper presented at the New Zealand Association for Research in Education Conference, Waikato, New Zealand.

Hawes, J. (1979). Models and muddles in school based curriculum development. *The Leader, 1,* 19-25.

Heywood, L. Gonczi, A. and Hager, P. (1992). *A guide to the development of competency standards for professions.* NOOSR Research Paper No. 7. Canberra: Australian Government Publishing Service.

Hood, D. (1992). *Education and qualifications: The challenge for the future.* A keynote address presented at the Qualifications for the 21st Century International Conference, Victoria University, Wellington.

Hopkins, D., Ainscow, M. and West, M. (1994). *School improvement in an era of change.* London: Cassell.

Hughes, J. (1990). *The philosophy of social research,* (2nd ed.). London: Longman.

Industry Training Act (1992). Wellington.

Irwin, M., Elley, W.B. and Hall, C. (1995). *Unit standards in the National Qualifications Framework.* Wellington: Education Forum.

Isaac, S. and Michael, W.B. (1981). *Handbook in research and evaluation.* (2nd ed.). San Diego, California: Edits Publishers.

Jackson, N. (1993). If competence is the answer, what is the question? *Australian and New Zealand Journal of Vocational Education Research, 1* (1), 46-60.

Jessup, G. (1991). *Outcomes: NQVs and the emerging model of education and training.* London: Falmer Press.

Johnson, M. (1967). Definitions and models in curriculum theory. *Educational Theory, 17* (1), 127-140.

Kelly, A. V. (1986). *Knowledge and curriculum planning.* London: Harper and Row.

King, D.S.(1987). *The new right: politics, markets and citizenship.* London: Macmillan.

Kuhn T.S. (1970). *The structure of scientific revolutions,* (2nd ed.). Chicago: University of Chicago Press.

Laird, D. and Stevenson, J. (1993). A curriculum development framework for vocational education. *Australian and New Zealand Journal of Vocational Education Research, 1* (2), 71-92.

Lather, P. (1986). Research as praxis. *Harvard Educational Review, 56* (3), 257-277.

Lave, J. (1989). The culture of acquisition and the practice of understanding. In J.W. Stigler, R.A. Shweder and G. Herdt (Eds.), *Cultural psychology: Essays on comparative human development.* Cambridge: Cambridge University Press.

Leners, D.W. (1993). Nursing intuition: The deep connection. In D.A. Gaut (Ed.), *A global agenda for caring.* New York: National League for Nursing.

Lofty, J.S. (1993). Can Britain's national curriculum show America the way? *Educational Leadership, 50,* (2), 52-55.

Luke, A. (1995). Text and discourse in education: An introduction to critical discourse analysis. In M.W. Apple (Ed.), *Review of Research in Education,* 21. Washington DC: American Educational Research Association.

Mager, R.F.(1962). *Preparing instructional objectives.* California: Fearon.

Mansfield, B. (1989). Competency and standards. In J. Burke (Ed.), *Competency-based education and training.* London: Falmer Press.

Manukau Institute of Technology (1998). Brave new world of the White Paper. *Staff Newsletter,* November.

Marginson, S. (1993). *Education and public policy in Australia.* Cambridge: Cambridge University Press.

Marginson, S. (1997). Is economics sufficient for the government of education? *New Zealand Journal of Educational Studies, 32* (1), 3-12.

Marton, F.(1988). Describing and improving learning. In R.R. Schmeck (Ed.), *Learning strategies and learning styles.* New York: Plenum.

Marton, F., Hounsell, D. and Entwistle, N. (Eds.). (1984). *The experience of learning.* Edinburgh: Scottish Academic Press.

Marton, F., Hounsell, D. and Entwistle, N. (Eds.). (1984). *The experience of learning.* Edinburgh: Scottish Academic Press.

Massey University. (1990). *Code of ethical conduct for research and teaching involving human subjects.* Palmerston North: Massey University.

Masters, G. and McMurray, D. (1990). *Competency-based assessment in the professions.* NOOSR Research Paper No. 2. Canberra: Australian Government Publishing Service.

Minichiello, V., Aroni, R., Timewell, E. and Alexander, L. (1995). *In-depth interviewing* (2nd ed.). Melbourne: Longman.

Minister of Education. (1989). *Learning for life two.* Wellington: Government Printer .

Ministry of Education. (1997a). *A Future qualifications policy for New Zealand: A plan for the National Qualifications Framework,* (Green Paper). Wellington: Ministry of Education.

Ministry of Education. (1997b). *A future tertiary education policy for New Zealand: Tertiary education review,* (Green Paper). Wellington: Ministry of Education.

