Implications for Higher Education of a Competency-Based Approach to Education and Training

John A Bowden
Geofferey N Masters

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<tr>
<td>ACER</td>
<td>Australian Council for Educational Research</td>
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<td>AVCC</td>
<td>Australian Vice-Chancellors Committee</td>
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<td>CATS</td>
<td>Credit Accumulation and Transfer Scheme</td>
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<td>COSTAC</td>
<td>Commonwealth-State Training Advisory Committee</td>
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<td>DEET</td>
<td>Department of Employment, Education and Training</td>
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<td>ERADU</td>
<td>Educational Research and Development Unit</td>
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<td>ITAB</td>
<td>Industry Training Advisory Body</td>
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<tr>
<td>NACSR</td>
<td>National Advisory Committee on Skills Recognition</td>
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<td>NBEET</td>
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Executive Summary

It is not within the project brief for the authors of this Report to make recommendations concerning the matters investigated. Rather, the Report presents in the first seven chapters a summary of the data collected and in Chapter Eight an analysis, using a view of competence through a relational model, of some of the issues that have emerged.

The evidence suggests that universities, the professions, employers and the community have much to gain from the activities of the past few years concerned with the development of competency-based standards by the professions. It is doubtful that these gains will be in exactly the form that some in the competency movement intended but the outcome reflects the fact that the whole process has been dynamic and developmental. However, we do not believe that a full-blown competency-based approach to education will become dominant in university courses.

We expect that a number of claims by universities about their special role will be strengthened by the attention these claims have received during the debate of recent years, which has resulted in more concrete programmes being developed within universities, aimed at enhancing their special educational role.

In developing competency-based standards, one of the benefits for the professions is that they are better able to understand and articulate their professions. Most professional organisations have used the processes of standards development to improve dialogue and relations between themselves and the universities with regard to curricula.

We believe that as a consequence, some of the fears of universities that may have originally been well-founded, can now be put aside; some of the desirable objectives intended by the professions, argued for by many employers and ultimately supported by the university representatives, should be pursued and can be attained. These include greater attention to the links between workplace performance and discipline-based knowledge, increased efforts to address more concretely the attainment of underlying capacities of a generic kind and explicit consideration of the relation among all of these in curriculum development, teaching and learning activities. Progress of this kind will best take place in the context of the existing, long-standing and largely successful relationships many universities have with the professions and employer groups through course advisory committees and accreditation processes.

Indeed, if there is one continuing danger both to university education and to professional practice, it is the possibility of bureaucratically inspired external interference in the planning and conduct of professional education. As will be shown in this report, university education in general and professional education in particular are complex processes in which conceptual understanding and practical experience combine to enable the development of the higher order capacities that are called for by employers, governments and the community. Such complex educational outcomes are likely to be jeopardised by bureaucratic imposition of narrow perspectives, both of professional practice and also of educational processes and outcomes. These are best left to the professions and the universities who can use the experience of the past few years to assist the evolution of better professional, educational programmes that meet both community and individual student needs, not only in the short term but also in the longer term, as circumstances and need change.
CHAPTER ONE

INTRODUCTION AND METHODOLOGY

1.1 Introduction

1.1.1 This Final Report contains re-drafted Chapters Two to Six from an Interim Report produced in December 1992. In addition, it includes an analysis of discussion sessions held in Adelaide, Brisbane, Canberra, Melbourne, Perth and Sydney during February and March 1993. These meetings were organised for the purpose of receiving feedback on the Interim Report from representatives of University Vice-Chancellors and professional organisations. The Final Report includes two new chapters: Chapter Seven which presents analysis of data from feedback on the Interim Report; and Chapter Eight which draws the study together through analysis of a relational model of competence developed by the authors.

1.1.2 In Chapters Four to Seven, where relevant, the actual words of respondents have been quoted. This approach has been used to provide as much raw data as possible, without excessive interpretation by the authors, so that readers may draw their own conclusions. This is not to deny that some of the value positions of the authors are present in those chapters, not only in the methodology of data collection, but also in its analysis and selection for this Report and the way it is presented. Of course the views of the authors are explicit in Chapter Eight.

1.2 The authors' perspective

1.2.1 The recent work on competency-based standards in the professions has produced a myriad of responses in the educational media, which have reflected a variety of different value judgements amongst their authors. It is important that we clarify our perspective in carrying out this study and writing this Report.

1.2.2 Our perspective is primarily an educational one. We begin with a view of university education that is broad and holistic. We see university education as providing students with opportunities for personal and intellectual development and
we know that there are better and worse ways of providing such education. We know that prescriptive, narrow curricula, and assessment that rewards recall of unrelated detail or demonstration of narrowly defined skills, encourages rote-learning and is the antithesis of good education. While university education also prepares students for professional roles in the workplace, we see that function not simply as an addition to the above but rather integrated with the general purposes of education. While this is a view of education held by many, what is important for this project is that we are looking at all issues from that educational perspective. What matters is not simply the fact that we have those views, it is that we use them to inform our judgements.

1.2.3 So what are the implications for higher education of the development of competency-based standards in the professions? Is such a development likely to be beneficial for university education? The answer to this latter question necessarily depends on a number of other questions that may be asked.

1.2.4 First of all, will the development of competency-based standards have any impact on what goes on in universities anyway? The answer to that question relies on judgements about the reasons for the professions developing the standards, the expectations of government organisations who have supported such a development and the activities of other organisations who may anticipate using the results from the work of the professions. The way that the universities see their relationships with the professions is also important. In all of these matters, not only are the intentions of the various groups relevant to the question of likely impact but so are the capacities of the various groups to make their intentions felt.

1.2.5 The degree of influence of various groups on university programmes is not the only important issue. A second issue is the quality of the impact if it were to occur. If the influence on university programmes were to produce narrower, less intellectually demanding courses, then the implications for universities would be rightly regarded as negative. If they were to add a dimension that is desirable but currently non-existent in university courses, then the implications would be positive.

1.2.6 Any conclusion one wishes to draw about the implications for higher education of a competency-based approach necessarily requires consideration of the complex web of intentions, capacity to influence, the potential of the approach itself and the quality of its implementation. The answer is unlikely to be a simple one and it is
difficult to understand how one could take the unqualified position that a competency-based approach to education and training is good by definition and that the development of competency-based standards will necessarily have a beneficial effect on university programmes. They may, but they may not. Neither is it reasonable to assume that the development of such standards by the professions must be detrimental to university education. Again, it may or it may not.

1.2.7 Yet such extreme positions are often put forward in the educational media as self-evident truths. One has to react to such assertions with a statement that 'it all depends'. The purpose of this study is to expose some of the matters on which any conclusions must depend. It is a study whose aim is to describe as clearly and as completely as possible what the professions are doing, the reasons they give for doing it and the views of other interested groups on relevant issues.

1.3 Federal government policy

1.3.1 In an address to the Australian Council of Professions in November, 1992, the then Minister for Higher Education outlined Government policy in the area of competency-based education and training (Baldwin, 1992).

1.3.2 Major points made in the address were that Australia's universities are not included in the Government's plan for integrated national training and education, that formal competency standards established by training agencies to assess vocational proficiency would not be extended to professional training in higher education, that there is no government policy stipulating that competency standards must be adopted by professions or incorporated into higher education programs and that it is the responsibility of the professions and universities to ensure graduates possess the necessary skills to practise.

While the work on developing professional competency standards has progressed on a profession-by-profession basis, and with the support of NOOSR, there is no Government policy stipulating that competency standards must be adopted by professions or incorporated into higher education programs preparing students for the professions. Higher education institutions are not required to adopt such a position to be part of the UNS - I never expect they will be. Professional bodies have a right to determine their membership requirements and a responsibility to maintain standards and to ensure that professional services meet the needs of clients. Some professions are pursuing the use of competency standards for entry or professional development on the basis of their own judgements about merit. Other professions do not wish to adopt a competency approach. These are decisions which are properly made by the professions in consultation with universities and employers, and should be respected as such. (Baldwin, 1992, 7)
The recently released second edition of the NTB's Policy and Guidelines states, 'where standards are developed for professions, and for professional recognition, it will be for the professions concerned and the higher education institutions providing education for the professions to discuss and establish the relationship between these standards and education provided by these institutions'. 'NTB endorsement of competency standards, where delivery is by self-accrediting higher education institutions, does not have the same effect on accreditation and delivery as in the vocational education and training sector'. I endorse this position.

(Baldwin, 1992, 8)

I certainly would not want to see higher education courses skewed to the extent that they focused solely on the delivery of competency assessment. ... The professions and the universities should continue to discuss and negotiate the relation between professional entry needs and the content of university courses. It is the responsibility of higher education institutions to ensure that the outcome of their educational process is a quality graduate, with the necessary attributes, including the practical application of professional knowledge and skills, where appropriate.

(Baldwin, 1992, 8)

1.3.3 Whether these policies will survive the Ministerial changes that took place in the early months of 1993 is unknown.

1.4 The research project and the project team

1.4.1 The work described in this Final Report is the result of a team approach; the team members are as follows:

- Professor John Bowden (Principal Consultant)
- Dr Geoffrey Masters (Principal Consultant)
- Ms Lisa Ball
- Dr Gloria Dall'Alba
- Mr David McGregor
- Associate Professor Elaine Martin
- Mr John Milton
- Mr Jörgen Sandberg
- Mr Morris Watson

1.4.2 The responsibility for this Final Report lies with the Principal Consultants but Lisa Ball was responsible for a large part of Chapter One and Chapter Six was written by Elaine Martin, John Milton and David McGregor.

1.4.3 The Successful Tender: In April 1992, the National Office of Overseas Skills Recognition (NOOSR) and the Higher Education Division of the Department of Employment, Education and Training (DEET) invited tenders to conduct a study to examine the implications for higher education of a competency-based approach to education and training, based on work being undertaken within the professions under NOOSR guidelines. The Educational Research and Development Unit
1.4.4 The context for the proposal was that the notion of competence is complex and not self-evident. It was proposed that there is a range of views about what competence is and what a competency-based approach to education and training involves. The particular views expressed are often closely aligned with the roles and responsibilities of the contributors to the debate. The views about what a competency-based approach involves are seen to rest upon differing perspectives about what constitutes competence.

1.4.5 The two broad aims of the study were as follows:

(a) To explore the implications for the Australian higher education sector of a competency-based approach to education and training.

(b) To investigate the link between the work of the professionals developing national competency standards and higher education course offerings.

1.4.6 In order to describe the range of views held about competency-based education, its potential and its problems in the eyes of academics, professional organisations and employers, data have been gathered by the following means:

* an interview study of representatives of professional organisations
* a questionnaire study of academics
* telephone interviews of employers
* a literature review
* feedback on the Interim Report through capital city discussion meetings

1.5 Interviews of representatives of professional organisations

1.5.1 To explore the range of views held about competence within the professions, we interviewed representatives of professional organisations who are currently working on drafting national competency standards for their respective professions. Interviews were recorded and then transcribed.

1.5.2 The method of interviewing and transcript analysis was derived from the phenomenographic research methodology used successfully by the research group...
over several years (Bowden et al, 1992; Dall'Alba et al, 1989). This approach allowed the respondents to express their own interpretations and views about competence and to clarify the methodology they have employed in drafting their competency standards, without being led to particular conclusions by the interviewer. Interviewees were also asked to discuss their views on a competency-based approach to education and training and the implications that the national competency standards would have for the relevant undergraduate course. Analysis of the interviews looked for the different ways the interviewees perceived the issues being explored.

1.5.3 The criteria used for selecting the ten professions for our sample were as follows:

(a) The size of the profession - based on four categories which included practising professional members up to 5000, from 6000 to 10,000, from 11,000 to 50,000, from 51,000 to 100,000, and 100,000 plus.

(b) The project stage that each profession was at - categorised by NOOSR as follows (refer to 'Competency Update' No.1 Feb/March 1992):

   Stage One - Profession has identified Units and Elements of Competency

   Stage Two - Profession after completing draft of competency standards is developing the performance criteria for each element, and the range indicators (if these are applicable).

   Stage Three - Profession is working on development of assessment methodologies.

(c) Type of Discipline - to include professions across a range of disciplines.

(d) Registration requirements for professional membership - selected to range across fully regulated, partially regulated and non-regulated.

1.5.4 The professions selected according to these criteria were accounting, agricultural science, architecture, engineering, nursing, physiotherapy, psychology, teaching and veterinary science (NOOSR involvement in the teaching project is limited to some funding support). The tenth profession selected, with assistance from the Project Steering Committee, was medicine. This was chosen since it was believed to be of relevance and interest to this project to investigate a profession which had chosen not to undertake a NOOSR Competency Project.

1.5.5 Permission to include selected professions within our study was sought from the competency project contact person within each profession. Interviews were conducted in Adelaide, Canberra, Melbourne, Perth and Sydney.
The questions asked in the interviews (see Appendix A for full interview schedule) were grouped into four categories as follows:

* Current practice.
* Development of Competency Standards.
* Implications for higher education.
* Specific questions relevant to the particular profession.

Interviewees in eight cases included the person responsible to NOOSR for the competency project the group was undertaking, except for medicine and teaching in which fields no NOOSR projects were operating. In six cases an academic involved in the project took part in the interview. A detailed report of the findings of the interviews is provided in Chapter Four.

**Questionnaire survey of academics**

The aims of the survey were as follows:

(a) To assess the current level of knowledge and understanding within the higher education sector of a competency-based approach to education.

(b) To identify attitudes or concerns within the higher education sector as to the likely effects of a competency-based approach to education.

Neither time nor resources allowed us to include comprehensive interviews with academic staff in the research plan. A two-stage survey process was used instead.

Once the areas of interest for the academic survey had been established, four pilot interviews were conducted using the proposed survey question format. After some preliminary questions intended to elicit the level of knowledge about competency-based standards and a competency-based approach to education and training, interviewees were provided with some background information on the competency movement to enable them to respond more fully to specific questions, particularly if they had little or no prior experience with national competency standards being developed within the professions. On the basis of the interviewees' responses, the final versions of the questionnaires were drafted.
1.6.4 It was decided that ten disciplines would be surveyed with the intention of receiving about ten responses from each - an expected total of about one hundred. In the event, five vocation-specific and five non-vocation specific disciplines were selected and a sixth vocation-specific discipline added on the advice of the Project Steering Committee.

1.6.5 The vocation-specific disciplines chosen were accounting, nursing, architecture, engineering and teaching. Through consultation with the Steering Committee it was subsequently agreed to include veterinary science. These disciplines correspond to six of the ten professional organisations chosen for the interview study (see paragraph 1.5.4). They were selected because they represent a range in the following: the size of the professions, stage of the projects and degree of regulation. Selection was also made on the basis that professions included in the study would represent a broad cross-section of disciplines of those professions developing competency standards under NOOSR guidelines.

1.6.6 The non-vocation specific disciplines chosen were mathematics, chemistry, English, art, and politics. These five disciplines were selected on the basis that they represent disciplines that incorporate a broad range of service subjects within undergraduate professional courses.

1.6.7 In acknowledgment of its two aims (as stated in paragraph 1.6.1), it was decided that the academic survey should consist of two questionnaires. The initial questionnaire (see Appendix B) comprised questions that would allow us to ascertain the extent of respondents' knowledge of the competency movement and what the respondents actually perceived competency to be. Questions were open-ended and no information about competency issues was provided.

1.6.8 The 'background information' supplied with the second questionnaire (shown in Appendix C) briefly describes the series of events concerned with the competency movement in Australia, such as the establishment of the National Training Board (NTB) and NOOSR, their involvement with the professions, reasons for developing national competency standards and the role of the various groups and bodies involved. It was decided to include this information within the second questionnaire, which specifically sought information from the respondents on the implications of a competency-based approach to education and training for higher education. It was believed that the data gathered would be more informative to our

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study if the respondents were provided with some background knowledge prior to answering the more specific questions in the follow-up questionnaire.

1.6.9 The following criteria were used in selecting Australian universities that offered undergraduate courses in the eleven disciplines selected:

- the geographical location of the university (rural; inner metropolitan; outer metropolitan).
- the age of the university (pre- or post-1987)
- size of the institution (small or large campus).

1.6.10 Within each discipline a cross-section of universities was selected to be representative of all of the above criteria. The engineering discipline selection was divided equally into chemical, civil, mechanical and electrical engineering. Teaching was divided into early childhood, primary and secondary teaching. Also taken into consideration was the number of universities, and the number of academics employed within each state. The percentage of departments that we selected within each state was calculated and then compared with the percentage of academics employed within each of those states and territories. The greatest numbers of departments selected were in NSW and Victoria reflecting the number of academics employed and also the number and range of undergraduate courses.

1.6.11 The questionnaires were distributed to both the Head of Department and a Course Coordinator within each selected department (see Appendix D for a list of university departments surveyed).

1.6.12 Open ended questions were used in both the initial and follow-up questionnaires. One hundred and eighty seven initial questionnaires and covering letters were sent to Course Coordinators and Heads of Departments. The questionnaires were numbered for the purpose of identifying the correct person to forward the second questionnaire to and also to relate the completed first and second questionnaires for data analysis.

1.6.13 Upon the receipt of a completed first questionnaire, a second questionnaire was sent out. Analysis of all completed questionnaires was undertaken using a method derived from the phenomenographic method. The findings of the academic survey are discussed in detail in Chapter Five.
1.7 Telephone interviews of employers

1.7.1 A telephone survey of employers was undertaken to ascertain their views on a number of issues concerned with competency-based education and training, the same issues as those canvassed with professional groups and academics. In total, 32 interviews were conducted with representatives from four professional areas (teaching, accounting, nursing and engineering). The employers within the four professions were spread across public and private, small and large organisations (see Appendix E for list of employer organisations surveyed). These four professions were selected from among the five which were first chosen for both the academic survey and the interviews of professional organisations.

1.7.2 The questions for employers were of the same nature as those asked in both the academic and professional organisations survey and interviews and included questions pertaining to the employer's view of competence, the adequacy of graduates entering the workforce, the implications of national competency standards for higher education, employers' views on the involvement of professional organisations, professionals and employers in higher education, and the implications of a competency-based approach in higher education for their organisation.

1.7.3 Four pilot interviews of 30 - 45 minutes duration were conducted with employers. These were taped and analysed and led to the final set of employer questions.

1.7.4 After refinement of the interview schedule through the pilot interviews, full-scale interviews in each of the four professions were conducted in one small private organisation, one small public organisation, one large private organisation, and one large public organisation. Interviews were undertaken with individuals in senior management or leadership roles who were directly responsible for supervising professionals in the organisation. The findings of the analysis of the interviews are discussed in Chapter Six. Details of the interview schedule are provided in the Appendix F.
1.8 Capital city discussion sessions

1.8.1 The Interim Report provided readers with a detailed picture of the data collected by the research team. The distribution of the Interim Report and the subsequent feedback from interested groups and individuals throughout Australia were seen as part of the data collection process that informed this Final Report.

1.8.2 In order to maximise response to the Interim Report discussion sessions were held in six capital cities. Representatives were invited to attend from: universities Australia-wide; all state bodies of the Australian Council of Professions; and professions working on competency projects (see Appendix G for list of organisations represented at the meetings). Up to 18 representatives were present at each meeting, with the universities and the professions being represented on each occasion. In total there were 50 university representatives and 21 representatives of professional organisations. Each discussion took place over a two-hour period, was recorded and the tapes transcribed.

1.8.3 The issues raised by participants at these meetings are discussed in Chapter Seven. Quotes have been used where appropriate to indicate the nature of the discussions and the issues raised.
CHAPTER TWO

COMPETENCY-BASED EDUCATION AND TRAINING: PRINCIPLES AND PRACTICE

2.1 Introduction

2.1.1 Competency-based education and training (CBET) are being promoted in Australia as key elements in the Commonwealth government's agenda for training reform and improved skills recognition. The adoption of competency-based approaches (CBA) to education and training is seen to have the potential not only to influence the ways in which employment-related competencies are assessed and recognised, but also to influence the structure and delivery of formal education and training programmes and to provide enhanced opportunities for articulation between sectors and for credit transfer across institutions.

2.1.2 Despite the enthusiasm with which CBET is being promoted at the present time, the concept of a competency-based education and training system is an evolving idea, details of which are still being worked out. This is particularly true in relation to schools, higher education institutions and the professions. The notion of 'competency-based' education programmes was first introduced in the United States in the late 1960s. Current initiatives to introduce CBET in Australia have similarities to developments in England over the past five years, where this approach has been promoted as part of that country's new system of National Vocational Qualifications (NVQs). In Australia, as in England, CBET is an organic concept evolving with experience.

2.1.3 Although the imperatives for the introduction of CBET have been different in different countries at different times, and the ways in which this concept has been operationalised have changed over time, the basic principles and intentions of CBET have remained essentially unchanged since the 1960s. This chapter begins by outlining six key principles of CBET drawn from the writings of its proponents over the past two decades. The purpose is to clarify and separate the intentions of competency-based education and training from particular attempts to implement those intentions.
2.1.4 The chapter then briefly reviews the history of implementations of CBET, beginning at its source in teacher education in the United States in 1967/68 and following its evolution through applications to other professional education programmes in the U.S.A. in the 1970s, vocational training programmes in the U.K. and Germany in the 1980s, and vocational training and professional skills recognition in Australia in the 1990s. This brief overview provides useful insights into the ideas underpinning CBET in Australia at the present time, including efforts to re-define the phenomenon in Australian terms.

2.1.5 A number of general issues raised by attempts to introduce competency-based models of education and training are then considered in Chapter Three. These include questions of the appropriateness of particular methods of subdividing and characterising occupational areas in terms of discrete 'competencies'; methods for incorporating knowledge and understanding in CBET approaches; and the feasibility of developing valid and reliable assessment under a CBET model. Chapter Three ends with a consideration of some specific implications of competency-based approaches for institutions of higher education.

PRINCIPLES AND INTENTIONS

2.2 A focus on outcomes

2.2.1 A first characteristic of competency-based education and training is its emphasis on the specification and assessment of outcomes (referred to as competencies). This focus on outcomes is often contrasted with more traditional concerns of education and training programmes with inputs such as methods of student/trainee selection, lengths of courses and training programmes, class sizes, teacher-pupil ratios, and so on. An emphasis on outcomes rather than inputs is a defining characteristic of CBET as implemented in the United States in the 1970s:

>>> Competency-based education emphasises the primacy of the outcome goal as the fundamental concern of the educational enterprise and treats time and opportunity as elements that serve those goals. (Spady, 1977, 11)

England in the 1980s:

>>> The debate on education has too often been concerned with structures and delivery and too little concerned with content and outcomes. (U.K., Task Force on Training, 1989)
and Australia currently:

Competency-based training is a way of approaching vocational education and training that places primary emphasis on what a person can do (the outcome) rather than the means by which the competencies are obtained (the input). (Johnston, 1992, 4)

2.2.2 Competency-based education and training are not unique in their intention to focus more sharply on education and training outcomes. This intention is central to many current initiatives in education here and overseas, including the development of educational performance indicators; the setting of national education goals; the introduction of statements and profiles for key areas of the school curriculum; and the development of programmes to assess and report levels of student achievement and to monitor education standards over time. These initiatives share an intention to clarify and to communicate educational outcomes and to establish frameworks for setting goals and monitoring progress towards the achievement of those outcomes.

2.2.3 Among the features which distinguish competency-based education and training from this more general orientation towards the clearer specification and monitoring of educational outcomes is its concern with outcomes relevant to employment.

2.3 Greater workplace relevance

2.3.1 Running through the literature on competency-based education and training is an ongoing concern over the workplace relevance of much of the content of formal education and training programmes. There is a commonly-expressed belief that institution-based courses too often emphasise theoretical or 'book' knowledge at the expense of the ability to apply knowledge to perform practical tasks and to fulfil workplace roles. Tuxworth (1989) describes concerns that led to the adoption of competency-based approaches to education and training in the United States in the 1970s:

Vocational curricula were usually devised by teachers for institution-based education, often placing more emphasis on book knowledge than on direct knowledge of practice. There was persistent dissatisfaction in U.S. industry with the relevance of college-based courses.

(Tuxworth, 1989, 16)

2.3.2 Similar concerns surrounded the movement to introduce competency-based vocational education and training in Britain in the 1980s:
Vocational education and training tends to be 'educationally' oriented both in content and the values which are implicit in its delivery. It has tended to concentrate on the acquisition of knowledge and theory while neglecting performance. (Jessup, 1989, 66)

2.3.3 And recent initiatives in Australia to promote CBET have similarly been based on concerns over the workplace relevance of many formal education and training qualifications:

Dissatisfaction with the workplace relevance of many credentials derived in the traditional model of curriculum development based on the inputs of 'knowledge', 'understanding' and 'skill attainment' has led to an emphasis on working from the outcome--increasingly referred to as a competence. A competence is the ability of the learner to put skills and knowledge into action. (Humphrey, 1992, 61)

2.3.4 Advocates of competency-based approaches point out that education and training curricula tend to be designed to meet assumed rather than actual workplace needs. A major intention of CBET is to make the outcomes of formal education and training more appropriate to future workplace needs. Related to this intention is a widely-held belief that societies such as Australia have traditionally placed too much value on theoretical/educational' learning to the detriment of vocationally-relevant competencies.

2.3.5 A goal of competency-based education and training is to reverse the direction in which decisions about the content of education and training programmes are made. In the words of one British Government report, the intention of CBET is to 'lead rather than follow' education and training. By re-designing formal programmes from the perspective of employment, the intention is that they will articulate more directly with industry, and that vocational qualifications will better reflect employment needs:

The purpose of CBET is to drive the system from the starting point of competence and standards. This process replaces what is imagined to be the former situation--where learning and assessment drive the system, based on curricula which are descriptions of what people ought to be able to do. (Mansfield, 1989, 27)

2.3.6 Under competency-based approaches, the redesign of curricula to make them more relevant to workplace requirements begins with an analysis and identification of workplace 'competencies' which are then organised into a set of 'competency standards' for an occupation. To ensure that standards are firmly based on the needs of employment, and not on assumed workplace needs, competency-based training reforms look to industry to take the lead in developing appropriate
standards, and involve persons in the workplace as widely as possible in determining and endorsing competency standards.

2.4 Outcomes as observable competencies

2.4.1 A third intention of competency-based approaches is to express outcomes as explicit, observable workplace performances. The intention is to express outcomes in the form of clear and precise 'competencies', so that (a) the needs of employment can be better communicated; (b) the goals of education and training programmes can be re-defined and communicated with greater precision; and (c) straightforward judgements can be made about the extent to which any particular competency has been attained:

Rather than designing curricula to meet assumed needs, representative occupational bodies identify 'occupational standards' which are clear and precise statements which describe what effective performance means in distinct occupational areas. The standards are then used to develop 'new' vocational qualifications and the assessment which underpins them; plus learning programmes which deliver the achievements identified in the standards.

(Mansfield, 1989, 26)

2.4.2 Explicitness and precision are recurring themes in discussions of competency-based outcomes. If outcomes can be expressed in precise, observable terms, it is argued, these can then be used to set clear goals for education and training programmes. For Gilbert Jessup, a leading advocate of CBET in the U.K., precision in the specification of competencies is the key to accurate communication of workplace needs:

For accurate communication of the outcomes of competence and attainment, a precision in the use of language in such statements will need to be established, approaching that of a science.

(Jessup, 1991, 134)

2.5 Assessment as judgements of competence

2.5.1 Since competencies are expressed in precise, observable terms, assessment becomes a process of establishing whether or not an individual is able to demonstrate each of the defined competencies. This reflects another fundamental intention of the CBET: to shift the basis of assessment from an emphasis on establishing a candidate's 'knowledge' to an emphasis on establishing that person's ability to competently perform specific workplace tasks and roles.
2.5.2 Dissatisfaction with traditional procedures for assessing vocational competence is reportedly widespread. In the United States, McGaghie (1991) attributes dissatisfaction with existing assessments of professional competence to the fact that assessments typically cover a narrow range of practice situations, are biased towards the assessment of acquired knowledge, and devote little attention to the direct assessment of practical skills. A widely-held view among advocates of CBET is that traditional forms of assessment, such as written tests and examinations, have demanded 'intellectual' abilities not necessarily relevant to carrying out workplace roles:

Having to read and interpret questions and then record their response, often demands intellectual and communication competences which go beyond those required to carry out the activity being assessed

(Jessup, 1991, 59)

and pay too little attention to the ability to perform in workplace settings:

In the past there has been too heavy a dependence on assessing knowledge. Given the definition of competence now adopted there will be a far greater emphasis on the collection of evidence of effective performance in work-related situations.

(Debling, 1989, 94)

2.5.3 Under CBET, assessment of performance ideally takes place in workplace settings, but if necessary, can be carried out in simulated workplace roles:

Performance must be demonstrated and assessed under conditions as close as possible to those under which it would normally be practised. The assessment of competence outside the workplace means recreating the essential characteristics of the employment functions through simulation.

(Jessup, 1991, 49, 53)

2.5.4 Assessment occurs in relation to specific competencies (also known as 'elements of competence') and is a process of (a) collecting evidence of performance--ideally in workplace contexts; and (b) making judgements about whether those performances satisfy pre-defined standards (ie., whether the performance criteria for an element of competence have been met and the candidate can be judged 'competent' in relation to that element):

In CBET, assessment is based on the idea of competent or not competent.

(Mitchell, 1989, 60)

Assessment poses the question of whether the statement of competence has been achieved or not... Assessment may be regarded as the process of collecting evidence and making judgements on whether performance criteria have been met. ... For the award of a National Vocational Qualification a candidate must have demonstrated that he or she can meet the performance criteria for each element of competence specified.

(Jessup, 1991, 18)
2.5.5 It is an intention of CBET that, where the performance of a candidate falls short of pre-specified criteria for an element of competence, the explicit nature of competency statements will allow the 'precise reasons' for failure to be explained to the candidate so that action can then be taken to ensure those criteria are met in the future.

2.6 Improved skills recognition

2.6.1 A fifth intention of competency-based education and training is to facilitate the recognition of competence independently of how that competence may have been acquired. The intention is to distinguish assessment and certification from courses and teaching and to remove restrictions on eligibility for assessment, thereby opening up access to assessment to those not involved in formal courses. The key to recognising competence however it may have been acquired is the notion of a set of precisely-specified competencies with their accompanying performance criteria, which together provide a framework of absolute standards:

By specifying learning objectives, in the form of outcome standards, independent of any course, programme or mode of learning, it becomes possible to create a framework of such standards, which can be adopted by any course or programme. The standards provide the unifying concept for all learning. A framework of standards provides the reference grid within which different forms of learning provision can be related. (Jessup, 1991, 12)

2.6.2 Competency standards are developed in part to improve opportunities for skills recognition, including the recognition of competencies developed by means other than formal education and training programmes (eg, workplace experience):

[under previous arrangements] many obviously competent people could not gain formal recognition of their competence because they had not come through the traditional route. (Jessup, 1989, 67)

2.6.3 The recognition of prior learning (RPL) is a central element of competency-based assessment for National Vocational Qualifications in the U.K.:

Unlike most traditional qualifications, the award of a National Vocational Qualification is based solely on the assessment of competence and is not concerned about how such competence is acquired. Learning from experience and presenting evidence of competence from such experience becomes a legitimate route to qualifications. (Jessup, 1991, 60)

2.6.4 In parallel with the introduction of competency-based approaches in the U.K., there is a clear intention in Australia that vocational assessment will in future be based
more on demonstrated performance of competence than on the presence or absence of paper qualifications:

The determinant of a credential in future will be the demonstration of competency (i.e., the ability to perform the activities within an occupation or function to the standard expected in employment) rather than where or how it has been undertaken. (Johnston, 1992, 4)

2.7 Improved articulation and credit transfer

2.7.1 Finally, competency-based education and training is seen as a way of improving opportunities for career progression and of providing greater flexibility in career pathways. The Australian Standards Framework and its U.K. equivalent the National Vocational Qualifications Framework are designed to facilitate progression and transfer between qualifications and within and between occupational areas, and coherence in education and training provision.

2.7.2 Because, under a competency-based approach, the outcomes of education and training are expressed in a common currency ('competencies'), CBET is advocated by some as a way of achieving an 'integrated provision for learning', breaking down traditional demarcations between education and training sectors. In Australia, CBET is seen as a way of bringing together the different cultures of post compulsory education, achieving an increasing convergence of general and vocational education, facilitating credit transfer arrangements between sectors, and recognising competencies acquired through workplace experience:

One of the benefits of a competency-based approach is that it increases opportunities for young people to move, without penalty, between education, training and employment. It provides the basic agreed standards of performance and consistent approaches to assessing and reporting on achievement that underpin this increased mobility. (Ruby, 1992, 48)

2.7.3 Recently, the concept of generic, employment-related competencies has been promoted as a way of further reducing cross-sectoral differences and encouraging all education and training sectors to focus on the kinds of competencies likely to be required in future workplaces. In the U.K., groups have been set up to develop separately-accredited Units of Competency in such areas as management and supervision, information technology, training and development, and foreign languages. The intention is that these Units will be incorporated alongside occupationally-specific units of competency in National Vocational Qualifications.
In Australia, generic employment-related competencies (referred to as 'key competencies') have been identified through the work of the Finn and Mayer committees. There is an expectation that the education system, through schools, will ensure the development of these key competencies and that trainees who leave school before the end of Year 12 and are involved in part-time work and part-time training will achieve the equivalent of Year 12 learning in the key competencies through the various pathway options of the Australian Vocational Certificate training system (Carmichael, 1992). The employment-related key competencies identified by the Finn and Mayer Committees are seen to be equally relevant to young people involved in general and vocational education and to young people already in the workforce.

ORIGINS AND EVOLUTION

Behavioural objectives movement

2.8.1 In seeking the origins of the competency-based movement, some writers point to parallels with the scientific management theories of Frederick W. Taylor in the early twentieth century. While some elements of CBET have clear parallels with Taylorist approaches, and may indeed have been influenced by Taylor's work, competency-based education is most directly descended from the behavioural objectives movement of the 1950s in the United States. Its origins are found in the thinking of educators such as Ralph Tyler, John Carroll and Benjamin Bloom.

2.8.2 The behavioural objectives movement sought to focus attention on the intended outcomes of learning programmes and, in particular, to encourage teachers to express their instructional objectives as changes in observable student behaviours. Proponents of the movement advocated the specification of objectives as 'directly observable behaviours which can be reliably recorded as either present or absent' (Bloom et al., 1971, 28). An important feature of the movement was the desire for reliability of observation and judgement. Writers of behavioural objectives were encouraged to state outcomes 'in terms which are operational, involving reliable observation, and allowing no leeway in interpretation'. In an attempt to achieve this degree of reliability, statements of educational objectives begin with verbs describing student behaviour such as 'states', 'lists', 'names', 'selects', 'recognises', matches', and 'calculates' (Bloom, et al., 1971, 34).
2.8.3 The behavioural objectives movement of the late 1950s and 1960s gave rise in the 1970s to four related developments:

- Mastery learning (Bloom, 1974)
- Criterion-referenced testing (Popham, 1978)
- Minimum competency testing (Jaeger, 1980)
- Competency-based education (Burke et al., 1975)

2.8.4 With their common origin in the behavioural objectives movement, most of these sibling movements shared a variety of features. These included:

- the organisation of learning into modules (related sets of behaviours/competencies);
- the design of assessment around lists of observable behaviours (a feature of all these movements and the cornerstone of 'criterion-referenced' testing);
- the concept of 'mastery' (In all these movements, the purpose of assessment is to provide evidence in relation to each objective/competency so that a decision can be made about whether that objective or competency has been demonstrated/achieved/mastered).

2.9 U.S.A. in the 1970s

2.9.1 Competency-based education began in the United States in 1967 when the Office of Education requested proposals for model primary teacher education programmes. Under these programmes, teacher certification was to be based on established competence in relation to detailed educational specifications (Houston, 1985). At a time when instructional programmes in schools were being influenced by the growing behavioural objectives movement and 'for many it easily and simplistically followed that there must be a connection between teacher competence and pupil learning' (Swanchek and Campbell, 1981), the model 'competency-based' teacher education programmes introduced at this time were built around sets of observable teacher 'competencies'.

2.9.2 The principles underlying competency-based teacher education programmes in the United States in the 1970s are summarised by Houston (1985):
programme requirements were derived from, and based on, the practice of
effective teachers;
programme requirements were stated as competencies;
instruction and assessment were specifically related to competencies.

Rather than systematically studying disciplines such as psychology and mathematics,
competency-based teacher education was based on, and organised around, conceptualisations
of effective teacher practice... objectives were based on the role requirements of teachers. ...
By basing programme requirements and standards on the behaviour of effective teachers,
teacher educators could most closely attune programmes to valid bases.

(Houston, 1985, 898-901)

2.9.3 CBET flourished in the United States in the 1970s. In 1971, the first bibliography
on competency-based teacher education listed 22 items. Within five years, the
number had grown to over 6,000. And the movement spread from its origin in
teacher education to other professional education programmes. In American
schools, CBET took the form of the 'minimum competency' movement--an attempt
to specify, in competency terms, the standards that students would be required to
satisfy for the award of high school diplomas. Towards the end of the decade
Spady (1977, 9) wrote of competency-based education: 'This uncoordinated
movement is rapidly transforming into a bandwagon that promises to be the Great
American Educational Fad of the 1970s'.

2.9.4 In the context of current Australian developments, it is interesting to note that
competency-based education had its origins in U.S. higher education courses. It
commenced in teacher education, but was extended during the 1970s to
professional programmes in dentistry, medicine, nursing, engineering, law and
school administration. In the United States in the 1970s CBET was characterised
by 'the precise specification of competences or behaviours to be learned and the
modularisation of instruction'. The principles underlying early American
implementations of CBET were summarised by Burke et al., (1975):

* The instructional programme is derived from and linked to specified
  competences.
* Instruction which supports competency development is organised into
  units of manageable size.
* Instruction is organised and implemented so as to accommodate learner
  style, sequence preference, pacing, and perceived needs.
* Learner progress is determined by demonstrated competence.

Bowden Masters Report
* The extent of a learner's progress is made known to him/her throughout the programme.

2.9.5 This early work established key principles of competency-based assessment, particularly the notions of evidence collection and the use of performance criteria to facilitate competent/not competent judgements in relation to each element of competency:

Competency statements include a criterion level so that assessment determines whether or not the learner has demonstrated a competency to the degree previously established... Students are expected to meet at least the minimum standards for each and every competency required in the programme... Competency-based teacher education relates achievement to preset objectives, and a grading system includes lists of such objectives with a place to mark whether each has been passed or not. (Houston, 1985, 899)

2.9.6 Despite the enthusiasm with which competency-based approaches to teacher education were promoted and adopted in the 1970s, the movement was surrounded by ongoing controversy and was of diminishing importance in the preparation of teachers through the 1980s. By the middle of that decade, commentators were describing the competency-based teacher education movement in the past tense:

Highly visible and hotly debated in the decade of the 1970s, competency-based teacher education reflected general cultural trends in the United States as well as specific educational goals. The movement was spawned in the late 1960s, supported by grants from federal, private, and state sources, lauded as the most effective process to prepare teachers, damned as a mechanistic approach, and employed nominally for several years by over 400 institutions. (Houston, 1985, 898)

2.9.7 The influence of the competency-based movement on U.S. higher education institutions appears to have been mixed. There is no doubt that the movement had a significant and possibly lasting influence in some institutions. Financial incentives were a factor in the implementation of CBET in many universities and colleges, but the advantages of competency-based approaches appear not to have been appreciated by all:

The reaction of higher education institutions to the challenges posed by CBET was, of course, varied. But with substantial federal and state funding available for research and development (and earmarked for CBET) many university and college departments embraced the concept and set about the redesign of programmes... Not every institution was ready and willing to adopt the whole system; indeed many felt that the major aims of CBET could be met without serious disturbance to existing schemes. Consequently, there has been a great deal of adaptation of the concept, often to the despair of the more committed developers. (Tuxworth, 1989, 14)

2.9.8 Among the criticisms of competency-based approaches were concerns over the appropriateness of attempting to characterise occupational competence by dividing
and sub-dividing an occupation into a number of stand-alone, observable 'competencies':

The specification of competencies was criticised because such lists atomised the teaching process. Teachers do not teach using independent competencies, but in context and using in an integrated fashion a number of skills and knowledge. The value of dissecting general competence into a number of specific and autonomous objectives was questioned. Further, limiting objectives to those leading to observable action or results appeared to stifle the development of professionals whose personal characteristics might lead to a wide range of successful teaching practices. (Houston, 1985, 902)

2.9.9 Indeed, there appears to be general agreement that the demise of CBET in the U.S.A. was a direct result of its attempt to use job function analysis to analyse occupations into large numbers of precisely-specified workplace behaviours:

The job function analysis approach is often based primarily on motor skills analysis... Variations of this method exist, many of which fall under the rubric of the behavioural objectives approach. This approach, sometimes carried to extremes, results in taxonomies of hundreds, sometimes thousands, of skills connected with particular kinds of jobs... This preoccupation with specificity, clarity and precision of behavioural objectives has left many researchers with an operational paradigm for defining and measuring professional competencies which is intuitively and theoretically oversimplified and invalid. (Pottinger, 1979, 31-2)

2.9.10 The competency-based movement has similarly had a relatively small impact on the professions and professional registration arrangements in the United States. The exception may be found in some health-related professions:

The impact of CBET on the professions in the USA has been variable. With some risk of indulging in dangerous generalisations it would be safe to say that professional and occupational licensing has been affected in only a superficial way. The tendency is still to base occupational licensing on tests of knowledge plus some evidence of experience in practice. (Tuxworth, 1989, 20)

2.10 U.K. in the 1980s

2.10.1 In the U.K. there was patchy and desultory interest in competency-based education and training until the early 1980s (Tuxworth, 1989). In recent years, however, CBET has been promoted as part of the British government's programme to reform the U.K. system of vocational qualifications. Among the principles for reform enunciated in a 1988 White Paper Employment for the 1990s, were expectations that recognised standards of competence, relevant to employment, would be drawn up by 'industry-led organisations covering every sector and occupational group, and validated nationally'. The National Council for Vocational Qualifications (NCVQ)
was established to design and implement the new competency-based National Vocational Qualifications (NVQ) Framework under which qualifications will be awarded for competent performance in work activities, assessed where possible in the workplace (Burke, 1989).

2.10.2 The *competency standards* being developed for National Vocational Qualifications and training in the U.K. are being set by industry through industry lead bodies formally recognised and set up by the government's Training Agency which funds or contributes to the funding of standards development, provides advice, and steers projects to varying degrees.

2.10.3 There is a widely-expressed belief in both the recent British and Australian CBET literature that, despite the long history of competency-based education and training in the United States, the conceptual base of the movement has been modified and developed in recent work in the U.K.. In particular, there is a widespread recognition that approaches in the U.S.A. in the 1970s and early work in England in the 1980s were based on a conception of competence that was too narrow and task-oriented, with the result that it led to unwieldy lists of performance-based competencies (Mitchell, 1989). In the U.K., the Training Agency's response to these concerns was to recommend the adoption of *functional analysis* as a method to develop competency standards. Functional analysis is also recommended for bodies developing competency standards in Australia.

2.10.4 Functional analysis is a method by which employment functions are analysed:

First the key purpose of the overall area of competence is stated; this is then broken down into the primary functions which need to be carried out in order for the key purposes to be achieved. The primary functions are further divided into sub-functions, and they in turn are further sub-divided, and so on.  

Functional analysis of the occupation/profession and its necessary duties and tasks usually yields an extensive list of competence elements grouped under major duty areas or functions. Performance criteria are then developed to indicate minimum or normative competence levels.  

(Tuxworth, 1989, 17)

2.10.5 The result of a functional analysis is a number of Units of Competence each divided into a set of Elements of Competence with their associated Performance Criteria to be used in judging whether an individual is 'competent' in relation to that particular element (see Figure 2.1).
2.10.6 **Units of competence.** A Unit of Competence is intended to describe an employment function and is made up of a coherent group of elements which together are required to perform that function. Competency standards being developed for the National Vocational Qualifications in the U.K. tend to contain between five and twenty units of competence.

2.10.7 Units have a particular significance because they are independently recognised and certificated. The intention in the U.K. is that they will function as 'mini qualifications'. Because units are based on employment functions rather than the specific requirements of occupations or jobs, it is intended that they will have a currency beyond particular jobs or occupations. In this way, a unit might be common to different qualifications or programmes with the possibility of credit transfer between qualifications and occupations. Unit accreditation and credit transfer might thus reduce unnecessary duplication and may provide short-term targets and have a positive motivating effect on learners.
2.10.8 Elements of competence. Units of competence usually consist of two, three or four 'elements'. A characteristic of an element in the U.K. is that it is separately assessed:

Within National Vocational Qualifications each element of competence is assessed. This would make it possible to award credit for the achievement of elements, but this option was not chosen. It was considered that elements would be too small for separate credit and would provide too much detailed information for users to handle. (Jessup, 1991, 68)

2.10.9 Performance criteria. Each element of competence identifies an area of desired achievement, but does not, by itself, specify a standard of satisfactory performance in that area. To differentiate between satisfactory and unsatisfactory performance in an area of achievement, what is required are performance criteria. (Debling, 1989).

2.10.10 Reminiscent of Bloom's (1971) recommendation that behavioural objectives should be 'stated in terms which are operational, involving reliable observation, and allowing no leeway in interpretation', Jessup argues that

elements and performance criteria should be stated with sufficient precision to allow unambiguous interpretation by different users. (Jessup, 1991, 17)

2.10.11 According to Debling (1989), it would not be unusual in work under way in the U.K. for a statement of competence to consist of five Units of Competence and about 200 Performance Criteria.