Ministry of Education. (1998). *Tertiary education in New Zealand: Policy directions for the 21st century,* (White Paper). Wellington: Ministry of Education.

Ministry of Education. (1999) *The National Qualifications Framework of the Future,* (White Paper). Wellington: Ministry of Education.

Morse, J. (1989). *Qualitative nursing research, a contemporary dialogue.* Rockville, Maryland: Aspen.

New Zealand Qualifications Authority (1991a) *Designing the framework.* Wellington: NZQA.

New Zealand Qualifications Authority (1991b). *The framework and polytechnics.* Wellington: NZQA.

New Zealand Qualifications Authority. (1992). *Strategic Plan, 1992 - 1997.* Wellington: NZQA.

New Zealand Qualifications Authority. (1993a). *A future with standards.* Wellington: NZQA.

New Zealand Qualifications Authority. (1993b). *Working for industry.* Wellington: NZQA.

New Zealand Qualifications Authority. (1993c). *Briefing papers for the incoming Government.* Wellington: NZQA.

New Zealand Qualifications Authority. (1994) *QA News,* Issue 23, August.

New Zealand Qualifications Authority. (1995). *Learn,* Issue 6, October.

New Zealand Qualifications Authority. (1996). *Learning and assessment: A guide to assessment for the National Qualifications Framework.* Wellington: NZQA.

Offe, C. (1994).*Contradictions of the welfare state.* London: Hutchinson.

Parker, I. (1992). *Discourse dynamics: Critical analysis for social and individual psychology.* New York: Routledge.

Pea, R.D. (1987). Socialisation and knowledge transfer problem. *International Journal of Educational Research, 6,* 639-663.

Peddie, R. (1993). *Beyond the norm? An introduction to standards-based assessment.* Wellington: NZQA.

Perkins, D.N. and Salomon, G. (1989). Are cognitive skills context bound? *Educational Researcher*, January-February, 17-25.

Perry, J.M.R. (1985). *Theory and practice in the education of five graduate nurses: A reflexive critique.* Unpublished M.A. thesis. Palmerston North: Massey University.

Perry, W.G. (1970). *Forms of intellectual and ethical development in the college years: A scheme.* New York: Holt, Rinehart and Winston.

Peters, M. and Marshall, J. (1996a). The politics of curriculum: Busnocratic rationality and enterprise culture. *Delta, 48* (1), 33-36.

Peters, M. and Marshall, J. (1996b). *Individualism and community: Education and social policy in the postmodern condition.* London: Falmer Press.

Polanyi, M. (1958). *Personal knowledge: Towards a post-critical philosophy.* London: Routledge and Kegan Paul.

Polanyi, M. (1967). *The tacit dimension.* London: Routledge and Kegan Paul.

Porter, D. (1993). *Developing competency-based curriculum modules.* Sydney: Human Resource Development Division, TAFE.

Posner, G.F. (1988). Models of curriculum planning. In L.E. Beyer and M.W. Apple (Eds.), *The curriculum problems, politics and possibilities.* New York: State University of New York Press.

Potter, J. and Wetherell, M. (1987). Discourse and social psychology: Beyond attitudes and behaviour. Newbury Park, California: Sage.

Pusey, M. (1991). *Economic rationalism in Canberra: A nation-building state changes its mind.* Cambridge: Cambridge University Press.

Pyles, S.H. and Stern, P.N. (1983). Discovery of nursing Gestalt in critical care nursing: The importance of the grey gorilla syndrome. *Image: The Journal of Nursing Scholarship, 15,* 42-45.

Rew, L. (1988). Intuition in decision making. *Image: The Journal of Nursing Scholarship, 20,* 150-155.

Rogers, C. (1969). *Freedom to learn: A view of what education might become.* Columbus: Merrill.

Saljo, R. (1975). *Qualitative differences in learning as a function of the learner's conception of the task.* Gothenburg: Acta Universitatis Gothoburgensis.

Sass, R.E. and Wagner, G.A. (1992). *Moderation strategies for achieving consistency with unit standards: A report to the New Zealand Qualifications Authority.* Wellington: New Zealand Council for Educational Research.

Saussure, F. (1974). *Course in general linguistics.* London: Fontana/Collins. (Originally published in French in 1916.)

Scandura, J. M. (1981). Problem solving in schools and beyond: Transitions from the naive to the neophyte to the master. *Educational Psychologist, 16,* (3), 139-150.

Schatzman, L. and Strauss, A. (1973). *Field research: Strategies for a natural sociology.* Englewood Cliffs, New Jersey: Prentice Hall.

Schein, E. H. (1992). *Organisational culture and leadership.* San Francisco: Jossey-Bass.