2.10.12 Range statements. Under CBET as it is being promoted in the U.K., assessment is a process of collecting evidence about an individual's achievement of each element of competence and making a judgement of the form competent/not competent. The performance criteria are intended to define the standard against which competent/not competence judgements are to be made. However, attempts to apply this approach to assessment have shown that elements of competence and their associated performance criteria are usually open to a variety of different interpretations. In an attempt to reduce ambiguity of meaning, U.K. competency statements now also include 'Range Statements' designed to indicate the range of situations to which elements of competence and their associated performance criteria are intended to apply:

Range statements indicate to assessors (and of course trainers and trainees), the range of application to which an element is expected to apply, and provide the basis to judge what demonstrations of competence, knowledge and understanding are required to attest to competence... Without range statements, there is a danger that the demonstration of an
An example of part of a statement of competence for a health care profession is shown in Figure 2.2. This example is provided by Jessup (1991, p.38) to illustrate how 'units' are to be made up of assessable 'elements'; acceptable standards of achievement in relation to each element are to be specified through 'performance indicators'; and 'range statements' are to be used to provide a guide to the range of contexts in which a 'competent' person should be able to demonstrate the performance criteria. Other examples from work under way in Australia are provided later in this chapter.

Figure 2.2: Section of Health Care Competency Statement

Units, elements, performance criteria, and range indicators together constitute the 'statement of competence' for an occupational area. The statement spells out what candidates are required to be able to do for the award of a national vocational qualification and also sets clear goals for education and training programmes.
2.11 Germany in the 1980s

2.11.1 Developments towards competency-based education and training in Australia in the late 1980s / early 1990s were also influenced by developments in vocational training and skills recognition in other European countries, most notably the former Federal Republic of Germany. In 1987, the Australian Minister for Industrial Relations appointed a Tripartite Mission to study and report on the level and scope of trade skills in the metal and electrical trades in a number of European countries. The Mission was also requested to report on trends and developments in skills training in the countries it visited. In its report, the Mission made the following observation of vocational training in the five European countries it visited:

Training is competency-based and determined by federal vocational training legislation in all countries. The legislation sets out, either in the body of the Act or in Regulations, the levels of competency to be achieved and establishes the standards by which competency is to be tested at a final examination. It does not prescribe the way in which, nor the time within which, training is to be delivered. (Australian Tripartite Mission, 1987, 24)

2.11.2 The Mission noted that in all countries visited, adults who had obtained relevant training or experience, other than through the normal Training/Apprenticeship systems, were able to obtain skilled worker qualifications by undertaking normal skilled worker examinations. Vocational training legislation in all countries facilitated this because it prescribed only the standards of competency to be attained by skilled workers and the levels of competency to be tested at the final examination. In these countries, the focus on demonstrated competence rather than time served provided opportunities for improved recognition of workplace competencies.

2.11.3 The systems of vocational training studied in these five countries placed considerable emphasis on competency testing as the basis of vocational assessment:

Final examinations leading to skilled worker qualifications, in all countries, are structured to determine the competency levels achieved; they are heavily oriented to practical testing, usually over a period of 20 hours or more, with examinations in theory over half to one day. In some countries (e.g., the Netherlands), satisfactory completion of an on-the-job task book is required as a pre-requisite to entry to the final examination and there were instances noted where the final examination included oral testing. (Australian Tripartite Mission, 1987, 34)

2.11.4 The members of the Mission noted a number of recurring features of training provision in the countries they visited. In particular,
(a) there was a very close integration between vocational training and the general education system;

(b) the training of skilled workers was based on training to defined standards of competency;

(c) an extensive final competency test, to defined national standards, had to be successfully completed before skilled workers were able to obtain relevant formal qualifications;

(d) national competency standards and objectives were defined and established by Federal Vocational Training legislation even where States were responsible for supervision of the delivery of training and/or provided general theoretical training through technical schools.

2.11.5 Upon its return to Australia, the Tripartite Mission included among its major recommendations that:

consideration be given to, either through national vocational training legislation or other appropriate mechanisms, the establishment of national competency standards for all skilled occupations and the introduction of nationally consistent final competency testing in such occupations. (Australian Tripartite Mission, 1987, 37)

2.11.6 In 1990 the Commonwealth/State Training Advisory Committee (COSTAC) established an overseas mission to study developments in Vocational Education and Training in six countries in Europe, North America and South-East Asia. The observations of the COSTAC Mission—particularly in relation to the Federal Republic of Germany—also had an important role in the development of competency-based approaches to education and training in Australia.

2.11.7 The Mission noted that German arrangements for vocational education and training were directed at ensuring appropriate skill standards (COSTAC, 1990b, 75). This was achieved through a competency-based system of training which involved a balance of national prescription of basic standards and local delivery and supervision:

Germany is able to balance national consistency in standards with flexibility and adaptability to local conditions. This approach assists the recognition of qualifications across the nation and the general mobility of the work force. (COSTAC, 1990b, 75)

2.11.8 The Mission found that, in Germany, national training regulations were prescribed for all training occupations. Each national training regulation set down:

(a) the title of the training occupation;

(b) the length of the training period;
(c) the knowledge and skills to be acquired;
(d) a suggested training schedule or plan for the required knowledge and skills; and
(e) examination requirements.

2.11.9 The mission noted that "as the required knowledge and skills for each training occupation are specified, this is a competency system of training akin to current Australian developments towards competency-based training". While the training regulations set national standards, the German system provided flexibility in the delivery of training at the local level. Each industry was able to draw up its own training plans on the basis of the national plan specified in the regulations.

2.11.10 The COSTAC Mission concluded that, in Germany, "the systematic approach to specifying the required knowledge and skills and examination requirements for an occupation contributes significantly to the general quality of the system" (COSTAC, 1990b, 76). The Mission noted that competencies were increasingly being defined more broadly than the ability to perform specific workplace tasks, and that rigorous examinations were used to establish candidates' levels of competence:

With the trend to broadening training, competencies are increasingly related not to specified single tasks, but to integration of tasks. Increasingly, competencies are required to be demonstrated in a work situation or in a simulated work situation. In this way the traditional dichotomy between theory and practice and between training and work is being broken down. The requirements of a competency-based system affect the approach to examinations which are rigorous in order to ensure that the required skills and competencies have been acquired. Examinations in some cases extend over several days. (COSTAC, 1990b, 76)

2.11.11 A feature of the nationally prescribed training standards in Germany is the detail with which occupational knowledge and skill requirements are specified, and the construction of assessment procedures linked to those requirements. These features reflect general intentions of competency-based education and training to provide greater specificity and clarity of outcomes, objectivity in assessment, and comparability across training providers:

As the syllabus for each training occupation has been specified on a competency basis in the training regulations, assessment is able to be directed at testing the specific knowledge and skill set out in the relevant regulation.

Depending on the particular occupation, examinations provide for the testing of practical and/or theoretical knowledge and skills. Practical examinations may require samples of the trainee's work or may require practical tasks to be performed in the examination centre.
As the training regulations set out examination requirements in some detail, there is a high degree of objectivity in the examination procedures. The regulations usually contain specific rating criteria for assessment so that the basis that each trainee is being assessed on is clear...

Because the examinations are based on nationally prescribed skill standards, the certificates issued by the Chambers have general recognition and are valid throughout the Federal Republic. (COSTAC, 1990b, 77)

2.12 Australia in the 1990s

2.12.1 The stated imperatives for the introduction of competency-based approaches to education and training in Australia in the 1990s are similar, if not identical, to reasons given for the promotion of CBET in many other countries. There is concern about the quality of training outcomes and a belief that standards of vocational education and training in Australia must be improved. There is a determination on the part of government to achieve greater consistency and cohesion in the training system while allowing enhanced flexibility and choice in modes of delivery. These concerns were voiced in a number of reports in the late 1980s on the status of Australia's vocational education and training arrangements:

Each of the reports produced for ministers' consideration expressed the view that a standards system based on competency, with its associated training and delivery arrangements, would provide the framework for the improvements being sought. Ministers responsible for vocational education and training, at a special ministerial conference in 1989, decided in principle to move to a competency-based training system. The meeting also agreed to set up the National Training Board to facilitate and recognise competency standards, and a national system of overseas skill recognition to replace the previous system based on qualifications.

(Johnston, 1992, 2-3)

2.12.2 As in the U.K., the pressure for competency-based standards derives in part from industrial requirements for educational institutions to articulate more directly with the needs of industry. The availability of competency-based standards is seen as a way of providing greater flexibility in career pathways, as well as a basis for quality assurance across industry and training sectors.

2.12.3 Competency-based education and training has thus been embraced as an integral part of the Commonwealth government's training reform agenda:

'a process of fundamental reform to make the vocational education and training system more responsive to industry needs.... The term 'competency standards' describes the standards to be developed in Australia by industry and occupations and to be reflected in education and training provision'

(DEET, 1992).
2.12.4 The principles of CBET in Australia are essentially the same as those developed in the United States in the 1970s and adopted in the U.K. in the 1980s. The focus is on education and training outcomes, and particularly on skills required in the workplace. These 'competencies' are carefully defined so that judgements can be made about whether or not an individual holds particular skills. With improved skills recognition, opportunities are opened up for better articulation between education, training and work, and credit transfer arrangements become possible:

More learning effort should focus on the workplace; we should be more open to different ways, times and places of learning; and we should be more systematic about assessing and recognising what has been learned. A little more concretely: the skills (or 'competencies') required in workplaces and working lives should be carefully defined to provide 'benchmarks' against which individuals can be formally assessed and recorded as holding skills, these to count for admission and/or credit toward a qualification, and for improved pay, status or opportunities in the workplace and the labour market. (NBEET, 1991b, vii)

2.12.5 The National Training Board (NTB) was established to assist industry to develop and then endorse statements of competence (referred to in Australia as 'competency standards') for occupations and classifications in industry, or for enterprise awards or agreements. Following the model of the U.K. National Vocational Qualifications Framework, the NTB has developed an Australian Standards Framework (Figure 2.3) that defines a series of occupational 'levels' which:

- enable comparisons between standards in various industries and sectors;
- provide the basis for credit transfer and recognition;
- provide an impartial benchmark for the alignment of credentials and other forms of recognition. (NTB Network, No. 3, 1991, 6-7)

2.12.6 However, in contrast with the U.K. model, the levels of the Australian Standards Framework do not have a one to one correspondence with the qualification levels.

2.12.7 The format that has been used in Australia for occupational competency standards has similarities with the format developed in the U.K. (Figure 2.1), based on the subdivision of occupational functions into units, elements and associated performance criteria and range statements.

The development of competency standards in terms of units and elements and the format in which these are to be expressed has been set by the National Training Board. Use of this format is required also by NOOSR for the projects it funds: this approach enables comparison of standards across industries or occupations but its efficacy for enabling application to the higher education sector is untested. (DEET, 1992, 4)
2.12.8 Some minor changes in terminology in Australia are summarised in Figure 2.4.

<table>
<thead>
<tr>
<th>UK: 1980s¹</th>
<th>Australia: 1990s²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement of Competence</td>
<td>Competency Standards</td>
</tr>
<tr>
<td>Unit of Competence</td>
<td>Unit of Competency</td>
</tr>
<tr>
<td>Element of Competence</td>
<td>Element of Competency</td>
</tr>
<tr>
<td>Performance Criteria</td>
<td>Performance Criteria</td>
</tr>
<tr>
<td>Range Statements</td>
<td>Range Indicator</td>
</tr>
</tbody>
</table>


Figure 2.4: Competency terminologies
2.12.9 Assessment in relation to competency standards has tended to follow familiar and well-established CBET principles:

(a) Assessment is explicitly and unequivocally based on a judgement as to whether individuals have achieved the competencies or not. (b) Assessment is seen as a Go/No-Go question: one is either 'competent' or 'not competent'. (c) Providing the competency statements and performance criteria are sufficiently precise, assessment is a self-evident process. (d) Final reporting is limited to a 'count' of competencies achieved.

(Kinsman, 1992, 32)

2.12.10 However, a recent publication by the NTB, National Competencies Standards: Policy and Guidelines (Second Edition) tries to address that issue by adding a further category of 'evidence guide':

Where direct assessment of all aspects of competency is not feasible, it is important to define in assessment methods the extent of required sampling of competency. Supplementary evidence, through the assessment of knowledge and understanding, could at times be indicated in an evidence guide.

(National Training Board, 1992, 33)

2.12.11 All TAFE authorities in Australia are now committed to introducing a Competency-based Training System for all recognised courses, and calls are being made for the development of competency standards across a wide range of occupational classifications:

Competency standards should be adopted nationally for each profession and para profession in Australia where entry requirements apply; These national competency standards should be recognised and applied by higher education institutions and TAFE authorities, registration and licensing agencies, professional association, employers, and industrial arbitration authorities.

(NACSR, 1991, 16)

2.12.12 At the level of professions, the development of national competency standards is being promoted by NOOSR, established in 1989 to coordinate and facilitate the implementation of the Commonwealth Government's Migrant Skills Reform Strategy. NOOSR's initial responsibility was to improve the skills recognition process for overseas-trained professionals by encouraging professions to develop and use competency standards rather than paper qualifications as the basis of assessment. It soon became evident, however, that those standards could equally be applied to persons trained in Australian higher education institutions. A number of professions saw competency-based standards as a way of providing more focus for continuing professional education and identifying areas requiring attention by education providers (Johnston, 1992, 5-7).
2.12.13 Priority for NOOSR funding assistance is directed to professions currently regulated in some or all States, but other self-regulating professions may also be assisted. NOOSR's support for regulated professions has been increased following requirements of the Special Premiers' Conference that national competency standards for all regulated occupations be in place by the end of 1992. At the present time, NOOSR is assisting in the development of national competency standards in accounting, agricultural science, architecture, chiropractic/osteopathy, dietetics, engineering, medical science, medical radiation science, nursing, occupational therapy, optometry, pharmacy, physiotherapy, podiatry, psychology, social welfare, speech/hearing therapy, teaching (partial funding support only) and veterinary science.

2.12.14 NOOSR facilitates agreements between interested parties within a profession, and provides advice and funding support for the development of competency standards. NOOSR's funding support is required by its charter to be directed at professional entry levels. NOOSR liaises with the National Training Board on policy and operational matters, but does not have the authority to endorse the standards developed by professions, in the way the NTB endorses standards developed by industries.

2.12.15 Figure 2.5 is based on recent work by the Australian Institute of Agricultural Science to develop competency standards in Agricultural Science.

2.12.16 Since compilation of this Figure (and the following three Figures), some changes have been made by the relevant project teams. However, the Figures as presented here provide an illustration of the outcomes of project work in recent years. In Agricultural Science, eight Units of Competency have been defined and, for each Unit, between two and seven Elements of Competency have been identified. The first six Units define 'core' competencies in Agricultural Science. The last two define 'specific' competencies in science and business/economics.

2.12.17 These eight Units and 34 Elements are accompanied by performance criteria which spell out the level of performance expected of agricultural scientists at the beginning of induction into the workforce and professional practice. The performance criteria for Element 2 of the Unit 'Scientific Expertise' (providing agricultural advice) are shown in Figure 2.6.
## Units and Elements of Competency: Agricultural Science

### Units
- Management
- Communication
- Professional Practice Values
- Knowledge
- Education and Training
- Problem and Opportunity Analysis
- Scientific Expertise
- Economic or Business Expertise

### Elements
- **Management**
  - Plans projects and work programs
  - Organises resources for projects and work programs
  - Manages farming operations
  - Complies with legal and regulatory requirements

- **Communication**
  - Communicates to a variety of audiences
  - Prepares and presents talks and papers
  - Uses various media for communication on agricultural extension matters
  - Uses electronic communication tools

- **Professional Practice Values**
  - Observes social and ethical responsibility in professional practice
  - Pursues continuing professional development
  - Assumes personal responsibility for actions
  - Fosters rural social sustainability

- **Knowledge**
  - Applies theoretical knowledge in an area of expertise
  - Pursues continuing extension of knowledge
  - Accesses knowledge and expertise

- **Education and Training**
  - Formulates education and training plans for achievement of agreed goals
  - Conducts education and training programs for achievement of agreed goals

- **Problem and Opportunity Analysis**
  - Recognises a problem or opportunity
  - Defines the problem or opportunity
  - Explores options for solution of the problem or developing the opportunity
  - Tests or evaluates solutions or development strategies
  - Verifies solutions or development strategies

- **Scientific Expertise**
  - Conducts and leads scientific work
  - Advises on agricultural operations
  - Investigates farm problems and systems
  - Researches agricultural problems and developments
  - Operates and manages specialised equipment

- **Economic or Business Expertise**
  - Conducts and leads work in agricultural business and economics
  - Investigates and researches economic and business issues and opportunities
  - Develops and makes recommendations on economic and business policies
  - Carries out business appraisal activities in agriculture
  - Carries out business or economic planning and appraisal of farms
  - Carries out marketing activities in agriculture and agribusiness
  - Applies computer science knowledge and skills

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Figure 2.5 Units and Elements of Competency: Agricultural Science
**ELEMENT:** Provides an agricultural advisory or extension service.

**PERFORMANCE CRITERIA**

--- Assists in providing integrated whole farm advice to the farming community to improve agricultural productivity, efficiency and conservation.

--- Advises farmers and other relevant bodies on aspects of agriculture including crop, livestock and pasture production, soil and water conservation, irrigation and drainage and farm management.

--- Provides advice on the basis of a good understanding of the techniques of information and technology transfer.

--- Advises farmers by one-to-one farm visits, telephone or at the office.

--- Assists in organising and conducting field days, group discussions, seminars, lectures and demonstrations.

--- **Figure 2.6:** An element of competency and its associated performance criteria - Agricultural Science

2.12.18 As noted earlier, performance criteria are developed as descriptions of 'what a competent professional would do in terms of observable results and/or behaviour in the workplace' (Heywood, *et al.*, 1992, 35) and are intended for use in making judgements about whether an individual is competent or not competent in relation to the Element.

2.12.19 As well as providing performance criteria for entry-level agricultural scientists, the Agricultural Science competency standards also provide performance criteria on each of the 34 Elements for 'Level 2' and 'Level 3' agricultural scientists.

2.12.20 Further examples of Australian work to define Units of Competency and Elements of Competency for professions are shown in Figures 2.7 and 2.8. National competency standards for professional engineers are being developed by the Institution of Engineers, Australia. The eleven Units of Competency being used as the basis of the engineering standards are shown in Figure 2.7 together with the elements for two of these Units.
UNITs ELEMENTS (11 of 52 shown)

Ethics and Principles
- Follows an accepted code of ethics
- Recognises and understands environmental principles
- Assumes professional responsibility for own actions
- Takes account of community values and attitudes
- Takes account of and promotes business principles

Practice Skills
- Clarifies and defines engineering design requirements
- Prepares concept proposal to meet requirements
- Performs or arranges design of selected proposal
- Performs design evaluation
- Prepares supporting documentation
- Maintains integrity of design identification documentation

Planning and Design
- Management
- Communication
- Research and Development
- Materials or Components
- Education and Training
- Manufacturing or Production
- Project Implementation
- Asset Management

Figure 2.7 Units and some Elements of Competency: Engineering
Figure 2.8 Units and some Elements of Competency: Veterinary Science
2.12.21 Figure 2.8 shows the eight Units of Competency identified for the Australian Veterinary Profession.\(^1\) A selection of the 36 Elements of Competency is reproduced.

2.13 Re-conceptualising competency-based education

2.13.1 Current work to develop competency-based standards for professions in Australia differs from earlier competency-based education and training programs in a number of important respects. Because the history of CBET, particularly competency-based teacher education, is reasonably well-known in Australia, it is important that these differences are understood. As the Australian work evolves, it is also becoming clear that, despite superficial similarities, the approaches being promoted within the professions in Australia are different in important ways from recent work in the U.K.

2.13.2 The approach being used to develop competency standards by professions in Australia is outlined in a series of reports commissioned by the National Office of Overseas Skills Recognition. These are:

(a) Establishing Competency-Based Standards in the Professions (Gonczi, Hager & Oliver, 1990);

(b) Competency-Based Assessment in the Professions (Masters & McCurry, 1990);

(c) A Guide to the Development of Competency Standards for the Professions (Heywood, Gonczi & Hager, 1992); and

(d) A Guide to the Development of Competency-Based Assessment Strategies for the Professions (Gonczi, Hager & Athanasou, 1992).

2.13.3 The first two papers outline some basic principles of competency-based standards and assessment. The *Guides* provide practical assistance to professions developing standards and accompanying assessment strategies.

2.13.4 A first difference between the approach described in these reports and much earlier work is the incorporation of attributes into competency standards. Rather than

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\(^1\) The Units and Elements of Competency in Figures 2.5, 2.7 and 2.8 are based on work in progress during 1992 and are taken from the most recent draft statements available to the authors at the time of writing.
being a list of observable workplace tasks and behaviours, competencies are being re-defined as the ability to draw on underlying attributes (knowledge, skills and attitudes) and to integrate and apply these to realistic professional tasks. The first of the four NOOSR reports developed this definition of competencies and contrasted it with approaches which focus on observable workplace tasks only (without regard to attributes required to perform those tasks), and approaches based on the specification of assumed attributes only (in isolation from their application in the workplace):

Task analysis
Analysing professional work in terms of roles, (or, alternatively, domains), and then tasks and subtasks. This approach focuses on the performance aspect of our definition of a competent professional.

Attribute analysis
Analysis of the knowledge, skills and attitudes required by the individual professional. This approach focuses on the attributes aspect of our definition of a competent professional.

Integration of attributes and performance
Analysis of professional knowledge, skills and attitudes in the context of the performance of realistic professional tasks. This approach integrates both attributes and performance into a single framework.

(Gonczi, Hager & Oliver, 1990, 14)

2.13.5 Gonczi, Hager & Oliver (1990) point out that the analysis of professional work into roles, tasks and subtasks results in impractically long lists of specific tasks that are difficult to assess. Attribute analysis, on the other hand, runs the risk of attempting to spell out the knowledge, skills and attitudes that underlie professional competence without considering what it is that professionals actually do in the workplace. The third, integrated, approach begins by attempting to identify those areas of professional practice in which it is essential to demonstrate at least minimum competence and to identify the knowledge, skills and attitudes required to perform complex professional activities.

2.13.6 A second difference in current Australian work is an emphasis on more holistic approaches to thinking about and assessing professional competence. This can be contrasted with the narrow, 'checklist' approach being promoted in some other places where the intention is to make a yes/no judgement in relation to each item on a list of Elements of Competence (e.g., Jessup, 1991). The second NOOSR report builds on to the approach taken in the first report and argues that the conceptualisation of professional competence requires a holistic approach in which competence is seen as the ability to draw on and to integrate a variety of knowledge and skills to address realistic workplace problems. To be consistent with this
definition of competent professional practice, assessments of competence should be based not on checklists of observable workplace behaviours, but on holistic judgements of an individual's competence in particular areas of professional practice. The evidence on which holistic judgements are based can be obtained in a variety of ways, including observations in the workplace, performances on simulated workplace tasks, and tests of knowledge and skill.
CHAPTER THREE

ISSUES FOR CONSIDERATION

3.1 Which model of competence?

3.1.1 We turn now to a consideration of some general issues posed by competency-based approaches to education and training, particularly for education programmes, curricula and assessment.

3.1.2 As noted earlier, competency-based education is an evolving concept that has been operationalised in varying ways over the past two decades. In the U.K., where the model now being adopted by the Australian National Training Board and National Office of Overseas Skills Recognition was developed, the leading proponent of CBET notes that 'a continuing debate exists on an appropriate concept of competence' (Jessup, 1989). As the preceding review makes clear, however, differences among CBET approaches have been primarily differences of interpretation and implementation, not differences of principle or intention which have remained more or less unchanged since competency-based education was first introduced.

3.1.3 Early attempts to apply competency-based principles to education and training programmes were hindered by imprecise definitions and inadequate guidelines for implementation. This was a particular problem for institutions of higher education in the United States in the 1970s:

One of the continuing problems faced by institutions attempting to re-do their teacher education programmes in the direction of more competency-based activities was the general lack of definition and criteria for just what constitutes a competency-based teacher education programme.

(Burke, et al., 1975, i)

3.1.4 The National Council on Vocational Qualifications in the U.K. and the National Training Board and National Office of Overseas Skills Recognition in Australia have adopted a particular implementation of competency-based principles, based on the notions of units, elements, performance criteria, and range indicators. In this way, an attempt has been made to establish common methods and terminology and to provide a degree of comparability across occupations. But the question remains
of how appropriate this model is in general, and whether it is capable of providing adequate characterisations of competence in particular occupations and professions. Tuxworth (1989) argues that there is only limited use in universal definitions of competence and that it may be preferable for different occupations to develop their own conceptions and definitions.

3.2 Are competencies being defined too narrowly?

3.2.1 Beginning with the earliest attempts to implement CBET principles and continuing to the present day, there has been an ongoing concern over the extent to which competency-based methods encourage narrow specifications of occupational competence. Early work in the United States was considered to have inappropriately 'atomised' occupations into detailed checklists of tasks and skills. The same criticism was levelled at early work to develop vocational competency standards in England in the 1980s where developers of competency standards frequently 'pursued a reductionist approach and literally analysed competence to bits' (Tuxworth, 1989, 17).

3.2.2 The approach adopted in this early work is now commonly referred to as 'task-based' because of its focus on specific jobs and tasks rather than on broadly-defined occupations and functions.

3.2.3 The training infrastructure is based, in the main, on the narrow view of competence and standards... Lead bodies with a narrow view develop standards which are descriptions of tasks and skills with an emphasis on procedures...

As the level of complexity and responsibility of the occupational role increases, the inadequacy of a task and task analysis approach becomes clear... This is not to suggest that task analysis is appropriate for 'lower level' work roles however. There are fundamental reasons why a task approach is not adequate for any standards analysis.

(Mansfield, 1989, 26-32)

3.2.4 The failure of the competency-based movement of the 1970s is now widely attributed to the fact that it was based on too narrow a conception of competence (Debling, 1989) and more recent work has attempted to broaden the definition of competence by focusing on occupational functions and roles rather than narrowly-specified tasks:

Bowden Masters Report
The dangers of a narrow specification of competence or outcome are now well recognised. The new competence-based movement is attempting to go back to fundamentals and look at what is really required for successful performance or the achievement of successful outcomes in any field of learning. ... There would appear to be no intrinsic reason why the specification of outcomes should be narrow. (Jessup, 1991, 129)

3.2.5 Work in Australia is also reported to have rejected task-based approaches to defining competence:

Definitions of competence and competency-based standards adopted in Australia have all rejected the narrow task based approach used in the 1960s in favour of a broader definition which encompasses knowledge, skills, and other criteria such as understanding, transferability and attitudes. (Johnston, 1992, 9)

3.2.6 Bodies developing competency standards in Australia are encouraged to begin with a consideration of the general purpose and function of an occupation rather than the tasks and procedures required of specific 'jobs' (eg., in particular companies). A person who is 'competent' in an occupation or profession is then considered to have a repertoire of skills, knowledge and understandings that can be applied in a range of contexts and organisations.

3.2.7 Although an attempt is now being made to focus competency standards on broadly-defined occupational roles, it is worth noting that current approaches do not break with the basic competency-based paradigm. Competency-based approaches continue to treat occupational competence as capable of being adequately characterised through the repeated subdivision of areas and sub-areas to arrive at a list of separately assessable 'elements of competence' in terms of which individuals can be judged as either competent or not competent.

3.2.8 In his recent review of new skills recognition processes in Australia, Dean Ashenden expresses concern that perhaps vocational skills in Australia are being defined 'too prescriptively and too narrowly' and that 'the process of definition of competencies may reinforce and codify rather than overcome Taylorist conceptions of many workers as unthinking 'hands' (NBEET, 1991b, 42).

3.3 How should knowledge be accommodated?

3.3.1 Jessup's 1991 book, Outcomes: National Vocational Qualifications and the Emerging Model of Education and Training, contains a chapter entitled 'The Problem of Knowledge'. As Jessup points out, the role of knowledge has been an
ongoing problem, 'a major subject of debate' (p.57) and a 'dilemma' (p.126) in attempts to implement competency-based approaches to vocational training in the U.K..

3.3.2 Central to competency-based approaches is a push towards more practicality in education and training, interpreted by most proponents as requiring a greater emphasis on the assessment of performance rather than knowledge (Norris, 1991). For many commentators, a key feature of CBET is that it shifts attention away from inferring competence from tests of knowledge, to the assessment of individuals' capacities to perform in particular contexts (Ruby, 1992). In its most extreme form, this means side-stepping assessments of knowledge entirely:

The early arguments within the competency movement went something like this: If a person performs competently we need not be concerned with what he or she knows. Any knowledge the individual requires can be inferred from their performance. (Jessup, 1991, 121)

3.3.3 Part of the 'problem' with respect to the role of knowledge in competency-based approaches stems from attempts to drive a conceptual wedge between knowledge and understanding on one hand, and competent performance on the other. As Wolf (1989) notes, the term 'skills' does not seem to cause a conceptual problem for advocates of CBET; 'knowledge and understanding', however, do. For Jessup (1991), knowledge and understanding are not the same thing as competence, a position that Jessup concedes has 'considerable implications' for assessing occupational competence.

3.3.4 It is now generally acknowledged that observations of performance alone are an inadequate basis for the assessment of occupational competence. This was recognised even as long ago as the 1970s in competency-based teacher education programmes in the United States where it was observed that 'clever actors' could sometimes display superficial 'competence' with respect to checklists of observable performances without possessing deep understandings of educational principles.

3.3.5 One solution proposed to the knowledge 'problem' is to attempt to assess relevant knowledge and understanding through oral questioning linked to observations of workplace performance. In this way, knowledge assessment would not be detached from its practical application:

It is considered important for NVQs that the assessment of knowledge is closely related to its application. Oral questioning which takes place during or following demonstrations in the workplace or college would seem to be the most natural. (Jessup, 1991, 57)
3.3.6 However, questioning in relation to specific workplace demonstrations raises the question of the extent to which this approach is likely to provide evidence of depth of knowledge. Particular problems encountered in a workplace will provide opportunities to assess a person's mastery of aspects of knowledge and understanding relevant to those problems, but will not provide an opportunity to assess the depth of an individual's knowledge base:

The concern with respect to knowledge and understanding is with the quality of evidence and the extent to which, cost-effectively, it is adequate as a base for inferring ability to practise effectively over an extended period of time and in diverse settings. (Debling, 1989, 87)

3.3.7 In recent years, the difficulty of making valid judgements of occupational competence based on observations of workplace performance alone have led proponents of competency-based education and training to introduce the notion of 'supplementing' observations of performance with more direct assessments of the rich knowledge base essential to most occupations:

The difficulty of making correct inferences without large amounts of evidence, and the fact that the direct measures of competence are themselves highly contextualised, mean that we may find it very hard to acquire adequate evidence by focusing on competence alone... We should not pretend that performance criteria, with or without range statements, can be used to generate functionally identical assessment procedures. It makes much more sense to see the assessment of competence involving alternative ways of amassing adequate evidence using a collection of different sources: with testing of knowledge and understanding supplementing and covering different contexts from those on which direct performance evidence is available... Separate consideration and assessment of knowledge and understanding will be desirable when, and to the degree that, occupations are characterised by unpredictable situations and/or a huge range of different situations. (Wolf, 1989, 46-51)

3.3.8 Mitchell (1989) refers to the inability to adequately assess knowledge and understanding through observations of workplace performance alone as an assessment gap:

Although we would like in theory to infer competence from performance as this is the essence of competence and is likely to have a greater validity for those aspects under consideration in terms of later achievement, we are not able to do so. The gap is filled by the collection of evidence of an individual's knowledge. (Mitchell, 1989, 61)

3.3.9 An identical concern has arisen in Australia in recent work by professions to develop competency-standards. The proposed solution is to use the assessment of knowledge as 'supplementary' evidence:

A number of professions have expressed concern that in practice, performance-based assessment cannot adequately measure the breadth of knowledge required of practitioners... knowledge testing can fill the 'assessment gap'. In assessment of competencies, knowledge
can be used as an additional or alternative source of evidence where performance evidence is exhausted. (NOOSR, 1992, 3)

3.3.10 This leaves unanswered the question of the place of knowledge in occupational competency standards. Should competency standards attempt to incorporate requisite knowledge or focus only on observable occupational behaviours/performances? According to Oates (1989), attempts in the U.K. to divorce knowledge from the definition of occupational competence and to see knowledge and understanding as 'add-ons' to performance have been a source of problems in attempts to implement CBET:

Incorporating specification of relevant knowledge within the standards has proved particularly problematic. The conception of knowledge as a 'bolt-on' to performance--dominant in the early work on assessment in Training Agency programmes--was responsible for many of these problems. However, following consultation and intensive development effort, relevant knowledge is now being incorporated into standards. (Oates, 1989, 192)

3.3.11 In Australia, competency standards are composed of elements of competence which are 'discrete identifiable components or segments of professional competence' expressed as 'recognisable and demonstrable performances in the professional workplace' (Heywood et al., 1992, 34). The position taken is that statements of competence with their focus on performance will provide a rationale for determining what knowledge and understanding need to be acquired. In this way, requirements for knowledge and understanding will be derived afresh from the statement of competence.

3.3.12 The fundamental question in relation to the knowledge 'problem' is whether approaches that distinguish knowledge and understanding from competence are capable of providing useful bases for describing and, in particular, assessing occupational competence. Studies of professional work repeatedly emphasise the importance of the professional's rich and highly-organised knowledge base:

The problem-solving difficulty of novices can be attributed largely to the inadequacies of their knowledge bases... Current studies of high levels of competence support the recommendation that a significant focus for understanding expert thinking and problem solving and its development is investigation of the characteristics and influence of organised knowledge structures that are acquired over long periods of time. (Glaser, 1984, 99)

3.3.13 This research suggests that approaches which focus on the performance of discrete, observable segments of workplace behaviour may provide a less useful base for describing and assessing professional competence than approaches which explicitly
recognise the possession of rich knowledge bases and deep understandings of principles as central to definitions of professional competence.

3.4 Is CBET consistent with current views of learning?

3.4.1 Competency-based education was introduced as a concept in the late 1960s and so reflects aspects of educational thinking at that time. In common with the behavioural objectives, criterion-referenced testing, and minimum competency movements, CBET was influenced by principles imported from behavioural psychology. Central to those movements was the attempt to specify precise, observable outcomes that would function as objectives for instructional programmes and a basis for assessing individual achievement.

3.4.2 Outcomes (or competencies) were to be pre-specified, possibly by agencies external to education institutions (as in the minimum competency movement). There was a widely-held, but eventually widely-abandoned, belief that if outcomes could be specified with sufficient precision, assessment would be a straightforward matter of establishing whether or not each objective had been achieved; diagnosis would be a process of establishing 'gaps' in a student's learning (ie., objectives still to be mastered); and feedback on gaps would provide a focus for future teaching.

3.4.3 Reflecting on experience in applying competency-based principles to U.S.A. teacher education programmes in the 1970s, Houston (1985) notes that a source of criticism of the movement at that time was its emphasis on pre-specified objectives with control residing outside classrooms in some 'external system'. Similar concerns about the locus of control in competency-based systems have been expressed more recently in Australia (eg., Tonkin, 1991). It is certainly true that, in systems of competency-based assessment, the question of interest is whether individuals can demonstrate sets of external, pre-specified competencies.

3.4.4 In the decades since the introduction of CBET, educational research has provided insights into the learning process which are strikingly different from a conception of learning as a process of satisfying pre-specified 'objectives'. In particular, there has been an increasing awareness of the active, constructive nature of most forms of human learning and of the important role that learners' personal conceptions and representations of phenomena play in the learning process. Rather than being a passive process of mastering objectives on a checklist, meaningful learning is
increasingly being recognised as an active process through which learners construct their own interpretations, approaches and ways of viewing phenomena and through which they relate new information to their existing knowledge and understandings.

3.4.5 These changing understandings of the learning process have implications for the assessment of competence. They suggest that, in many areas of learning, at least as important as establishing an individual’s ability to perform pre-defined activities will be the investigation of that person’s conceptions of key principles and phenomena. Indeed, in some areas, competence may be better defined and measured not so much with respect to the performance of observable activities as in terms of individuals’ conceptual understandings of the problems with which they are working (eg, Sandberg, 1991; Dall’Alba and Sandberg, 1992).

3.4.6 Evidence collection of this kind cannot easily be incorporated into traditional competency-based systems. It requires a shift in paradigm. In particular, it requires a shift from an approach based on establishing whether candidates can meet performance criteria on pre-defined competencies to an approach based on the attempt to understand how individuals are thinking about and approaching problems (ie., an intention to understand learning from the perspective of learners). A considerable volume of research on student learning in higher education institutions, including a significant body of Australian research (eg., Ramsden, 1992; Bowden et al, 1992), has underlined the importance of exploring students’ conceptions and personal representations of the material they are learning, and of building instruction and assessment around these varying conceptions. It is important to investigate whether this developing understanding of student learning can be accommodated within a competency-based approach to education and training.

3.5 What is the research base for CBET?

3.5.1 Given the extensive body of learning research undertaken in recent decades, what is the research base for competency-based education and training? What are the principles underlying CBET, and what is the evidence that structuring learning into modules or units of competency and lists of assessable elements will lead to improvements in education and training standards?
To the extent that competency-based education programmes were established on a theoretical base, they drew on research findings in behavioural psychology and mastery learning:

The basis for CBET is in its reliance on objectives specified in advance and known to the learner. It assumes than humans are goal oriented and that they are more likely to achieve such goals and objectives when overt actions are taken to achieve them. Advocates point out the research basis for this position in psychology through incidental/intentional learning studies, in experiments in mastery learning by Benjamin Bloom, John Carroll, and their associates, and in the studies of behaviourally stated objectives. (Houston, 1985, 901)

In fact, theoretical support for CBET in studies of this kind was relatively limited, and the movement in the 1970s was driven largely by rhetoric and based on principles considered by its advocates to be self evident. As Houston points out, research into U.S.A. competency-based teacher education programmes was rarely conducted and systematic evidence for its effectiveness was never adequately assembled:

Despite the extensive rhetoric, publications, and discussions related to competency-based teacher education, almost no basic definitive research was conducted to prove or disprove its effectiveness. Hundreds of publications recommended ways to design CBET programmes, described what institutions were planning to do, outlined lists of competencies, and included instructional units referred to as modules. Few reported research on the CBET concept, competency validation, or programme effectiveness. Carefully controlled experimental studies were seldom conducted... The lack of carefully controlled and constructed research on the effectiveness of competency-based teacher education and of specific competencies is a major weakness in the development of the movement. (Houston, 1985, 901-2)

Although competency-based approaches are now being promoted as key components of government agenda for the reform of education and training in both Australia and the U.K., limited research in support of these initiatives has been conducted. In view of the chequered history of the competency-based movement; the level of resources now being committed to the development of competency standards and methods in Australia; the belief among Australian industries that the link between the government's current skills formation/recognition processes and improved workplace productivity is yet to be demonstrated (NBEET, 1991b); and concerns being voiced by spokespersons within the school (Tonkin, 1991) and higher education (AVCC, 1992) sectors over the directions of the competency-based movement, the lack of careful, systematic evaluations of CBET initiatives is surprising.
3.6 How is assessment to occur?

3.6.1 Many initiatives in education stand or fall on the strength of their accompanying assessment procedures and, more particularly, on the feasibility, credibility and reliability of those procedures. This is because, whatever the espoused intentions, it is through assessment procedures that the most influential statements of educational purpose and value are made. As McGaghie (1991) notes, in a fundamental sense, 'the content and methods used to assess professional competence are an operational definition of competence'. The methods developed to accompany competency standards in Australia will be influential in determining the fate of the movement.

3.6.2 Early attempts to implement CBET principles resulted in assessment procedures based on checklists of hundreds of discrete, often task-based, competencies. Beyond concerns about validity (i.e., that 'the competent person has abilities and characteristics which are more than the sum of discrete elements of competence derived from job analysis', Tuxworth, 1989, 17), were concerns about the appropriateness and feasibility of developing procedures to assess competence in relation to each competency element (Houston, 1985). The development of appropriate assessments for CBET programmes was considered problematic in the United States in the 1970s, and has been a concern more recently for groups developing competency standards in the U.K.:

There still appears to be widespread apprehension that the forms of assessment devised for lower levels within the National Vocational Qualifications framework would be inappropriate at higher levels. As they stand, they would.

(Burke, 1989, 5)

3.6.3 One source of difficulty in the U.K. work has been an emphasis on assessing performance rather than knowledge or understanding. The assessment of performance implies the observation of somebody doing something, which in many occupations, has encouraged a focus on practical, observable, psychomotor activities:

In developing competence-based vocational training and qualifications in this country it has been policy to encourage the direct assessment of 'performance', ideally in the workplace, as the preferred measure of competence. Overall, this has given many people the impression that 'competencies' refer only to very specific practical activities.

(Wolf, 1989, 40-41)

3.6.4 At one level it is possible to ask whether a person performs a series of occupational tasks or roles to a satisfactory level. In the case of a veterinary surgeon, it might be
asked whether he/she "demonstrates competence in obtaining and recording an accurate history of animals and their environment" by observing what they do when they obtain, clarify and record information. Assessments of this kind recognise that the ability to perform workplace tasks competently depends on the possession of various underlying attributes, but these capacities are not the object of assessment and are not of direct concern. The purpose of assessment is simply to establish that various workplace tasks are performed competently:

The early arguments within the competency movement went something like this; if a person performs competently we need not be concerned with what he or she knows. (Jessup, 1991, 121)

3.6.5 Under this approach to competency-based assessment, "competencies" are defined as workplace tasks. The question posed by assessment is: is this workplace task performed competently or not?

Assessment poses the question of whether the statement of competence has been achieved or not... Assessment may be regarded as the process of collecting evidence and making judgements on whether performance criteria have been met. For the award of a National Vocational Qualification a candidate must have demonstrated that he or she can meet the performance criteria for each element of competence specified. (Jessup, 1991, 18)

3.6.6 As noted in Section 2.12, the approach being taken to develop competency standards for the professions in Australia is not based on the professional's ability to perform specific tasks, but on the integration and application of relevant knowledge, skills and attitudes to complex workplace activities.

3.6.7 A second difficulty for the development of assessment procedures arises from the concern of the CBET movement with comprehensiveness. Functional analysis begins with a statement of occupational purpose which is then divided into broad areas of occupational activity (units), which are further subdivided into 'elements' of workplace activity. In this way, an attempt is made to achieve coverage of an occupational area so that a comprehensive assessment of all aspects of an occupation can be undertaken. Range statements are a further attempt to spell out in a detailed and comprehensive way the range of contexts in which competence must be demonstrated.

3.6.8 The desire for comprehensiveness in assessment is reflected in much of the CBET literature and is contrasted by proponents of competency-based approaches with the notion of sampling which is sometimes characterised as an 'educational' concept inappropriate to competency-based systems. In reality, the concepts of sampling
and inference are fundamental to all assessment. Even in a workplace where observations can be made over a period of time, supervisors never see more than a sample of a person's performance, and it is impossible to observe an individual's ability to deal with all of the problem types (eg., medical cases) likely to be encountered in practice.

3.6.9 An alternative to assessing the competent performance of tasks is to make underlying attributes the object of assessment. In this case, the purpose of assessment is to infer underlying attributes such as conceptual understanding, knowledge, skill and attitude either from:

- performances on tests and simulated occupational tasks; or
- performances in the workplace

3.6.10 Thus, it becomes necessary to recognise that the assessment of competence is fundamentally about inferring competence from samples of performance. Under these circumstances, "competencies" are defined in terms of attributes, and competence is seen as deriving from the possession of, and ability to apply relevant attributes to occupational tasks:

The competence of professionals derives from their possessing a set of relevant attributes such as knowledge, skills and attitudes. These attributes which jointly underlie competence are often referred to as competencies. The process of competency-based assessment requires the gathering of sufficient evidence about competencies to enable a judgement about competence to be made. Since competence can be inferred from performance, the range and kinds of performance activities that are assessed need to be as varied and sufficient in number as is required to make the inference safe. It is important to note that performance need not only be thought of as workplace-based: it can extend to performance equivalents including simulations, case studies, etc. (Gonczi, Hager & Athanasou, 1993)

3.6.11 Under this approach, task-performance is not the object of assessment. Rather, performances on tasks are used as opportunities to collect "evidence" about underlying attributes. If competence is thought of not only as the possession of, but also as the ability to draw on and to apply underlying attributes to occupational tasks, then the more closely the tasks on which persons are assessed resemble tasks actually encountered in the workplace, the more valid those assessments are likely to be.

3.6.12 In their Assessment Kit for nurses, Gibson and Lawson (1993, 20) emphasise the importance of the nurse assessor's tacit knowledge and professional judgement in
first deciding what is worth noticing and recording in a nurse's practice (referred to as cues), and then "putting cues together to draw a conclusion about a competency":

As new 'bits' of information (data) are gathered about the practice of the nurse being assessed, and added to previous data, the expert nurse assessor reflects and re-interprets, finally arriving at a professional judgement about the competencies and ultimately the competence of the nurse.