Schon, D.A. (1983). *The reflective practitioner.* London: Temple Smith.

Schon, D.A. (1987). *Educating the reflective practitioner.* San Francisco: Jossey-Bass.

Schraeder, B.K. and Fischer, D.K. (1987). Using intuitive knowledge in the neonatal intensive care nursery. *Holistic Nursing Practice, 1,* 45-51.

Schutz, A. (1967). *The phenomenology of the social world.* Evanston: North-western University Press.

Schwab, J.J. (1969). The Practical: A language for curriculum. *School Review, 78,* 1-24.

Schwab, J.J. (1989). Testing the curriculum. *Journal of curriculum studies, 21* (1), 1-10.

Schwartz, H. and Jacobs, J. (1979). *Qualitative sociology: A method to the madness.* New York: Free Post.

Scott, G. (1991). How clever are we ... in the way we train our workers? *Training and development in Australia, 18* (2), 7-12.

Silverman, D. (1985). *Qualitative methodology and sociology.* Aldershot, Hants: Gower Publishing.

Skilbeck, M. (1884). *School-based curriculum development.* London: Harper and Row.

Smith, J.K. (1989). *The nature of social and educational inquiry: Empiricism vs interpretation.* Norwood, New Jersey: Ablex.

Smith, L. (1991), Foreword. In *Designing the framework.* Wellington: NZQA

Smith, L. (1992). *Welcome.* Address presented at the Qualifications for 21st Century: International Conference, Wellington: NZQA

Smith, L. (1994a). Speech delivered to the Association of Polytechnics in New Zealand Annual Conference, Wairakei Resort Hotel, Wairakei.

Smith, L. (1994b). Foreword. In *Education for the 21st century.* Wellington: Learning Media.

Snook, I. (1996). The Education Forum and the Curriculum Framework. *Delta, 48* (1), 47-56.

Snyder, B.R. (1971). *The hidden curriculum.* New York: Knopf.

Snyder, B.R. (1971). *The hidden curriculum.* New York: Knopf.

Stenhouse, L. (1975). *An introduction to curriculum research and development.* London: Heinemann.

Stevenson J. (1993). Competency-based training in Australia: An analysis of assumptions. *Australian and New Zealand Journal of Vocational Education Research, 1* (1), 87-104.

Stevenson, J.C. (1986a). Adaptability: Theoretical considerations. *Journal of Structural Learning, 9* (2), 107-117.

Stevenson, J.C. (1986b). Adaptability: Empirical studies. *Journal of Structural Learning, 9* (2), 119-139.

Stevenson, J.C. (1991). Cognitive structure for the teaching of adaptability in TAFE. In G. Evans (Ed.), *Learning and teaching cognitive skills.*

Stewart, Sir J. (1992). *Foreword.* In the New Zealand Qualifications Authority strategic plan, 1992-1997. Wellington: NZQA.

Stoll, L. and Fink, D. (1995). *Changing our schools.* Buckingham: Open University Press.

Svensson, L. (1976). *Study skill and learning.* Gothenburg: Acta Universitatis Gothoburgensis.

Sykes, J.B. (Ed.). (1976). *The Concise Oxford Dictionary* (6th ed.). Oxford: Clarendon Press.

Taba, H. (1962). *Curriculum development, theory and practice.* New York: Harcourt, Brace and Jovanovich.

Taylor, F.W. (1911). *The principles of scientific management.* New York: Harper and Row.

Tesch, R. (1990). *Qualitative research: Analysis types and software tools.* New York: Falmer.

Thompson, P. (1991). *Competency-based training: Some development and assessment issues.* Adelaide: National Centre for Vocational Education Research.

Toohey, S. Ryan, G. McLean, J. and Hughes, C. (1995). Assessing competency-based education and training: A literature review. *Australian and New Zealand Journal of Vocational Education Research, 3* (2), 86-117.

Torrance, H. (1991). Combining measurement-driven instruction with authentic assessment: Some observations of national assessment in England and Wales. *Educational Evaluation and Policy Analysis, 15* (1), 81-89.

Tyler, R. (1949). *Basic principals of curriculum construction.* Chicago: University of Chicago Press.

Walker, D. (1971). A naturalistic model for curriculum development. *School Review,* November, 51-65.

Watson, A. (1993). Competency-based vocational education and training in Australia: Some unresolved issues. *Australian and New Zealand Journal of Vocational Education Research, 1* (2), 93-125.

Weedon, C. (1987). *Feminist practice and poststructural theory.* New York: Basil Blackwell.