(Gibson & Lawson, 1993, 21)

3.6.13 Gibson and Lawson provide the following schematic representation of the relationship between observable practice (cues) and a set of underlying competencies to be inferred from nurse behaviour:

![Cues-competencies relation diagram](ANRAC, 1990(3), 184)

**Figure 3.1: Cues-competencies relation**

3.6.14 According to Mitchell (1989), assessment in competency-based systems is based on the notion of 'sufficiency of evidence'. But what constitutes sufficient evidence to infer competence, and will different assessors have similar understandings of 'sufficient' (eg, will assessors base judgements of competence on evidence drawn from a similar range of possible problems and applications)? Is there a need, as Docking (1992) suggests, for competency standards to also include 'rules' concerning the combination of performance criteria that must be demonstrated to satisfy competency requirements?
3.6.15 A third, and related, issue is the issue of reliability. How likely is it that different assessors in widely-separated and dissimilar contexts will interpret elements of competency and their associated performance criteria in similar ways? If they do not, and they apply different standards in judging competence, then a key purpose of competency standards - to provide a common frame of reference as a basis for meaningful comparison and mutual recognition - will not have been achieved.

3.7 Will standards encourage excellence?

3.7.1 Another issue that has been raised in recent discussions of competency-based approaches is whether the development of competency standards will define minimum requirements and so encourage minimal achievement rather than excellence.

3.7.2 The history of competency-based movements suggests that this concern is not entirely unjustified. The minimum competency movement in the U.S.A. in the 1970s was introduced to specify the competencies required for the award of high school diplomas. But from the outset there was concern that the specification of required competencies would set minimum standards and that there would be few incentives for students to aim for higher levels of achievement:

Where exit rules allow one to receive a high school diploma once minimum standards are met, the minimums may also serve as the maximums, and many students may choose to leave as soon as possible. This issue is particularly troublesome for institutions of higher education that are accustomed to demanding more than minimums as admissions criteria... It is likely, therefore, that competency-based diplomas will be viewed with initial if not undying scepticism by colleges and universities. (Spady, 1977, 12)

3.7.3 In the 1980s, the minimum competency movement was largely swept aside by a new concern for 'excellence' in American schools.

3.7.4 The competency standards being developed for professions in Australia attempt to describe 'entry level' requirements for competent practice in a profession. In this sense, the standards describe minimum requirements. But this does not preclude the possibility of describing other levels of competence in a profession (ie., standards for purposes other than entry into the profession):

The notion of 'minimum competence levels' is useful for certification purposes but carries some risks if these are the only standards available. Many organisations depend on high level performers for their success. We should be looking for ways of cultivating excellence in occupational competence and the recognition of enhanced performance. (Tuxworth, 1989, 22)
3.7.5 This is an idea that has already been taken up by some professions which are developing descriptions of standards for different levels of professional practice. Agricultural science, for example, is setting standards for three levels of career development as an agricultural scientist. Under this approach, elements of competence are thought of as *developing* capacities (rather than on/off items on a checklist), and any given set of 'standards' defines a level on a progression of increasing occupational competence. The three standards being developed for agricultural scientists reflect (among other developing competencies): increasing levels of understanding of the environments in which agricultural scientists work, and increasing ability to assume team leadership and professional responsibility.

3.7.6 The solution to ensuring that competency standards do not lower aspirations is to ensure that they are developed for more than one level of occupational competence. In this way, the model of on/off competency checklists which dominates much of the current CBET work can be replaced by a model of continuously developing competencies described at a number of different standards or levels.

**ISSUES FOR HIGHER EDUCATION**

3.8 Competency-based education

3.8.1 Competency-based models of education and training are receiving wide support in Australia through the work of the National Training Board and financial support from the National Office of Overseas Skills Recognition for the development of competency-based standards in the professions. Competency-based principles have also been incorporated into recent government reports on key employment-related competencies in post compulsory education and training (Mayer, 1992) and the new Australian Vocational Certificate (Carmichael, 1992). In this context, moves towards CBET systems could have far-reaching implications for institutions of higher education.

3.8.2 In the U.K., where much of the CBET model now being implemented in Australia was developed, advocates of competency-based education and training envisage an integrated provision for learning, the common feature of which will be that 'all forms of learning provision would be stated in terms of outcomes' and communicated in 'a single record which incorporates achievements in schools and
beyond' (Jessup, 1991, 134). By focusing all forms of learning provision on statements of outcomes organised into accredited modules, it is believed that better articulation between sectors will be achieved and demarcations between general and vocational programmes will be broken down. Similar arguments for bringing different forms of learning provision within a common CBET framework are made by advocates of competency-based approaches in Australia:

It would be a farcical situation if the already artificial divide between higher education and other education sectors were to be further widened. It should be a priority for governments to bring professional level education within the 'new [CBET] paradigm'.

(Hawke, in NBEET, 1991b, 69)

3.8.3 Possible implications for the organisation and delivery of higher education courses in the U.K. have been made quite explicit and include the concept of restructuring degrees into separately accredited 'modules':

The Council for National Academic Awards is exploring competence based approaches to specifying degree requirements. They already operate the Credit Accumulation and Transfer Scheme (CATS) which is rapidly gaining in popularity. A prerequisite is the restructuring of degrees into component units. The CATS also recognises prior achievements gained through experience in employment as unit-credits towards a degree. The Open University, which already offers degrees in the form of units, is looking seriously at specifying unit requirements in the form of learning outcomes rather than programme inputs. Although modular degrees are not yet normal practice, their numbers are growing. (Jessup, 1991, 114)

3.8.4 In Australia, the implications of the competency-based movement for higher education programmes have not been elaborated in the same detail as in the U.K., but there is a clear expectation on the part of some advocates of CBET that work currently under way to develop competency standards for professions could have implications for how universities design curricula and assess student achievement in the future:

The entry level standards being developed need to reflect the basis on which individuals gain entry to, or are recognised within, the professions. Such recognition may be based on staged progression and professional experience acquired after graduation, but there may also be an expectation that university courses establish that specified competencies have been acquired. There may also be pressure on universities to develop competency-based curriculum, pedagogy and assessment methodology.

(DEET, 1992, 2)

3.8.5 Within the higher education sector there is growing recognition that competency-based methods could ultimately impact on all aspects of university curriculum and assessment, including student selection procedures, the content and organisation of university courses, and methods of student assessment. The movement has the potential to substantially reshape university education by imposing demands that courses be redesigned to accord with CBET principles and to focus on clearly
defined, observable competencies. During the past twelve months, CBET developments have received increasing attention from leaders in the higher education sector concerned over possible distortions of the non-vocational purposes of university education:

Unless very sensitively handled, the specification of sets of competencies required from university graduates can threaten the integrity of university-level education. Such specification distorts courses and curricula by giving undue weight and significance to attributes removed from the necessary, if less measurable, intellectual context in which they must be embedded. (AVCC in NOOSR, 1992, 2)

3.8.6 We end this chapter by mentioning three issues being addressed in current debates on competency-based approaches in higher education.

3.9 Purposes in higher education

3.9.1 A first issue concerns the role of university education. Pressures for greater attention to occupational relevance, the development of general employment-related competencies in university courses, and the introduction of more vocationally oriented competency-based curricula and assessment are seen by some as antithetical to the essential purpose of a university education--namely, the pursuit of knowledge, critical and reflective thinking, and personal development:

Education serves a variety of different purposes and seeks to meet the needs of a range of different clients. Education is very much about developing personal skills, independent of specific roles or occupations, such as the broad intellectual abilities of critical thinking, problem-solving and synthesis, communication and other characteristics of personal effectiveness and enterprise. Education is often concerned with extending capabilities in an academic or a range of academic subjects. (Debling, 1989, 92)

Universities exist to pursue knowledge and ideas and to inculcate certain values, such as service of fellow citizens. It is only one part of the idea of a true university that its graduates possess skills which make them employable. (Schedvin, 1992)

First degrees have to create an interest in areas of study beyond the narrow focus of a vocationally directed curriculum.... In many ways the value of a university education is more in the process itself than in specific, measurable employment-related outcomes. (Karmel, 1992)

3.9.2 This view of the role of the university in promoting the pursuit of knowledge and higher-order thinking independently of specific vocational purposes finds support in the recent report of the Business-Higher Education Round Table:

There is a clear view [expressed in the report of the Business-Higher Education Round Table] that the university and technical education system should be seen and developed separately,
with universities primarily oriented towards the extension of knowledge and research, and the technical institutions primarily concerned with applied studies... The value of greater breadth in undergraduate education was very clearly seen by several chief executive officers who argued strongly that as employers they wanted their new graduate employees to have clearly trained minds and high-level intellectual abilities rather than specific skills or vocational training. (Mayer, 1992)

3.9.3 On the one hand, then, are arguments that university courses too often emphasise 'book knowledge' and theoretical learning at the expense of the practical competencies actually required in professional practice. Allied to this is the argument that graduates of higher education programmes commonly lack general workplace knowledge and skills. On the other hand are arguments that university courses are necessarily concerned with systematic disciplinary knowledge and methods of critical inquiry and analysis - purposes not always definable in terms of skills training and professional competency.

3.10 Articulation and student selection

3.10.1 A second issue concerns pressures on higher education institutions to use competency-based assessments as substitutes for existing university admissions requirements. Competency-based approaches are seen as particularly promising in increasing opportunities for articulation between training courses and higher education and recognising prior learning however it may have occurred:

The development of a competency-based vocational education and training sector will result in increased expectations that the higher education sector will make use of certification of competency standards in its admission procedures and will provide credit transfer based on the recognition of prior learning. (DEET, 1992, 4)

3.10.2 Calls for higher education institutions to become part of a single, coherent, competency-based system of education and training have increased in recent years, resulting in counter-arguments from the higher education sector that proposals that credit be carried from one sector to another are misconceived because different kinds of learning are pursued in different sectors (NBEET, 1991b, 52). However, the argument that the concerns of higher education are more genuinely 'educational' than those of the TAFE sector can be challenged, as can the implication that competency-based approaches are therefore more appropriate to some vocational courses than to others (Kinsman, 1992, 26). The concerns of the two sectors may
be different in practice but the question remains as to whether they should be so different and, if not, whether a competency-based approach is appropriate for either.

3.11 Autonomy in deciding course content

3.11.1 A third issue, related to the issue of purpose, is the question of the extent to which the development of competency standards might dictate the content of higher education courses. This is an expressed concern of the Australian Vice-Chancellors' Committee:

One of the AVCC concerns is that outside agencies and professional bodies might seek to use the development of competency-based standards as a means for dictating what ought to be taught in university courses, shifting the balance from academic judgement about what will be necessary in the future to the judgement of those whose knowledge and experience are grounded in present or past practice. (AVCC, 1992, 3-4)

3.11.2 The NOOSR Guide to Development of Competency Standards for Professions explicitly makes the point that competency standards are focused on competent workplace as performance, rather than defining the competencies expected of new graduates. However, there is also an expectation that competency standards may influence the content and delivery of courses in higher education institutions:

Competency standards are not concerned with defining the abilities of new graduates. They are concerned with defining competent performance in the workplace. It is of course to be hoped that the abilities of new graduates would be closely aligned with the level of competence required at the entry level of the profession. A good set of competency standards will provide invaluable guidance for occupationally-related changes to the content of courses. They may also inspire new methods of delivery and/or assessment. (Heywood, et al., 1992, 14-18)

3.11.3 Universities already work with professional organisations to design curricula suited to the professional registration and accreditation requirements. There appears to be some concern that the working dialogues that already operate between universities and professional organisations are not adequately recognised in calls for universities to modify courses to make them more responsive to workplace competencies. These working dialogues are examined in more detail in sections 4.2 and 4.3 of this report.

3.11.4 There is a recognition on the part of the higher education sector that professional registration or the right to practise is properly a matter for the relevant professional...
organisation or regulatory authority and that the criteria on which candidates are admitted to a profession is the preserve of the profession and regulatory authorities. Competency-based approaches may assist in this process and may facilitate ongoing dialogue between the professions and universities. However, there is a strongly-held view that university curricula and assessment, and the criteria on which candidates are admitted to a profession, 'must remain in principle distinct in order to retain a proper balance between the training imperative and the broader goals and purposes of higher education (AVCC, 1992, 3):

University courses and curricula must continue to be concerned with broader issues than immediate professional competency—and should, therefore, be primarily informed by the judgement of academics in touch with advancements in knowledge on a worldwide basis. (Wilson, 1992, 58)

3.11.5 This has led to the notion that competency standards could be developed by the professions in collaboration with higher education institutions as one element of the minimum requirements for entry to professional practice, with no suggestion that any or all of these competencies should necessarily be developed during undergraduate professional programmes (NBEET, 1991b, 70).

3.11.6 The concerns of the universities were partly met by a statement (November 17, 1992) by the then Minister for Higher Education, The Hon Peter Baldwin (quoted in 1.3.2 above). However, it is difficult to gauge how changes in Ministerial responsibilities this year will affect policy in this area.
CHAPTER FOUR
ROLE OF PROFESSIONAL ORGANISATIONS

4.1 The interview study

4.1.1 The procedure for selecting professional groups for interview and details of the interview process have been described in Chapter One. Only a brief summary will be provided here to remind the reader of the main characteristics.

4.1.2 The ten professional areas represented are accounting, agricultural science, architecture, engineering, medicine, nursing, physiotherapy, psychology, teaching and veterinary science. Interviewees in every case included the person responsible to NOOSR for the competency project the group was undertaking, except for the field of medicine in which no NOOSR project was operating. In six cases, an academic involved in the project took part in the interview.

4.1.3 The questions asked during the interview covered three areas - current practices of the profession in its relationship to university courses; the processes involved in the development of competency-based standards being undertaken by the professional group; and the future implications for universities of such a development. The interview schedule is provided in Appendix A. Interviews were semi-structured only so that those interviewed were given the opportunity to explore issues of concern to them and in many respects the interview schedule was a checklist of issues covered rather than representing an 'oral questionnaire'.

4.1.4 In many cases, those interviewed do not represent their profession in general - only specifically with respect to the NOOSR project - although some project groups are coalitions of relevant organisations. Also, all interviewees were assured of confidentiality and encouraged to be frank and open in their responses. For these reasons, all quotations used in this chapter are unattributed and are used to illustrate the ideas under discussion rather than to link specific views to particular professions. For clarity, the letters A to J have been assigned randomly to the ten professional areas and all quotations have been labelled consistently throughout the chapter. Quotations are used liberally in order to give the reader of this report as full an understanding of the views of the professional teams as possible.
4.2 Current involvement of professional organisations in the design and evaluation of university curriculum, teaching and assessment

4.2.1 All of the professional organisations have a legitimate interest in the nature of university courses relevant to their profession. Such courses are the route by which most individuals enter the particular profession. However, the degree and nature of the influence of professional organisations on what goes on in the relevant university course(s) vary considerably from one field to another. The interviewees from the professional groups consulted in this study gave a variety of responses to the question - 'How does the profession currently contribute to design of curriculum, assessment and teaching in relevant university courses?' The variation in response may be categorised as follows:

(a) No real involvement.

(b) Cross membership - academics and professional organisations.

(c) Membership of course advisory committees.

(d) Accreditation processes.

4.2.2 These four are not all mutually exclusive; rather, each level represents the limit of involvement of the organisation and (b), (c) and (d) are linked together, with each potentially subsuming those above.

4.2.3 It should be noted that the categorisation above is of reports given essentially from the viewpoint of the professional organisations, not the universities.

4.2.4 Category (a): No real involvement. There are professional organisations whose activities up to the present time have not included any direct involvement in design or evaluation of the relevant university courses. (Only) 'in a very ad hoc manner.' was the response from Profession F.

4.2.5 That group is at the stage of forming an educational policy committee but it is still in its infancy. The body whose task it is to map the area of interest and develop a policy does not have a university academic on it.

After each conference we've formed a committee whose job it is to get on and formulate a policy. ... The second one was on education. All three of them will probably have a policy ... next year. (Profession F)
4.2.6 Category (b): Cross membership. For others such as Profession A, membership of the professional organisation includes many full-time university academics who teach in the professional courses and so there are indirect influences on the courses through normal joint participation in professional organisation activities.

We actually put together an accreditation process but there was not the mechanism to actually enforce it simply because it is really very expensive and there has never been any power that a professional association (or) a Registration Board might have. ... The influences are much more informal than formal because we rely on our colleagues ... to help us educate the students. Without them we couldn't do it so if we didn't have a programme that they approved of then in fact they wouldn't be as willing to take our students. We don't very often sit down and discuss what we actually teach or why we teach it this way or that way. (Profession A)

4.2.7 For others, the influence is equally indirect but involves interaction between the university faculty and practitioners in the community.

It's an individual thing: it's a localised thing. People may be able to contribute to the design of programmes in their local institution but I don't feel that there is much evidence of this in any kind of national way. Where there are good (local) partnerships developed ... there is some potential. (Profession B)

Many members of higher education institutions (are) members of the profession and participate in it ... We also have members of the profession typically on faculty boards and they have input into faculty policy. The profession has a (professional) education committee as part of its professional association and they, from time to time, meet with faculties with continuing input and typically members of faculties are part of that committee. It is informal based on issues. (Profession H)

4.2.8 Category (c): Course advisory committee membership. Some professional organisations have formal membership of course advisory committees as well as having cross-membership between the university faculties and the professional organisation. Such professional organisations exert both a direct and an indirect influence on the university programmes. Most arrangements of this kind are local rather than national.

The Course Advisory Committee ... has representation from unions, from employers in the government and private sector, from Boards. ... Another way the Board interacts with the higher education sector (is through) an Education Committee (of the Board). ... A whole range of things are discussed and then we've written off to the higher education sector. ... It does influence. (Profession E)

4.2.9 Category (d): Accreditation processes. About half of the professional organisations have one or both of the influences described in categories 2 and 3 above, but also exert their influence on university courses in a more rigorous way - through regular accreditation procedures, some at a State level and others nationally.
4.2.10 Each of the professional organisations involved in this way conducts a periodic review process on a five year cycle. In general, these review processes involve two or three members of the professional organisation, often including academics from other universities, who undertake a visit of one to three days duration to the campus. They interview staff and students and inspect facilities, normally following analysis of a written submission of a comprehensive accreditation document from the faculty concerned.

The methodology that we've used is ... the accreditation model rather than the formalised assessment model. So we lay down a set of guidelines, we lay down a set of principles that they should have, we then go in with a team and assess; we're looking at the procedures and the methodologies and the facilities, the structures, rather than necessarily measuring or monitoring the outcome. To set up a national exam, say, to assess all graduates in a dozen skills or whatever (ie. the formalised assessment model referred to earlier) is not necessarily desirable from an educational point of view because it tends to distort the uptake of the curriculum.

(Profession D)

Courses aren't accredited for life. They get re-accredited and re-evaluated after periods of time. It is a five year cycle where you have to be sure there is an appropriate number of people and (you have to judge) not only the content of the curriculum but the people who are teaching it as well. ... That is all very well documented and it has worked very well; departments are very responsive and very interactive with (the professional body) in that.

(Profession I)

Every five years there is a formal inspection of the schools (by the State Board) ... quite an elaborate inspection that takes place over three days, and with a lot of preparation beforehand. The schools prepare displays of students' work ...(and they) have to demonstrate their philosophy in teaching, their objectives, and they have to relate their objectives to the performance. The inspection team also makes non-structured inspections of facilities in the schools and it can interview and question members of the faculty staff and students independently.

(Profession J)

4.2.11 There are normally three alternatives available to such accreditation teams - to give full accreditation, to give provisional (or partial) accreditation or to deny accreditation. The last is rare in any of the professional areas although some groups reported that there were courses in their area which were not put forward for accreditation by the university.

Now there are some departments that because of their institutional culture haven't sought accreditation ... because they realise they wouldn't get it. ... people who have come through non-accredited courses have difficulty getting jobs. 

(Profession I)

4.2.12 As well, only a few courses would be expected to be given provisional accreditation, the vast majority receiving full accreditation in most professional areas investigated. This was sometimes presented as evidence that the system worked, that is, that most university faculties knew what was expected by the profession and made sure that the courses were of the standard required.
Any new course only gets provisional registration and then they are reviewed annually until they have graduates in the workplace. We look at all the course outlines and examination papers. Examination papers first and then we go along to look at all the resources - the library, the computer facilities. We interview students, we interview staff, we look at funding, staff-student ratios, we look at teaching aids - everything right across the board that is concerned with the course.

We ask the universities to choose for us (the staff and students to be interviewed). They have always chosen wisely. We would like to see all fifteen (university programmes reviewed each year) re-accredited for a maximum of five years. ... (we'd) drop them back to provisional if something dramatic happened in that period of time. ... there has only been one (course) dropped back (to provisional) in the last three years. ... There is an annual questionnaire for anyone who has got full accreditation.

Out of eight schools we have looked at, ... we have given only partial accreditation to three. ... We've said 'these are the areas we've identified as problematic and these are the areas you will have to address and we'll come back and look at it again; effectively the period we have given is five years.'

They don't exist if they are not accredited. ... Some of them go in and out but it is fairly rare.

4.2.13 Of course an alternative possibility, for which there is no concrete evidence except the brevity of the visits and the reliance on material prepared by the faculty concerned, is that the process may not be capable of discriminating in the desired way, in the face of the effort by all faculties concerned to show themselves in the best light. Without doubt, this argument would be rejected by the professional organisations, especially those such as the Institution of Engineers (Australia) and the Australian Medical Council which have detailed, formal documentation on the process used. It is not being asserted here that the accreditation processes are not valid but, nevertheless, it is an hypothesis worth investigating, especially in any area where there is criticism of the quality of graduates or where the accreditation procedures are not so well documented.

4.2.14 The intention of the accreditation process is to indicate that the course is a bona fide one whose graduates can be considered for registration in the profession or membership of the professional organisation, because of the accredited qualification gained. How these registration procedures take place is discussed below.

4.3 Current procedures for regulation of the professions

4.3.1 Interviewees were asked to describe the way that graduates currently gain entry into the profession, whether there are any formal registration processes and, if so, what
the processes are. The rules and procedures about regulation of the various professions are not uniform throughout the country nor across professions.

4.3.2 There is a distinction between fully regulated professions (architecture, medicine, nursing, physiotherapy and veterinary science), partially regulated professions (engineering, psychology and teaching) and non-regulated professions (agricultural science and accounting)

4.3.3 It is very common for regulation to be a state matter. This applies to architecture, medicine, nursing, physiotherapy, psychology, teaching and veterinary science. In certain states, the regulation is in the form of a licence to use a particular title (such as psychologist or architect, for example).

4.3.4 In some instances such as the medical field and veterinary science, for example, there is mutual recognition between state authorities. Thus an individual who has been registered to practise in one state is automatically registered to practise in all others which are party to the agreement.

We have a process in Australia generally ... where there are Registration Boards in all States and Territories and they register graduates from all of the programmes. It is just an automatic thing. 

(Profession A)

Basically, some states have actually written the (professional body's) accreditation into their Act so you can only be a graduate of a (professional body accredited) School.

(Profession D)

The requirements for registration are an Australian (professional) degree or a limited number of overseas (professional) degrees and a statement of good faith and character. ... We have an accrediting system (on a national level) that says something about the uniformity of professional education in Australia and in New Zealand in relation to the standards in the U.K.

(Profession H)

4.3.5 This is not true of all professions. Part of the reason is that, in some professions, the criteria used for making registration decisions vary considerably from state to state. For a particular profession, some states may have no registration requirements at all, another may recognise a number of three-year post-secondary degrees and yet another may require four-year training for registration.

4.3.6 Furthermore, the nature of registration varies from one profession to another. For some, it is a matter of notification by the university to the registration board of the names of graduates for the year and those graduates are automatically registered (sometimes provisionally only). For others, a period of supervised work experience
is required, sometimes over several years, in addition to the undergraduate qualification, before full registration is granted.

4.3.7 Many professional organisations are involved in one way or another in the registration process, often indirectly. For instance, the accreditation judgements of one professional organisation form the basis of regulation in various states. The procedures for determining membership of another professional organisation are used by various state registration boards in their decision-making on entry to the profession.

They have to take their letter which says (they are graduates of the relevant university course) and personally present that to the Board, (along with) some identification of who they are. … They don’t have to sit a general examination and they don’t have to sit an entry examination. … They don’t have to be nominated; they have to go before the Board but it is a carte blanche thing. … It is completely consistent (throughout the states). (Profession A)

The universities have retained their role as the certifying bodies; state registration boards have accepted a degree as indicated competence to practise. (Profession D)

At the end of the year I sign a form, there’s a form … to say that in fact (the graduates of that year have) met the requirements and they’ve been recommended as demonstrating the competence and we probably say that they’re, I don’t know whether it says ‘fit and proper’, but something along the lines which meets the Act’s requirements. (Profession E)

That four years (honours degree) qualifies someone for associate membership of the society. To get full membership another two years is needed. So it is a four plus two model for membership of (the society). Most of the registration boards also follow that four plus two rule. (Profession I)

4.3.8 Even when the profession is not regulated at all, there may be stringent rules for membership of the relevant professional organisation. This introduces a de facto control through the association.

We take them in as soon as they graduate as non-voting members. They have no status (and) to progress to a (fully professional membership) they have to have three years supervised experience plus complete our education program which is five one-semester units. That normally takes about two years to do part-time. (Profession C)

4.3.9 The overall conclusion to be drawn is that there is a wide range of regulatory procedures in place in the professions in Australia, with the criteria and processes varying considerably from profession to profession and from place to place, whether the profession is unregulated, partially-regulated or fully regulated. To some extent that is the kind of scenario which proponents of competency-based standards can point to as evidence of a need for revision.
It can be inferred from the evidence described above that assumptions about university study underpin many of the accreditation and registration processes. Accreditation review teams can see courses only through a narrow window and there is a degree of faith that if that particular snapshot is acceptable, the whole programme at the university is likely to be adequate. Resource considerations dictate that this has to be the basis of the accreditation process, along with longitudinal experience with graduates of such programmes. Most registration boards take successful completion of an approved undergraduate degree as at least part of their criteria for registration. The undergraduate learning itself is never assessed directly outside of the university and most professional organisations have no wish to undertake such a task.

The Boards have not done accreditation of the programmes. They have gone on trust.
(Profession A)

We don't have the resources to (see student work or examination scripts). ... To do it bigger and better you really need to throw a lot of resources at it and I guess the thing is that when you stand back from it we believe in academic integrity. ... The thing is ... it is not as though we are signing them up the minute they have finished their degree and giving them a licence. They have to go through our postgraduate programmes ... so that's a sorting ground. ... (There are) continuing professional education requirements so when you become a member you can't just stagnate ... it's a continuing process of renewal which has to documented in some way.
(Profession C)

The first thing we've got to do is to recognise that the best we can come up with is an approximation. And in essence, although on the one hand you say we don't trust the professional schools because we don't automatically accredit them, in another way we do because what we say is, 'We're accepting for this examination somebody who has completed a (professional) degree', so we're automatically beginning to assume that that degree has had certain components ... But what you are saying is that this person is not someone who's walked off the street without any evidence, these are people who've got a formal degree, certified that they've completed a course of training.
(Profession D)

Professional Stage 1 is talking about the person entering the workforce... Although we try and avoid time served and using something that is just based on curricula as a bench mark, it is at the moment equivalent of someone who has graduated.
(Profession F)

4.4 Adequacy of current graduates for workplace

4.4.1 Most professional organisations consider that the graduates from current university programmes are being adequately prepared for entry to the workplace. None indicated a view that graduates are inadequate for the workplace. However, there were some reservations and suggestions about possible improvements that could be made. Some of these include a focus away from more detailed technical study to more general development of the broad analytical and problem-solving skills, more
experience of the workplace, and the development in graduates of the capacity to continue to learn as the workplace context changes.

(There is) a lot of support from the profession for (graduates) and we have indications that they see improvements in the quality of graduates over the last say ten years ... I think the other thing we must point out is that Australian graduates are sought all around the world.

(Profession A)

I agree they are very well prepared and have a broader range of skills than someone who graduated say five years ago. I believe they have a much more composite preparation beyond practical skills into a wider range of areas now. (When our graduates take) the sort of examinations that are set for people coming in from overseas who wish to practise here and who have qualifications from another country which is not recognised over here, ... they achieve extremely high scores.

(Profession A, a second view)

We would really like to see a much broader base in education. ... Professional(s) are required to know more and more technical things and the universities have been inclined to try and accommodate all those things .... If you have still got a three year degree and you are trying to fit in more and more technical things, something else is being squeezed out and in a lot of institutions the class sizes are a lot larger so that we are squeezing out the general education and we are squeezing out written assignments, presentations in tutorials and those sorts of things which give a much broader rounded education. Quite frankly a lot of employers are saying 'Well look you know we expect more of people than just the technical skills' and they are being very fussy about the people they are recruiting. ... Small practitioners want people with the technical skills straight away. The larger employers want people with broader analytical and problem-solving skills. ... We would set a four year degree. ... we would keep the same level of (professional subjects) and broaden it out. ... Can I just pick up one point ... the issue of (wanting) more communication skills and so on in the degree. It is very difficult, when we have student-staff ratios (of) 20 to 1 and worse, to do that. If you were to set an essay for first year you have a thousand essays to mark. ... (How do you) get people to do anything that is written in any meaningful way?

(Profession C)

One of the first three questions you get asked are 'Is there any evidence that changes in the curriculum or the changes in assessment method will improve or do improve the quality of the graduates?' or, 'Is there any evidence that the graduates we produce now are incompetent?' In fact, there isn't any evidence one way or the other, generally speaking. But generally speaking I think there's an impression, people have an impression that the people who graduate are competent. 'They say, 'As far as I can see they do a job'. So the profession, if you like, seems to be reasonably happy with the output of the (universities) in terms of their ability to do the job. But it's like anything. If you question them closely about things ... and say, 'OK, can you see any area for improvement?', you'll obviously always get it. ... And periodically you will see a burst of activity that reflects this kind of concern. (Profession D)

They (graduates from one small state) are highly competent (technically), but there is no spark of continuing education in them, that's the worry. Because there's no research base, they have quite sound (technical) skills but they don't have anything else, there's no spark. So, you worry, how long is that standard going to be maintained or is it going to fall off, because they really have had nothing built in to them, as undergraduate students, to head towards self-directed learning or anything of this nature. That's the one great deficiency we found in (that) school. From a purely (technical) point of view, they are very well trained, straight apprenticeship, one on one type training. But from a longer term point of view, in terms of how these graduates are going to function in five years time or ten years time, there are major worries...

(Profession D)

They are competent; they don't have this organisational framework that some others do because they've actually got their experience in a whole range of places. Yet they're able, they don't just do things because they're told to do them and they're actually questioning and they want to know the basis, they want to practise from a different base. ... I mean it's almost impossible to produce somebody who's able to walk into the (work situation) within the first few weeks and actually provide service in the way that somebody else who's been there 12
months or who might have trained in (the workplace) can actually do it. So, they say that they're not getting enough (work) experience, they're not getting enough of this and that, and ... really the course ought to be four years in length. (Profession E)

There is a general feeling that we are not getting a fair share of the quality of graduates that are available. The entry levels for ... related courses in universities is one of the lowest. And that means that we are not necessarily getting the most intelligent students - I think there is a general feeling that we're not getting the best - and then not being as well prepared for what we expect of them in the workplace now. (Profession F)

People are fairly happy with the quality of graduates overall. They are not necessarily happy with all individuals though and if there were complaints it would (not be about) their knowledge; knowledge and technical capacity are generally highly regarded. The complaints, if any, would be in the translation into the actual workplace and whether people have had sufficient experience of the workplace or whether they actually have the aptitude for it in the first place. That is of course one area the competency standards are addressing. (Profession H)

The four year graduates who come through the honours program are qualified in the way that I would consider they need to be (but) I think there are potentially some problems in some of the newer universities where they really haven't been resourced enough to allow those qualifications to be obtained. ... I am not sure that competence can be generalised to other tasks or the changes in the job environment in as (good) a way as (in) students who come through the honours programs. (They) have the firm training in logical, empirical, analytical modes of thinking and problem solving (and) I think are in one sense as qualified but in another sense more competent in the work situation because the generalisability of their thought processes are greater. That is a fine distinction but I think it is a very important distinction in terms of not only what people can do with specific qualifications that they are given but also the extent to which people can use those qualifications in changing situations. (Profession I)

4.5 Motivation to develop competency-based standards & intended use

4.5.1 There are many reasons for becoming involved in a project aimed at developing competency-based standards for a profession. They could be categorised as follows:

(a) To define or re-define the profession
(b) To articulate standards already held implicitly
(c) To articulate career paths within the profession
(d) To reorient standards in university courses towards performance
(e) To establish or reinforce international comparability

4.5.2 Perhaps the most telling outcome of this study of the professions and their projects on development of competency-based standards is that the vast majority are motivated by the chance to achieve outcomes corresponding to (a) to (c) above rather than to have a direct impact on university courses. This is not universal and
does not mean that the professional organisations are uninterested in what goes on in university courses. Their involvement and interest in accreditation processes demonstrates that interest. But there is also the general belief as expressed in an earlier section that the university courses are achieving their goals.

4.5.3 Most groups interviewed seemed motivated primarily by the value that a set of competency-based standards could be for the profession itself - by helping define the professional identity, by assisting the establishment of career path structures within the profession or by making explicit the standards which had always been important in the profession, but perhaps never fully articulated. Even those who saw themselves as producing competency standards that apply to new graduates often saw that as establishing a base on which the rest of the professional structure could rest, rather than as a means to change university courses. In fact some see the standards as a reflection of the competencies of graduates as they emerge from the university rather than as a prescription of what they ought to be, but are not.

(The profession asked) what are we going to do about ensuring that the courses that are being offered in these new schools are up to scratch. What competencies can we see and how do we define the profession and how do we define what should be in the curriculum for these courses. It was decided that there should be some sort of working party to look at some means of ensuring that there were some general competencies ... I see these as the basis for developing competencies at different levels which will have implication in the work place for different scales of pay within all of the pay schedules that are around ... I see it as having implications for registration so that people will perhaps need to demonstrate competency within their particular context or within their particular scope of practice. (Profession A)

(We will produce a) draft of some sort that can be referenced by different parties within firms who are struggling to define levels of career paths; (they) will be able to access the material and check it against their own frameworks. Professional bodies will be able to have a look at it and when they are making judgements about their professional year or whatever, be able to re-articulate those to the extent that they haven't been (to date). ... People in universities can have a look at them and start to re-inform themselves and their students about what sort of work (professionals) do - because we have never really had detailed descriptions of the range of work that (people in Profession C) do. We might have to look at them from the point of view of our accreditation guidelines. (Profession C)

The profession saw the need to develop careers, career paths and career publicity, take responsibility for professionalism for what we do, become more productive and not reactive, a whole range of things. Now, it became obvious (that) for us to act on that, we needed first of all some bench mark. What did we have, what was the profession, who did it include? ... It became obvious that someone was going to pay for us to develop standards for our profession. It was a great start and one of the first things that we are going to do is to define the profession. I can't find a record of anyone getting together and saying what are we, what makes us special, what right have we got to call ourselves professional, demand higher pay, etc. The competency standards would enable us to describe careers in (our profession) which don't exist.

(Profession F)

The whole thing about the competency standards, (on) which we have the agreement of the profession and the university schools is that we are attempting to define in a new way those standards for registration of the (professional) title and in no way to direct how they should be achieved; this is in no way related to education. (Profession J)
4.5.4 Several professional groups saw the NOOSR financial support as vital to their projects.

It would not have been so fast I think. ... I did a cost analysis ... and it has cost the profession ten times more than it has cost NOOSR because of the time of other people who haven't been paid and the Association has put in money for air fares and the Registration Boards have put in money ... and the whole profession has really contributed. It is not only NOOSR; it is a very huge cost. ... (NOOSR) has been catalytic and it has been extremely useful to us.

The real thrust to develop them was to get a more equitable and thorough National Examination (in that professional area) and it would be competency-based. I think it is unlikely (that it would have been done without NOOSR money). (Profession A)

4.5.5 Several other groups, one of which would not be carrying out its project if not for NOOSR support, also expressed some reservations about their own projects or such projects in general.

I'd just like you to treat what I've said within the context that we are working through a lot of it. A lot of what I've said is yet to be tested. We might at the end of it all decide that we don't want the standards. I would be very surprised though. (Profession F)

If I was in a profession that had greater political muscle my answer (to the question - does the profession need to develop a set of competency-based standards) would be a firm no ...This is a regulated profession, and I think that has costs and benefits. The benefits are to the public that it does provide the minimal safeguards for the public. One of the costs of being a regulated profession is that (we) may have to accept that it needs competency standards. I'd see that as a real cost, but it is a cost that we may have to wear. In terms of the accreditation procedures and in terms of my role here in a university I think that the ...discipline, the disciplinary base of the profession ... probably doesn't need competency standards. ... I think the way in which competency standards are being argued for in this country doesn't recognise the effectiveness of the higher education system as it currently exists, and doesn't recognise that most of what is at the base of the education and training of the professions is very difficult to articulate in terms of the outcomes associated with the competency standards. ... It may well be that the group ... reports to ... NOOSR that such standards cannot be developed effectively for (the profession). It may well be that the steering group reports that such standards can be developed but then decides not to recommend their acceptance.

(Profession I)

I can see the advantage of having explicit in various ways things that will help. ... Now I still think that it is a most interesting though difficult exercise, ... but would not underestimate the difficulty nor would I disagree ... that we really are seeing whether this can be done. Can I just add ... that I think that it is very difficult to tease out the ability to do it ... from political agendas and all the other agendas? (Profession I, a second view)

4.5.6 Not all organisations feel the need to be involved in a NOOSR project to develop competency-based standards although this does not reflect a lack of interest in development of professional competence. The appropriateness of the NOOSR approach is questioned and there is reluctance to set aside extensive work already done using a different approach.
An opinion that's been expressed (is) that (this profession) has ... tended to be a little negative in the development of this current move towards competency-based. Certainly I've heard in a number of seminars presented by NOOSR the statement that (this profession) opposes this kind of development. I think that reflects a sort of misunderstanding of where (the profession) is at in terms of all of this. ... In essence, a lot of the groundwork that's being done by individual professions, including a number that you've already mentioned, of trying to relate the outcomes of their programmes to the content and the methodologies used within those programmes, has been a feature of education (in this profession) for at least the last thirty odd years. And so what people are doing ... now, really has been done and redone and redone yet again - the involvement of the profession in development of training and assessment perhaps, one of the features of the models and systems that are being developed at the moment, is to take on board not only the sort of critical incident type studies and various things, but all the other studies and investigations that have gone on in relation to those professions. ... So there's a huge body of material in addition to the technical stuff that's been developed for a number of years, that I suppose synthesises the views of the profession and consumers and the service providers and everybody else. And so, to some extent, we may be at an advantage to other professions in the sense that we've got a long history of involvement in this kind of development. We've got a very detailed and exhaustive analysis undertaken fairly recently, much of which is now beginning to appear in various forms in educational systems and whatever. And so we've got an enormous amount of data, ... to build on. ... We are reluctant to abandon all of this and go on to, essentially, a methodology which appears to be sort of a structural thing at the moment, when there's some concern that the model that's being put forward hasn't really been evaluated fully in the professional areas. ... It's simply that there's been an enormous amount of work done, and there's still a lot of work being done and rather than abandon all of that to take on a new methodology or new approach, it's really a question of continuing that development and maybe improving and streamlining it, and monitoring what's going on in these other areas.

(Profession D)

4.6 Procedures used

4.6.1 The procedures used by most of the groups we interviewed followed the NOOSR guidelines fairly closely (see Heywood, Gonczi & Hager, 1992). Most used the functional analysis and critical incident procedures and workshop, survey, observation and interview techniques were adopted in various combinations.

4.6.2 The following quotations give an indication of how some of the groups described their procedures.

We ran three analysis workshops where we literally got a range of people together, sixty people from right across the industry ... and we said 'ok what makes you so special?' Despite pressure to describe what we wanted out of it, we resisted and we eventually got precisely what we wanted which were the core competencies, about ten of them. Six different groups doing each workshop came up with the same core competencies. ... We got a panel of experts together, two people from each of those workshops. We picked another group of people who hadn't been involved in those workshops and finally some graduates. We got them together and we worked them over two days and we actually developed a draft of standards. What came out of it is we completely re-defined what the profession was.... All along there has been a suspicion from the tertiary sector, from the academics, as to what has been going on. So we have been very careful to include them; we have three academics sitting on the steering group (out of fifteen). ... We have spent a lot of time talking to the academics.

(Profession F)
Virtually every major group of the profession has had involvement in setting the standards and (they) have now been endorsed by the profession and its AGM and by the National Council which represents a whole lot of other players in the profession beyond the professional association - all of the boards, all of the university faculties and major government employees, state and federal. They all have a part in that and they formally endorsed the standards as they stand at the moment as the basis for the National Examination.

(Profession H)

You start with say the functional analysis thing. It says let's take an occupation and divide it into some categories which we have done - six. And you take each one of those categories (and) divide that into what is required in order to do (it). Now this is on a pretty large scale. Then we break each of those things into components. At no point do we talk about what people do at what level. We are simply breaking up an occupation into a functional task hierarchy and we go as far as you can go within the space of the study and then what we have tried to do is to ask the people who are involved in this, at what level do you see a whole work functioning, and that defines the elements. And then we have associated performance criteria with those elements. At no point yet have we said at what level of your career do you do any of these things.

(Profession C)

4.7 What is competence? How do competencies link to competence?

4.7.1 Interviewees were asked 'What kind of competence are you identifying?' Their responses sometimes indicated that they saw competence as equal to the sum of the competencies they were developing, the capacity to do the things that the competency statements represented. Others responded in a way that indicated but did not articulate fully that there was more to competence than such a summing of competencies. Still others described competence in a holistic way which was well articulated and quite different from the 'sum of the competencies' conception.

There are a range of possible things that you might choose to do and you have to have complex understanding of the background knowledge to be able to ... select the (appropriate) process,... you have enough knowledge and information and understanding and interpretive skills to be able to go somewhere else in order to reach a favourable outcome...It is not just picking something up and doing it; that is an impossibility.

(Profession A)

Well certainly when we started ... it looked as if we were going to have a great long check list of things ... What we are now faced with ... is trying to take things that are reasonably global statements and help people to understand how that applies to them in what they are actually doing and that is quite tricky. ... Our range indicator map at the moment is incomprehensible but we will get there. It ... is very complex at the moment but I don't think it will stay that way.

(Profession A, a second view)

I'd use the word professional competence because (that was used) long before the competency movement was around and I'm still getting tangled up a bit on what I'm supposed to call what. But the idea was that competence is an ability to perform things in practice; it is still the relational motion and it draws upon individual capacities that are both intellectual and instrumental in doing things in practice and the professional adjective in front suggests that there are some things that can be identified commonly so that you could either say somebody is individually professional or that professionally we can identify something that is common across ranges of practitioners. ... A practitioner has to solve a client's problems in practice...
and therefore you need more than an ability to think about what the problem might be. You need some capacities to actually deal with it. ... I think it is pretty difficult to judge unless you are having a specific job done and then you could see the quality of the particular job.

(Profession C)

What we mean by competence is those things which a student needs to know and be able to do to practise safely (in their first year after graduation). ... You can say 'does the content of the exam and the skills required in the exam match the content and skills that (the graduate) has to practise.

(Profession D)

For me it's looking at a holistic set of behaviours that meet a certain standard and that certainly is safe. ... I was going to give an example before and I don't know whether I should illustrate that particular example. Recently with these assessment training workshops, they are watching a young man who is working in a (clinical situation) and he does all of these wonderful holistic things for this (client), all of these heart-rending things and he does things like, he puts the flower in the locker and brings in the relatives and works with the relatives and does all of these wonderful caring things (but he left a syringe on the locker) ... Now some other people wanted to fail him, (his competence?) but because I have a lot of experience (in this area) and I would say that I can judge quality and that's, I think, what tacit judgement's about. It's about judgement of quality because I wasn't able to interview him but that's what I would have done to find out just 'Why did you leave it?'. So you could tease out whether he knew that he shouldn't have left it there and maybe it was because ....... He may well have been banned or at least severely reprimanded ... I thought he was an excellent. Because I looked at his practice and his performance holistically ... it was his interaction and his very strong emphasis on caring for, and very client centred so that he may have been so overwhelmingly busy concentrating on caring for this client that he may just simply forgotten he left the syringe on the locker. So, I guess for me, when I think about competence I really like to think about looking at it very holistically.

(Profession E)

For me it's really the total behavioural repertoire that a (professional) actually has and how they bring that together, so it's actually how you meld all of your knowledge and your skill development and everything else in a way that you can actually deliver (what) is appropriate for this particular client in this particular context. The (professional, client), environment triad is so interlinked that you actually can't just think about competence or competencies. ... They're not just a list of tasks or skills that you can tick off on a list, it's actually how those three things come together. ... It's the holistic stuff but it's something about the levels at which they can do that and I guess it varies then according to the amount of experience and you become more skilful and therefore more competent when you have more experience and are more intuitive. ... (There are) people who could come in and actually do all the bits and pieces but there were others who could come in and do that but who pulled it together and it's the way in which they interacted with people, that they actually care, there's something in this whole essence of (the profession) which is about communicating and interacting with people that is quite different, and it comes back to your attitudes, your values, your beliefs.