Whelan, G. (1988). Improving medical students' clinical problem-solving. In P. Ramsden (Ed.), *Improving learning: New perspectives.* London: Kogan Page.

Winder, R. (1996). Devolution in the polytechnic sector: From policy to practice. *Delta. 48* (1), 93-100.

Wittgenstein, L. (1953). *Philosophical investigations.* G.E.M. Anscome (Trans.). Oxford: Blackwell.

Yin, R.K. (1984). *Case study research: Design and methods.* Beverley Hills: Sage.
Young, C.E. (1987). Intuition and nursing process. *Holistic Nursing Practice, 1,* 52-62.
Young, M.F.D. (Ed.). (1971). *Knowledge and control: New directions for the sociology of education.* London: Collier Macmillan.

ETHICAL PROTOCOLS

Ethical Protocols

1. At the time volunteers are sought for the study, information will be provided on the purpose of the research and the possible benefits and dangers for participants.

2. Two preliminary interviews will be arranged with each tutor who is selected to participate and who wishes to do so. The first will be to discuss the nature, dangers and benefits involved for the potential participant and the second to answer his or her questions before he or she makes a final decision whether to participate. The time between will provide an opportunity for reflection.

3. Participants will be asked to sign a consent form.

4. Any classes to be observed will be informed of the reason for the proposed observation and their permission sought.

5. Pseudonyms will be used in order to provide as much anonymity for participants as possible. Care will be taken not to record in the thesis or reports any information that might be anticipated to lead to the identification of any of the participants. The name of the polytechnic where the study was conducted will not be recorded in the thesis or reports.

6. Any potentially "sensitive" given divulged during the study will be treated confidentially by the researcher.

7. Participants will be able to withdraw from the study at any point without any negative reaction on the part of the researcher or anybody else.

8. Participants in the interviews will be able to ask for the audiotape to be turned off at any stage of the interview. (and on occasions the researcher may turn off the audiotape on his own initiative; for example, in order to check the participant's awareness of the potential sensitivity of information being revealed and possible consequences for the participant.)

9. Transcripts of interviews will be returned to participants for them to check for accuracy and any "sensitive" information that they might wish to withdraw.

Copy of the letter given to each participant lecturer at a

preliminary meeting arranged to discuss

the requirements of the research

17 October 1995

Mr Robinson
Lecturer
Automotive Engineering
Faculty of Technology and Science
XY Polytechnic

Dear Andy

Thank you very much for agreeing to meet me to discuss the research that I am planning to do. As I said when I spoke to you on the phone, I am working on a thesis which is part of the requirements for an MEd Admin, at Massey University. The Polytechnic's Research and Ethics Committee and the heads of the two faculties involved have given their approval for me to carry out the research at the XY Polytechnic.

My interest in the topic comes, first, from my experience as a teacher and in educational administration:- as a primary teacher for ten years, a polytechnic tutor at AB Polytechnic for 8 1/2 years, a head of department, at XY Polytechnic, for 13 years and in my present position as Manager of New Course Development, at XY Polytechnic, for 2 years. Secondly, from the study I've been doing over the last two years, as a part-time student in the MEd Admin course, at Massey University. And, thirdly, from my belief that learning is a human process involving more than can be readily observed in a direct way and measured as learning outcomes, such as those that we are tending to write in curricula these days.

My study is designed to explore whether in the way lecturers think about their teaching, they actually integrate with the formal curriculum requirements their own knowledge of less tangible values and attitudes required in the sort of work for which the students are being prepared. As already indicated, I am beginning the research knowing that I hold a particular view. Therefore I have been very careful to plan the research in a way that will allow an unbiased assessment of the information collected. I do not expect that your views will necessarily agree with mine.

I hope the following information will provide further details of the research that I've planned and, at the same time, clarify what I am asking you to do, if you decide to accept my invitation to be a participant in the research.

TITLE OF THE STUDY

Polytechnic Lecturers' Conceptualisations of Learning in the Light of Formal Curricula: A Critical Study of Three Nursing Lecturers and Three Automotive Engineering Lecturers

AIMS OF THE RESEARCH:

- To explore through discussion about each lecturer's teaching whether there is a difference between the view of learning stated and/or implied in the formal written curriculum and the lecturer's own view of the learning that is required.

- To explore, through discussion about each lecturer's teaching, possible implications for the lecturer's teaching practice of any gap that exists between the lecturer's view of the learning and the view expressed or implied in the formal curriculum.

- Should the gap be found to exist, to develop a theoretical understanding, based upon educational writing, of the differences between lecturers' views of learning and the views expressed in the formal curricula.

- An additional aim is to provide an opportunity for each lecturer to reflect on their teaching practice and, through that process, the opportunity to gain new insights into their teaching practice.