(Profession E, a second view)

(Competence) is essentially the ability to perform a particular job or task... at a level which meets the expectation of the profession. I know that is a fairly nebulous sort of description but the profession expects a fellow professional to perform in a certain manner, with ethics, to apply knowledge effectively, be able to do it timely and if I'm allowed to use the word, competently. A standard has been set. We are trying to describe that particular standard, so it is really peer expectation. That already existed, but is wasn't described. (Profession F)

4.7.2 The variation in understanding of the concept of competence reflects reports in the literature discussed in sections 3.1 and 3.2 of this Report. The attempts to express competence in terms of the professional's understanding of his or her role is reminiscent of Sandberg's interpretation of competence as 'intentional achievement' (Sandberg, 1991)
4.8 Benefits of the standards

4.8.1 Interviewees described a whole range of benefits of the development of standards which mirrored the reasons that they had given for engaging in the projects in the first place (see section 4.5 above on 'Motivation to develop competency-based standards and intended use'). The benefits anticipated are largely concerned with assisting development within the profession.

I think that the whole process is part of a fad that is being pushed and there are some benefits to be gained from participation but in ten years time I don't believe that we will be talking about competencies.... I see them as being used as 'where are you going for your course?' ... but that is it. The most useful part of all of this competency process it seems to me is for identifying the competencies for the different levels for pay scales in particular areas. .... This is something that the Government wants us to do and we are doing this and we see it as much more useful for the profession. (Profession A)

(Boards) also have a disciplinary function... ... (They) may place (former practitioners) for assessment so they can get back on the register or demonstrate their competence for whatever reason. ... We say to the (assessors in the workplace) that these people must be assessed by their competencies and they actually give us very positive feedback about them and we take them through the cues that have been identified ... which are not minimal but ... it gives them some guidelines and they ... appeared very comfortable with it. However, it is going to be a big task and there is a financial implication. (Profession E)

In fact (it used to be that) if you had something that wasn't measurable then you couldn't possibly use it. So they tend to be a bit black and white, they swing from one end to the other and I think they're now being helped to come back to a point, to saying that the expert(s) or the experienced teachers or whatever, have to be able to trust their professional judgement, because that's what's called on. What the report refers to is this tacit knowledge and how you ... draw it out. That's one of the most critical things and it's actually helping people to feel comfortable about doing that. (Profession E, a second view)

The purpose as far as the (professional body) is concerned is to give us some basis on which to build our membership criteria, professional development and accreditation. Now, membership of the (professional body) and accreditation will be two different things. You could probably become a member of the (professional body), but to be accredited as a practicing (professional) in any number of specialisations you want, you would have to demonstrate competency. (Profession F)

I think just the fact ... that we are talking about standards development is really making people at lot more aware that there needs to be a certain professional standard acceptable and if you just have a debate about performing at a particular standard it is going to generate a lot of improvement. Some of the main advantages,(include) the improved mobility by having national standards which are recognised by all the various sectors. That improved mobility is going to increase competition for jobs and it is going to broaden the perspective. We are talking about the profession being a system, but within that system we expect to upgrade within very narrow confines and it is important that they understand what is going on with the rest of the system. The identification of career paths (is just beginning). That is a great start for professional development. (Profession F, a second view)

The standards are the first public document that say what (members of this (profession) do. There are other documents that say a bit about what they do in particular roles, but this is the first public document that sets clearly what they do in the workplace in a broad range of

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occupations and the standard of performance that is required. And I think over all that it is to
the benefit of the profession for people ... to understand what the profession is about.
(Profession H)

The standards at the moment have sought to describe what goes on at the entry level. We
have made provision for additional units of competency in the standards which could cater
for higher levels or different branches or what ever. Now at the moment the profession really
hasn't identified its branches and levels systematically. There are recognised branches in
certain levels but ... there has been no systematic examination of that. Well I think now the
standards at entry level provide a fundamental framework from which you could (develop)
the structure of the profession (and) a more targeted professional education program.
(Profession H, a second view)

4.9 Entry level

4.9.1 If there was one issue which caused a great deal of discussion it was the matter of
entry level. The competency-based standards were intended to be applied at the
entry level of the profession and it was left to the project teams to define that entry
level. This request by NOOSR was interpreted by the professional groups in two
different ways.

4.9.2 First interpretation of entry level The first view was that entry level related to
the stage at which the individual became registered as a professional or was
admitted to the professional organisation or first became employed in the
profession.

4.9.3 Thus for some, the entry level might be described as the point at which full
membership of the professional organisation could be achieved. This might be
currently after attainment of an accredited undergraduate degree and a specified
period of supervised work experience - perhaps a three year degree and three years
in the workplace (3+3 approach). If this interpretation is made, the project has the
task of defining competency-based standards that allow judgements to be made
about individuals seeking full membership that are equivalent to the 3+3 approach
but performance related and independent of particular periods of time spent in
different contexts.

4.9.4 For others, it might be that the entry level is equivalent to that of a graduate first
seeking employment in the profession. In this case the task is to define competency
standards that reflect that level of professional performance.
This variation in perception of what constitutes entry level is shown in the following excerpts

Entry level means people who have graduated from the course and are now entering the profession. I don't see the need, if the programmes are such that they are reasonably equivalent, ... for there to be a national exam or something like that. I don't see that as being necessary.  

(Profession A)

Where we start is what we call novice ... that is, leaving universities with no experience but having the potentiality to move through other stages as you take on more professional post graduate programs and experience. ... One of the problems that we have got is this level. Right. What is the professional entry level because you wouldn't expect universities to all put them out the same.  

(Profession C)

Entry level in our case is relatively simple in concept but rather more difficult to define, but we have ended up by saying that the entry level of the profession is what you would expect a new Australian graduate to encounter in the first year of practice. That is a sort of workable definition because ... people can work at the entry level of the profession and not be new graduates. Entry level ... is an unfortunate term. I have distinguished entry level as some feature of the profession distinct from the behaviour of an individual who might enter the profession at a variety of levels in various cases. Given that most people enter our profession as new graduates from an Australian university entry level is not quite such a misnomer as it could be. ... I could contemplate (a level of full membership that is fact a university degree plus a year's supervised experience but it is) something that the profession really doesn't want to entertain at the moment. One of the major reasons is that it is a small profession and it is far flung and there is simply not the infrastructure in the profession to give organised systematic postgraduate training that would both be effective and equitable.  

(Profession H)

Entry level to the profession was considered to mean when it is generally agreed that one can act independently which is on the basis of the four plus two, that is, on the basis of six years. Now it is the case that one can enter the workplace ... at the end of four years, but entry level into the profession was considered to be independent activity in the profession. The (professional association) followed the four plus two rule for membership. Most of the registration boards also follow that four plus two rule, so it was at the end of six year education and training occurring on the basis of four years academic training plus two year supervised experience in the work place. ... The reaction from the NOOSR representative is that it is up to the profession to define. I think in the very early days, ... it was then the case that they were looking at the end of four years, but I think that that is no longer the case.  

(Profession I)

The following extract of a question posed in one interview and the relevant responses demonstrates the difficulty concerned with entry level being directly upon graduation.

In some fields, registration is in fact after two years of practice and so (if competency standards are intended to relate to that process) the implications for the university programs are quite different from those that talk about standards on graduation. In the current context you're talking about expecting a development in the graduate's competency level in the first six months. The question is whether you want that learning curve to go back into the university programme or whether you see actual registration of highly competent (professionals) is something that happens after a certain period of work experience. ... I think the assumption has been made generally - 'We're talking about, in a sense, experts on January the first, who weren't experts in November, and you're saying that's not so. I think we need to get our way of talking about it straight, otherwise we're going to have lots of recriminations and I think it's the reason why many Vice-Chancellors are ... fearful.  

(John Bowden, interview with Profession E)
(Competency-based standards represent) the expectations of an employer ...of beginning level practice. I think that these ought to be able to be applied at the point of (registration which is) ... at the end of the education program. On graduation, they should be able to demonstrate ... those to be given registration but it's the (level of sophistication). What you find is that, depending on the individual, for three to six months they are on that very steep learning curve. ... The ideal is that they should be able to demonstrate them in December when they leave the university. You actually need to look at whether that's realistic to be able to achieve it in the time because university education is also about laying down the educational foundation on which to build future practice and it's the training in the intellectual mind.

(Profession E)

I have no doubt that on graduation that they can demonstrate these competencies but ... it's the cues that change as they proceed along that steep curve, that learning curve. What I think the work that we probably need to do is "What are the critical cues that we expect on registration?" ... What I'm hoping that will happen is that as the Higher Education sector feel more comfortable with this notion of competencies, that they will in fact work more with the assessment processes that have been developed. As I said we are in this period of transition, if we come in boots and all, it would just be useless, so it's a matter of trying to get people to feel comfortable working with them. (Profession E, a second view)

4.9.7 Of course there are further problems when members of the group doing the study don't share the same view about the level that should be focussed on.

One of the things about this study that is a little tricky is that there are three or four association groups involved, and yet what we really should be dealing with are occupational standards, not association standards. I'm trying to keep that as a clear distinction so that the work people do is independent of what each body will decide they will want at point of entry. ... I think we are focusing at the level of what I've called a competent practitioner. ... (One society) wants the novice leaving university to be the focus of this study. So does NOOSR. ... We are willing to accept the (first society's) point of view because they wouldn't go into this study unless we did that. So we are all saying that the novice is straight out of university (and) that is the level that we are contracted to focus on. But I don't think practically that you can do a study like that. That has always been my problem. (Profession C)

4.9.8 Second interpretation of entry level The second interpretation was that the standards were to be universal statements about the competencies expected of professionals in the field - competencies which could be seen to apply in various ways across a range of levels. Entry level could be defined in whatever way the professional group preferred and performance on the competencies related to that level determined. It was felt by those who viewed entry level in this way that they were being true to the theory underlying the competency approach.

Let's go at it another way. One of things to do with this competency is that, whether a person is a graduate or whether they have just been admitted to the profession, the expectation is that the type of work people are doing then and there at each of those stages is not what we want to judge them on. Because what we want to judge people on is their developmental capacity. ... What we want is people who have the capacity to take on board the full spectrum of professional responsibilities in a defined sphere of the profession and so no matter which way we go, what we are looking for at that point is people with those developmental capacities. And the only way you can get a hint of what those developmental capacities are is by coming at the other end, saying where do we expect people to go. That is why I think (you want professionals at all levels to be competent). ... A practitioner might have moved a longer way

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but we still expect the novice ... to be able to take on board the full spectrum of what a profession has to offer. And if we start to focus on entry level tasks then we miss the whole point of the exercise. And that is why I’d prefer ... not ... to define that point. (Profession C)

4.10 Implications for higher education

4.10.1 The implications for higher education identified by the professional groups interviewed are varied but not overwhelming in number. Data presented in previous sections demonstrate the importance placed by professional groups on the value of the standards for the profession itself. In a sense, the professional groups are largely satisfied with what is happening in the universities, at least partially through their influence. When they are looking at competency-based standards they have their backs to the universities as they ponder the future of graduates with respect to the standards.

4.10.2 Of course, those interviewed did see some implications for universities of the development of competency-based standards. However, most indicated that they saw the changes coming about by evolution rather than revolution and they saw the changes as shifts in and modifications to existing university courses rather than radical changes. The implications identified by the professional groups include:

(a) The standards will provide a framework for undergraduate course objectives to be articulated in a new, more accessible language;

(b) Need for universities to provide more general courses which don’t attempt to include all the technical skills identified as being characteristic of the competent professional;

(c) Further, the standards will help define the educational needs of professionals in ways that should enable identification of the university or the profession itself as the better provider of a particular educational programme, with a balance between first degree curriculum and continuing education opportunities as the outcome;

(d) Need to consider university autonomy vis a vis the profession, and for effects on university curricula to be implicit, using existing frameworks;

(e) An opportunity to make potential students, as well as those studying in the undergraduate programme, more aware of the work of the professional.

4.10.3 A reading of the following extensive quotes from the interviews provides a thorough understanding of the attitudes of the professional groups on these matters.
We are within our own school looking at the competencies ... in terms of are these the competencies of every practitioner ... and do they relate to what we teach and do we want to express what we teach in terms of competencies? ... We don't have any reason to suppose that what we are doing is not good but would it be made better and would it be better for student learning if we expressed it in a different way. (Profession A)

It (will be) possible to build on the competencies defined at entry level to develop a series of statements about the competencies required at various levels within the profession, thus opening up the prospects of a career path tied to performance. It will be across various levels. ... It won't define them by levels within the scope of the study but what it will say is that a career moves from novice to expert and it may move across the range of specialist fields. The (critical) incident studies will give us a little snapshot of what people at different levels are doing. ... Potentially that is a way of banding people say who are ... three years out and admitted to the professional bodies, this is what they do. And then people who are five years further on, this is what they do. And then people who are further on again, this is what they do. So we can start to conceive of career hierarchies in ways that are not time related or not organisational hierarchy related or seniority related. Potentially you can define career progression in terms of competence rather that in other ways. What it will do is set up a (more productive) framework for discourse. Instead of us saying (the universities) are not delivering or that is going to come later, we can start to debate about where things get appropriately dealt with. And it also opens up the whole spectrum of continuing education. (Profession C)

The spectrum of capacities that are called upon from leading edge professionals, which is what we want our university graduates to become, is far more extensive that any university can produce. What it will do is set some sights that in my view are far ahead of the game. What (the professional bodies) want is the people who have got the breadth of capacity to develop and that is what universities should be about. And if we are deficient it is because we are not producing people with sufficient breadth and intellectual capacity. Not capacity so much but in terms of the skill and the exposures that they have had to ranges of material and ideas. That is where the problem is and what I suspect that this particular study will do is just expose that. People will look at it and say that if that's what we are wanting our graduates to do then we have to start making some choices (in universities) about whether we focus on routines or we focus on developing perspectives that are broad. We focus on what I call here disciplinary skills, we focus on giving people abilities to understand the way in which knowledge is produced and is transformed, the locations where it comes from, how knowledge is produced through political activity or public comment or research processes and how the different sort of knowledge come. And these are the things that I think the professionals I interact with want. That is what they exhibit. (Profession C, a second view)

You need to treat them as guidelines rather than as prescription. ... I think you're going to find much more teaching actually occurring out in the practice field rather than in the classroom ... so that you're actually enhancing the whole teaching/learning process. I think that it will have an impact on curricula. ... A number of the (university faculties) have actually taken this very much as a framework in terms of actually using it for their curriculum development; some others (have) just got it in their appendix and they've acknowledged it but in fact it hasn't had much of an effect, but I think as we educate people in assessment and start to give them the skills, we're starting to see people, not only in (universities but in the workplace) doing assessment at various levels, starting to use this framework because they're finding it useful so I just think it will ultimately permeate in terms of the way people think and the way people teach and so on. (Profession E)

We want (the standards) to influence what the professional does. It is the profession, a lot of whom are in the universities and in government saying that, OK, these are the standards that have been developed by the profession; we should use them and they should be the benchmark as to what we do. Now that is very different from us walking in and saying to universities you will do this. We are not going to be accrediting any graduates of any university automatically; we will accredit them on an assessment conducted by the (professional body). Now if (a particular) university decides that they are not going to put any management in there at all and when it comes to assessing that particular unit of
competency, their graduates will not be accredited as members of the (professional body). (We will say that) you can become associate members, that we will provide training for them in the management area. We don't believe that all these standards or all these competencies should be taught by a university. We believe a lot of them will be acquired afterwards. (Profession F)

As far as higher education goes there are several benefits. One is a guide to prospective students. At the moment students come to the profession for all sorts of reasons and to be able to look at a set of competency standards and learn from that what it is that will be expected of them, in what way the training will be orientated ... helps students decide whether indeed they do want to go through that. ... It also addresses the issue of the balance between undergraduate and postgraduate education. We can't go on stuffing more and more into undergraduate curricula just because there is a knowledge expansion going on. Some of that knowledge probably is postgraduate. Some of the competencies one might hope to develop more fully are postgraduate exercises, I suspect. If you have a clear cut competency structure that talks a bit about the entry level of the profession, that lends focus to a discussion about what really can properly be established in an undergraduate curriculum. And what might properly be a postgraduate initiative provided either by the profession or by the universities. It also provides within universities an opportunity for competency standards to provide a focus for discussion about what is the nature of the work that the graduates do for which they are preparing. In universities where there will be a full range of staff teaching professional undergraduates ... and I think the competency standards are a very valuable basis for those people to get an understanding of what goes on in the workplace. It is not a suggestion that that is the only orientation of the undergraduate program but it should be an important orientation. We are not trying to write a curriculum document. We are writing a description of what goes on in the workplace and the standard performance required. We have in our standards a page that sets out in general terms the sort of knowledge and skills that we believe (underline) professional performance but they are in very broad terms. We have actively avoided a curriculum based document. (Profession H)

(What I anticipate being changed is) the focus of the curriculum - a more flexible outcome orientated approach to curricular design, a community and higher education sector more informed about what goes on in the workplace, a tangible point of discussion between the profession and the providers of education and other interested parties, including the community that both groups are supposed to be serving. Long term plans. I mean one can look at the competency standards for our profession at the entry level at the moment even though they are draft and will always be draft in a sense. ... If we want to meet what we perceive to be a change in the profession in the next five to ten years let's start to think about what other units of competency really would serve that and how we could provide that training, be it within higher education or by the profession. (Profession H, a second view)

The procedures for accreditation of (this profession's) courses have been tried and reasonably true although they are tinkered with routinely every few years because of changes in higher education, over the last twenty years or so. My preference would be if competency standards are developed for (the profession) and if they are acceptable to the (professional association) and to higher education and to registration boards and to the (national council) and all that, that is filtered through the existing accreditation process which is tried and true in terms of the procedures. If that simply involves a clearer articulation of some of the objectives and a more explicit linking of some of those objectives with events in the work place, I have no problems with that. I think, if there is a perceived imposition of those things, I think there are going to be major problems. (Profession I)

4.10.4 There was a view expressed which fits closely to the criticism of competency-based standards as being inherently conservative. That is they tend to teach technology which will be soon outdated.

I think however it is also the case that the workplace doesn't take as full advantage of the current education and training that is provided as it could, and I think if there is some change
that is needed, we really should be looking at changing the workplace to maximise the use of the skills that professionals have rather than artificially constraining the professions to fit currently existing workplaces that given technological advances are going to be out of date in five years time. I would feel much more comfortable with the competency standards movement politically and industrially if I saw a similar movement going on asking workplaces to work out how to maximise the use of people who come into them, and I don't see that as happening. I think it is too procrustean in its approach. ... Looking at the various reports, and looking at Carmichael's comments on higher education, I would need to be convinced that it was more even handed than what it appears to be. 

(Profession I)

4.10.5 Another issue that emerged from discussions with the project groups in the professions was whether or not all the competencies based on performance could be expected to be attained outside the workforce anyway. In most cases this issue was also linked to the question of entry level.

The basic position that I've come from is that we all learn through experience. Some experiences are in the work place, some are through interaction with peers outside the work place and some are in formal education sectors; they all add different components into ourselves as functioning professionals. And so one of the things that you end up starting to say is, well we have got six years to train professionals now and in that six years we can start to blend in different sorts of experiences that will give people a chance to exercise different capacities. So you don't have to do everything in university because you have got three years later where they are going to be having experiences and they are going to be interacting with professional peers. And so over the six years we have to have enough diversity of experience and a framework for people to build what they need. ... (This means that) universities need to be looking at the period of three years that they are interacting with the students, with the six year mark in mind. 

(Profession C)

4.11 Assessment of competencies

4.11.1 The issue of assessment was discussed in section 2.5 and 3.6 above. It was suggested that many initiatives in education stand or fall on the strength of their accompanying assessment procedures and, more particularly, on the feasibility, credibility and reliability of those procedures. We asked professional groups to express their views about the nature of the assessment processes appropriate for measuring competencies and about their cost by getting their reaction to a statement such as the following.

the assessment at university level is by sampling from the experience they have had, and then assessing their competence in those areas sampled, the assumption being if you sample properly that they'll be competent in all the areas that they've dealt with in the four years or three years. Whereas if you come along with your competencies for someone who hasn't had the four years university experience, can you afford to sample when you assess them or do you in fact assess everything?

(John Bowden in interview with Profession E)

4.11.2 Some of their responses to this statement are shown in the following quotations.
I would see us developing a self assessment process for a start so you would do a run through of a self assessment and if you thought 'my God I can't possibly do that and there is no way that they would find that I was competent of doing that' then you would own up to that and then you would say 'I really need to do a re-entry course' (All the universities) run re-entry courses and the Association offers education programmes and up-grades ... and most of the courses have an assessment mode at the end of them. ... I would see peer assessment as being extremely valuable. ... More senior staff ... would be able to assess younger staff within their speciality areas so there are probably a whole lot of things you could do (that are not as expensive as) sending around the policeman.

(We need to) put in a system that either catches them as they leave university or when they enter the workplace. A lot of assessment (happens) when people go into the workplace. There are job interviews and a whole lot of assessment out there already that we have got to tap into somehow, and collate the information. There is assessment going on when they leave university, ... when they enter the workplace, and we have got to get in on either of those two areas.

(Profession A)

(Profession F)

There are whole units of competency that are probably not assessed at all (at the moment) Now we have to decide ... the type of assessment and its validity... and we have also by way of range indicators given candidates a much clearer indication of the knowledge base that will be necessary. ... There hasn't been a specification of the types of situations and settings that people encounter in practice before. ... We have tried to make some sort of statement about that by way of range indicators in standards; at the same time we accept that there is such a diversity of what (professionals) do. They equally well have to be able to transfer their abilities and be analytical and solve problems in a whole variety of contexts and we attach just as much importance to that. That probably spins back more to educators than it does to the boards for instance but we will also have to get some means of assessment, if we can, of those sorts of more generic abilities.

(Profession H)

When I go and speak to universities, they say ' but you can't measure this sort of stuff, these things you can't measure' and I say you have been measuring them for years. You promote people, you interview them, you measure them. We have been measuring that sort of stuff for a long time. There seems to be this perception that we are going to demand that everything is measured, but it is not. The expectation of the profession is still going to play a pretty major role. There is going to be a lot of things that we can measure. (Profession J)

4.12 Articulation, credit transfer and recognition of prior learning

4.12.1 It is often claimed that the development of competency-based standards will assist in articulating within and between professional education programmes by taking account of learning gained both formally and informally. These views were discussed in section 3.10 above. Few of the professional groups we interviewed had comprehensive plans for implementation of such procedures and most saw it applying to overseas skills recognition rather than anything else.