WHAT YOU ARE ASKED TO DO

1. Participate in four interviews, which may be spread over a period of about three months. One requirement of the study is that the two interviews related to a teaching situation be as close to the time of the

teaching as can be arranged. Within this requirement the dates, times and place of interviews will as far as possible be arranged to suit you. Each interview is expected to last from 30 to 45 minutes and will be audiotaped so that I can analyse the conversation later.

I plan to organise the interviews in the following way, but the actual discussion on the day will not be pre-determined:

Interview One

Discussion to choose a forthcoming "teaching session" (either a single lesson or a series of lessons) as a focus for discussion in the next two interviews. And discussion of such aspects as where the session fits in the overall programme and what its significance is in relation to the purpose of the training.

Interviews Two and Three

Discussion before and after the teaching session. This would involve talking about what is being planned and what actually happens. These are the two interviews that need to be as close as possible to the lesson (or series of lessons) chosen.

Interview Four

A follow-up interview to provide an opportunity for further discussion of any points which arise, either during previous discussions or when I listen to the audiotapes. Before this interview I will give you a copy of selections that I have transcribed.

2. Read the transcripts of sections of the interviews that I select for possible use in the study. I want you to do this for two main reasons: First, to consider any possible implications of quoting, or referring to parts of the conversations, in the final thesis. Secondly, to check that your intended meanings are reflected in the statements and they do not, for example, take on different meanings because they are incomplete.

ASSURANCES TO YOU, AS A PARTICIPANT

- Should the research reveal a gap between your view of learning and the outcomes expressed in formal written curriculum, there is no basis for suggesting that your view is in some way wrong or inadequate. To the contrary, much existing writing on teaching suggests there will be differences, particularly where the curriculum focuses on direct observation of measurable outcomes. But this does not mean, on the other hand, that there ought to be a difference.

- I will do my best to ensure that your participation in the research is anonymous. For example, I will use a pseudonym instead of your name in all the documents and when I label materials such as the tapes. Another precaution will involve my careful checking of the draft document to remove any information that might lead to your identification. (However, it is still possible that some of your colleagues who knew you were involved in the research may recognise your input.)

- The audiotapes and transcripts will be available to me, my two thesis supervisors, the typist(s) and the thesis examiners. All of these people are required to maintain the confidentiality of the participants.

- As well as taking the precaution of identifying the audiotapes and transcripts by pseudonyms, I will keep them in a safe place. Because I do not intend to transcribe all the conversation recorded, I will need to keep the tapes and transcripts as a record associated with the study, until the final examination of the thesis has been completed by the markers. Once the thesis is marked, I will destroy the audiotapes and transcripts.

- You may withdraw from the study at any time without any adverse implication or recriminations of any sort.

- At any time during an interview you may ask me to turn off the audio recorder and/or to delete a statement from the recording. On some occasions I may turn off the tape myself in order to clarify possible implications of what is being said.

- I will be pleased to clarify any aspect of the study by phone or in person.

SPECIFIC USES OF THE INFORMATION

- As already indicated, I am preparing a thesis as part of the requirement for an MEd Admin, at Massey University. The final thesis will be available through the Massey University library.

- I also intend to use the findings as the basis for papers presented at educational seminars, conferences, etc, and for papers submitted to educational journals.

- I am required to provide the Manager, Academic Development and Research, XY Polytechnic, with a copy of "the final research report - or a suitable extract". My intention is to present an "executive summary" of the research. I will also give a copy of the final thesis to the XY Polytechnic Library.

I will contact you again shortly. There may be some points you would like to talk over.

Once again thank you for your interest to date.

Yours sincerely

John Perry

COPY OF CONSENT FORM

Consent to Participate in the Research

I.....voluntarily consent to participating in the research in this study. The purpose and nature of the research has been explained and all questions I have asked have been answered to my satisfaction. I understand that I may withdraw at any time.

Signed:.....Date: .....

Witness:.....Date: .....

Consent to use of audiotapes and transcripts

I give my consent to the use of audiotaping and the production of transcripts therefrom under the following conditions:

1. That I may request that the audiotape be turned off at any time and that I may have recorded statements deleted.

2. That all tapes and transcripts will be kept in a safe place while the study is in progress and will be destroyed following the completion of the examination of the thesis.

3. That the only persons having access to the tapes and/or transcripts will be the researcher, his supervisors, the thesis examiners and the tape transcriber(s).

4. That any quotation from the tapes or transcripts used in a publication or report will be subject to my approval on the first occasion of its use.

Signed:.....Date: .....

Witness:.....Date: .....