The other thing to spring from this is the competency standards now give an established framework to recognise prior learning that doesn't exist at the moment. One of the difficulties that has always been faced by the National Examination is trying to evaluate qualifications from another country and how they stand against ours. Sometimes that is difficult to do because you don't have the content material, other times it is even more difficult to do because you don't know anything about the course. Historically people have from time to time visited countries and there is a list of countries where we know or did know something about the nature of the training process, and especially the performance-based
aspect of it. But that is hard to keep up to date and now the standards, I think, will give us a much better way of an established framework where you can start looking at peoples' background and they can provide evidence against that framework. (Profession H)

(If you come along to apply for membership based on experience), it depends what you come along to us with. There has got to be some recognition of prior learning, obviously. ... We might ask you to write things out. There may be an oral assessment capacity. We ask another level 3 person, a consultant for instance, to come out to the (workplace) and to spend a day with you, and that is a very real possibility because I see (such) consultants as being one group that is going to play a fairly large role in this as assessors. We might even ask you to answer a whole lot of questions on a computer terminal. ... Assessment of competence will probably, as I see it, be tied in to the groups that are doing those sort of assessments already. The academic institutions (too). (Profession J)

4.12.2 The last quotation from Profession J was unusual to the extent that the interviewee believed that the profession would use the standards to test applicants for membership on the basis of the learning they had acquired through experience, even if they had no qualifications. In order to test whether the various professional organisations were sympathetic to the notion, a question was put to each of them in the following form.

If these competencies are so good why can't I be assessed for registration. I have spent five years in a third world country working with professional staff as a voluntary worker in a coastal city and then gone to a regional area in this country and spent a lot of time on my own, with professionals occasionally coming in to check. I have worked independently with the local population. I have remained there and taken on roles that professionals need to do. I think I have all the basic competencies required at entry level? Would you look at my competencies and consider me for entry to the profession, for registration?

4.12.3 The responses were generally in the negative and of the kind shown below.

We would look at you certainly but you would have to be registrable. I would encourage you to come into some basic course ... and you may get some exemption in some areas. ... The Acts would have to be changed (for you to be registered without having the qualifications) even if you did meet (the competency standards). Now that would meet with all sorts of fire and ferocity from universities and it would also open a flood gate ... You wouldn't fit ... because you don't have a basic qualification ... I think it would be counter productive to enable people to just meet competencies. I don't think you would because in the assessment of the competencies we would be looking for the information that tells us that you understand ... and you can interpret and you can problem solve and you can do all sorts of things that someone with your sort of experience probably would not be able to do. I would doubt that you would be able to do it and, if you could do all that, then you should be able to come into a course and get the degree. (Profession A)

4.12.4 A further point was made that the process of dealing with all such applicants would be enormously expensive. 'Who will pay?' was the question asked.

4.12.5 The problem of the 'clever actor' was discussed in paragraph 3.3.4 above, the person who can demonstrate good performance without underlying knowledge and understanding. This is linked to the 'voluntary worker' scenario described in
paragraph 4.12.2 above. Can standards and their assessment tools be developed that would be very comprehensive enough to deal with such cases without being too expensive to administer and without impinging on the role of the universities? No satisfactory solutions were forthcoming from the professions on these matters.

4.13 What is a competency-based approach to higher education?

4.13.1 The title of this project includes the words 'a competency-based approach to education and training'. Just what is a competency-based approach to university education. The discussion in the literature of a competency-based approach to higher education has been elaborated in sections 3.8 and 3.9 above.

4.13.2 We asked the professional groups we interviewed for their interpretation of what a competency-based approach to higher education would be like. The general theme was that it would not be a great deal different from what is happening in universities at the moment, except that there would be a greater consideration on what the professional does in the workplace. No comprehensive alternative university programme was articulated.

If you look at the way in which we express what the students need to know we express them in terms of behavioural objectives and a competency is a different way of writing much the same sort of thing and it may in fact express it in terms that the student understands better. ... The behavioural objective may be better from the teacher's point of view (but) the competency may tell the learner more. That is what we are looking at at the moment. Is that a worthwhile thing to do? (Profession A)

I'd argue that (a competency-based education program) wouldn't be much different at all. Because once again, if you say that it is the mix of professional interaction and experience and education that go to make a practitioner then you'd start to deal with the formal educational component by itself with some reference to what is happening elsewhere. (Profession C)

I would see a much greater focus on preceptorship, so that they're working with expert role models in the (workplace), so I'd see probably and I suppose in some ways, a bit like the old articulated clerk, the lawyers, but I would see a very, much more structured programme with preceptors so that there would be a much better integration between the (practising professionals) and the academics, there's always been tensions there. (Profession E)

It is really not clear to me in the current climate, politically and educationally, whether what we are talking about is a major shift in how we think about education and training or really it is simply a shift in the way in which traditional goals are placed in politically popular jargon. We have been here before, well maybe Australia hasn't been here before, but internationally we have been here before and I think that those are issues that are unresolved. I think that in a sense one of the difficulties with the approach that has been placed on the professions at the moment is that if one was very cynical about this you could fairly easily turn current existing things into popular jargon and say there it is, and I could name some professions who might think of doing that. ...Well I won't. (Profession I)
The biggest change that I would see is that there would be a greater reflection in the curricula of what is happening in the real world, and I make no bones about the fact that I think universities have been isolated. There has been a proliferation of new degree courses in the field. Instead of modifying the courses as the requirements of the community and the profession have changed, there has been this sort of lurch to a new course. So the biggest change that I would see would be that the universities would take heed, having this process of the people who are out there working graduates of their own universities coming together and saying right these are the changes, this is what is required. They would modify the curricula far more frequently to reflect what is happening out in the workplace. As far as the method of teaching is concerned, I would see ... a greater recognition that universities are training people to perform.

(Professional J)

4.14 Difficulties in undertaking competency standards development projects

4.14.1 A number of the professional groups we interviewed expressed some difficulties, both technical and political, in undertaking some aspects of their projects. Although the difficulties have rarely prevented professional groups from pursuing their goals, it is worth noting what some of these difficulties are.

I have been frustrated to some extent by changes in direction which were not advised to us. ... When we were doing nominal group process NOOSR arrived ... and said 'all that you have done so far is rubbish' or words to that effect ... There was some backing down from that particular position which said we were not allowed to talk about knowledge at all. ... Since then really we have had nothing but accolades for the way we are doing things because we have pressed on in the way we saw fit and we did change the way we presented things because we could see that it was reasonable to do that. In fact when we presented the draft, all we did was change the headings so where we had knowledge, skills, and affective attitudes and attributes we whited those out and didn't really change much but because those headings weren't there they were comfortable with it. (Their problem with knowledge was that 'you don't really need knowledge; you have to express everything as a skill and so if anything it would be implicit. ... Now we build it into everything so we not only have our own separate bits on knowledge but we have knowledge everywhere else as well. Part of their problem was that they made a wrong assumption about professional practice. They presumed that all you needed to do was to look at the way people executed tasks and that would then be sufficient and really the difference between a monkey and a (professional) is that the (professionals are) thinking about what they are doing and the monkey is actually doing it quite well. ... The whole point (is) that was being driven by people who really didn't understand what they were saying and they said one thing but that wasn't what they meant and when people who had some idea of working at higher levels actually got into the process they could see that what you were saying really didn't cover what you wanted. ... It was a naive confrontation approach in the beginning because at the first meeting of the NOOSR group encouraging people to go into competencies. The NTB presentation was so confrontationist saying you will do this, there is no such thing as knowledge, there is no such thing as education, it is all training. Forget it and get on and do it or you are dead. And that was like a red rag to a lot of bulls. I am rather pleased in fact that NOOSR is involved because if NOOSR were not involved then the National Training Board would be. NOOSR at least has been able to represent those seven and eight areas to the NTB and say back off and cool down, we will handle this. It seems to me that they have been reasonable negotiators and have changed attitudes.

(Professional A)

I've got a lot of problems with the NTB/NOOSR framework, which may be me or may be them.... for example getting (at the) complexities of professional work and that sort of stuff. But I think the general problem that I have is that the same points that the NTB is making in
its suggestion that the guidelines be redrafted. The adequacy of description of levels is a real problem - what entry level is . . . . The format for the standards is a problem particularly as you pick up attributes and so on. We will show those in basically task statements. It is not obvious to me how that is done and so I have tended to break them out, and so we have got the tasks running down one side and the attributes running down the other. And the third major area is . . . the context (which) is critical. Context is of equal importance to task . . . the way the NTB framework is put out it doesn't really highlight that. So what I've tended to do is break that out as a third dimension and so have task, context and attributes as three things that develop separately. . . . How do you put it all together again, what the relationship of each one is, . . . without losing something. You can get those attributes in your statements of tasks, or units of competence, by implication. Well why go by implication? The other problem is . . . how to achieve full and holistic expressions of competency rather than say task 1.1.1.1 can mix with attribute 2.2.2.2 or whatever. I think it becomes very hard to sustain and probably misses the whole point. I'm at the moment tempted to keep the thing as a big picture. The standards (won't retain a listing of attributes) if they are in the NTB format. I'd like to have them there. We have generated them. A lot of the people here find them the most interesting, because they can relate more easily to them. (Profession C)

The concern is that industry's requirements are static and what it needs now is not what it needs five years down the track, ten years down the track and so a lot of the stuff that's taught in something like an undergraduate professional course would be seen by industry as unnecessary. . . . It assumes that this sort of knowledge is finite. . . . Now okay that's to some extent recognised in the move away from the sort of straight tasks assessment into something that's sort of higher order but the concern about that is that you stay and talk about things on a level that you're meant to be able to evaluate. And yet you know everybody accepts that it's very difficult to evaluate these things, that you have to assume them or infer them by the fact that they've done this program that gives them exposure to all this sort of stuff and that's in a sense what we're doing now. Again if you look at the NTB structure . . . the thing that's staggering is that here we're talking about these processes designed to develop training in Australia and yet the actual Boards themselves whether they're the ITABs or the NTB itself have no training providers on them. I mean this seems ridiculous and when you talk to people about this the line you get is that 'oh yes that's because the training providers have driven the debate up till now and we now want to take control of it'. But I mean these are the guys that have got the actual expertise in the area, to dismiss them out of the process means that you've got this sort of Mickey Mouse sort of amateurish type approach. Having said all of that I think there's general recognition . . . that in many of the professions when we had this (NOOSR) conference earlier this year, we actually sat down and listened to people who have been running professional courses for years who had never thought about the content of their programs versus the outcome. (Profession D)

One of the key things that also worries people is that this system seems to suggest that you can have one way of doing it you know that you can up with a sort of model that will be applicable (everywhere) and again the feeling in the educational environment is that what we should actually be encouraging is the reverse. We should be encouraging the diversity, encouraging people to try things in a different way against the general framework that we've got agreement on and if they can come up with some totally whizzo way of doing this thing all the better for it. Having two universities in the same town with different approaches has proven to be very, very creative and very positive. If you said 'no you guys are going to do it this way and you guys are going to do it the same way' that kills off that kind of diversity and . . . development and that's something we can ill afford. (Profession D)

What the council wanted to do (was) to, first of all to make contact with the key people universities who have got the first rate expertise in this area. Secondly to tap in and find out what assessment methodologies and what devices are being used particularly those that are innovative (and) that have actually overcome problems. So we actually have a body of data that we can disseminate around the rest of the country and thirdly is to actually build on the work that the (special conference) did in actually getting people together and getting a forum going with expertise at a sufficiently high level that can actually turn around to people like DEET or whoever and say 'listen you know here's all the evidence we've got and what you're doing is either good, positive or not good and here's the material that comes from it'. But not only that I mean in the end even if it makes for example assessment methodology in
Australian professional faculties better, even if DEET and this whole exercise collapses in a heap with a change of government or whatever, at least you know the positive elements of developing assessment methodologies, thinking about competency, thinking about relating the outcomes to the educational input, if that can be strengthened in some way. So for example the universities that are flush with resources (can use) their expertise and development … to assist people (with universities that) are not flush with resources. That's something that we can do that's positive in this exercise, you know. But the stage one, stage two stuff you know that they're talking about in some of the professions that NOOSR keeps talking about, we don't see the need to go back and have to do all of that when we've got this, we've got all the American experience, we've got all the European experience. To us that's a waste of resource.  
(Profession D)

We have had a really good working relationship with NOOSR. There is only one area of tension and that is that National Training Board have appointed (a particular organisation) as a competency standards body, and there is no way that the profession is going to submit its standards for their approval. That is the one area where NOOSR and the National Training Board have got a fairly negative tension going. Only the NTB can appoint competency standards bodies and they excluded the profession but to us it is secondary. I mean really whether they recognise the standards or not, they are secondary. We want to use them.  
(Profession F)

I think that when you sit down and read the various red and white booklets that NOOSR produces there are massive conceptual and practical inconsistencies in the material ...I think that all professions need to define themselves and their goals and I think that that is a continuous process ... in any profession. ... (However) there is a difference between being an ill defined profession and a multiply-defined profession. ... I think that NOOSR has the blinkers on in many professions, so I think that if there is one thing that I am working for ... it is too ensure the multiplicity of definition of the profession. My reaction partly is because I think that in the process we are at risk (of) becoming too narrowly defined. ... If we fall into that trap then I think that this country is not going to have the ... internationally recognised benefits that we need to maintain and indeed foster. ... There is sufficient diversity in what people do to demand that that be addressed in developing standards. I just wonder whether there are any professions where you can say the simplistic narrow definition and approach is ok. I doubt that it is so.  
(Profession I)
CHAPTER FIVE

SURVEYS OF UNIVERSITY ACADEMICS

5.1 Methodology

5.1.1 The procedures used to sample the views of university academics were described in detail in Chapter One. In summary, 187 heads of department and course coordinators were sent an initial survey which asked their opinions on a range of issues relevant to this study. The questions carefully avoided leading respondents on the matter of competency-based standards and competency-based approaches to education and training. Results from the pilot interviews and pilot questionnaires that we had trialed indicated that the majority of academic staff have little or no knowledge about these issues. We wanted both to test this hypothesis and to ascertain academics' views on a variety of contentious issues currently under debate.

5.1.2 We believed it would be important not to provide respondents with details about these issues until we had evidence on which we could judge their level of knowledge about relevant topics. We found this to be a successful strategy in pilot interviews and, to reproduce it in the survey, we decided to use two separate questionnaires, the second being sent to respondents once they had returned the first completed survey. This enabled us to add a statement in the second survey which set out the history of the competency movement in Australia and to ask specific questions which themselves contained further information. The follow-up questionnaire was used to gather academics' views on issues they may not have encountered before and which couldn't be asked in the initial questionnaire.

5.1.3 Resources available for this aspect of the study were limited and we resolved to collect initial data from about 100 heads of department and course coordinators who would then be followed up with a second survey. In the first wave, 187 initial questionnaires were sent to academics in university departments throughout Australia, selected in the structured way described in Chapter One. In total, 98 questionnaires were returned. The return rate (52.4 per cent) was as anticipated and is consistent with return rates in most academic surveys (see Bowden and Anwyl, 1983).
INITIAL SURVEY

5.2 Respondents

5.2.1 The sampling process (structured by a range of criteria - described in Chapter One) involved a selection of departments, with those departments providing the name of the head or chairperson and the name of the person who was course coordinator of the major undergraduate course in the field, or equivalent. Thus there was no control over gender distribution. The fields covered were in two groups. The first are those disciplines or fields in which undergraduate study is directly linked to particular professional occupations; professional fields surveyed were accounting, architecture, engineering, nursing, teaching and veterinary science. The second group are other disciplines not directly linked to particular professions in that way; non-professional fields surveyed were art, chemistry, English, mathematics and political science. Some characteristics of the sample of respondents to the first questionnaire are as shown in Table 5.1.

Table 5.1 Respondents: Classification and Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Heads of Department (N)</th>
<th>Course Coordinators (N)</th>
<th>Other (N)</th>
<th>TOTAL (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>38</td>
<td>30</td>
<td>7</td>
<td>75</td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>16</td>
<td>1</td>
<td>23</td>
</tr>
<tr>
<td>TOTAL</td>
<td>44</td>
<td>46</td>
<td>8</td>
<td>98</td>
</tr>
</tbody>
</table>

5.2.2 The 'other' category comprises academics from departments for which there was no-one corresponding to the role of course coordinator. In these cases the questionnaire was sent to a senior academic other than the head of department.

5.2.3 In this chapter, most analyses compare the responses of the two groups, labelled professional and non-professional. In most analyses, there are few significant
differences among the disciplines comprising the professional group. Only when there are such differences are individual professional disciplines discussed.

5.3 Students' workplace experience

5.3.1 Respondents were asked the following question: 'To what extent do students gain experience in the workplace as part of the course?' The responses from academics within each field were quite consistent. In Table 5.2, the academic groupings are listed together with the percentage (in brackets) of respondents in the particular field who gave that response.

Table 5.2: Students' work experience by field

<table>
<thead>
<tr>
<th>Amount of work experience in course</th>
<th>Field (Percentage of respondents in the field in this category)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Accounting (100%) Non-professional disciplines (86%)</td>
</tr>
<tr>
<td>Less than one-quarter of the course</td>
<td>Architecture (80%) Engineering (80%) Teaching (92%) Veterinary Science (100%)</td>
</tr>
<tr>
<td>Up to one-half of the course</td>
<td>Nursing (91%)</td>
</tr>
</tbody>
</table>

5.3.2 The actual responses are without surprise and relate to what is known about these courses. The consistency in these data demonstrates two things. The first is that courses in the various professional fields throughout Australia are quite similar in the extent to which students gain experience in the workplace as part of the course. The second is as an indicator of the validity of the questionnaire.
5.3.3 In terms of the whole sample of academic respondents, the percentage in each category is given in Table 5.3 for professional fields, non-professional fields and the total sample.

Table 5.3: Students' work experience; percentages by type of course

<table>
<thead>
<tr>
<th>Amount of work experience in course</th>
<th>Profess' al (%)</th>
<th>Non-Prof (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>25</td>
<td>86</td>
<td>48</td>
</tr>
<tr>
<td>Less than one-quarter of the course</td>
<td>56</td>
<td>14</td>
<td>40</td>
</tr>
<tr>
<td>Up to one-half of the course</td>
<td>19</td>
<td>0</td>
<td>11</td>
</tr>
</tbody>
</table>

5.4 What is a competent graduate?

5.4.1 Respondents were asked the question: 'What does it mean to be a competent graduate from the course?' The responses varied considerably and Table 5.4 contains data representing the distribution across the various categories of respondents in professional fields, non-professional fields and the total sample. The categories have been placed in diminishing order of their support within the professional fields.

5.4.2 The responses within individual disciplines were well spread throughout the categories and no identifiable trends were apparent other than the global differences shown in Table 5.4. Respondents focused on sound knowledge of the theory base in the discipline, an analytical, practical problem-solving capacity, and good communication skills.

5.4.3 In general, data in the non-professional fields are similar to those in the professional fields except for the expected lack of support in non-professional fields for the category 'Has fulfilled competencies defined by the profession', a category with equal highest support among academics from professional areas. Conversely, those in the non-professional fields showed greater support for the category cluster 'Ability to exercise independent, critical thinking; develop clear arguments'. There are few other differences between the professional and non-professional areas on
this question. Of course, it is quite possible that the professional groups interpret 'competencies by that profession' to encompass the specific elements listed by the non-professional groups; they may be simply different ways of saying the same thing.

Table 5.4: Characteristics of a competent graduate

<table>
<thead>
<tr>
<th>Characteristics of competent graduate</th>
<th>Profess'\al (%)</th>
<th>Non-Prof (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sound knowledge of the theory base of the discipline</td>
<td>21</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Has fulfilled competencies defined by that profession</td>
<td>21</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>Has sound analytical, problem-solving, research and conceptual skills and the ability to apply these to practical situations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>29</td>
<td>24</td>
</tr>
<tr>
<td>Has well-developed oral, written, numeracy interpersonal and communication skills</td>
<td>11</td>
<td>22</td>
<td>17</td>
</tr>
<tr>
<td>Has developed a humanistic attitude approach and demonstrates it in a work situation</td>
<td>10</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Graduate pursues ongoing professional development and further education</td>
<td>8</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Ability to exercise independent, critical thinking; develop clear arguments; and autonomy</td>
<td>7</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Displays creativity, resourcefulness and is innovative</td>
<td>4</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

5.5 Preparation of graduates for the workplace

5.5.1 There was a question concerned with the extent to which graduates in the respondent's field are prepared for entry to the workplace. As can be seen from the data in Table 5.5, all respondents believe their graduates to be adequately prepared. No respondent said that graduates are inadequately prepared.
Table 5.5: Extent of graduates' preparation for entry to the workplace

<table>
<thead>
<tr>
<th>Extent graduates are prepared for entry to workplace</th>
<th>Profess' al (%)</th>
<th>Non-Prof (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well prepared</td>
<td>35</td>
<td>34</td>
<td>35</td>
</tr>
<tr>
<td>Reasonably prepared</td>
<td>22</td>
<td>40</td>
<td>29</td>
</tr>
<tr>
<td>Are well-prepared for trainee or beginning role but require more supervised practice before being fully professional</td>
<td>43</td>
<td>26</td>
<td>36</td>
</tr>
</tbody>
</table>

5.5.2 Two-thirds believe graduates to be well or reasonably prepared and the remaining one third see them as well-prepared for a trainee role but in need of supervised practice before being fully professional. This last category was more likely to be chosen by academics from professional fields, especially nursing, but in general the responses from all discipline areas were quite similar.

5.6 Role of professionals and employers in curriculum design

5.6.1 Respondents were asked to express their views about the involvement in the design of curricula, teaching and assessment in higher education of the following groups: practising professionals, professional associations and employers.

5.6.2 The responses did not vary significantly among the various professional groups. There was little difference between professional and non-professional disciplines. There is a tendency for respondents from non-professional areas to be more likely to say that the current involvement of such external groups is unnecessary or unwelcome, although this is a view expressed by less than ten per cent of such respondents.

5.6.3 The majority of both groups are positive about the current involvement of external groups although the support diminishes from comments on practising professionals, through those on professional associations to comments about employer groups. There is a corresponding increase in the percentages who believe such involvement should be limited to an advisory or collaborative function. As can be seen in Table 5.6, only a few respondents support increased involvement of these external groups.
Table 5.6: Views on external group involvement in course design

<table>
<thead>
<tr>
<th>Practising Professionals</th>
<th>Profess’al (%)</th>
<th>Non-Prof (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>View current involvement as unnecessary or unwelcome</td>
<td>0</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Believe involvement should be limited - only in an advisory and collaborative capacity</td>
<td>37</td>
<td>23</td>
<td>32</td>
</tr>
<tr>
<td>Positive about current involvement</td>
<td>61</td>
<td>65</td>
<td>62</td>
</tr>
<tr>
<td>Should be more involved</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professional Associations</th>
<th>Profess’al (%)</th>
<th>Non-Prof (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>View current involvement as unnecessary or unwelcome</td>
<td>0</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Believe involvement should be limited - only in an advisory and collaborative capacity</td>
<td>45</td>
<td>33</td>
<td>41</td>
</tr>
<tr>
<td>Positive about current involvement</td>
<td>53</td>
<td>56</td>
<td>54</td>
</tr>
<tr>
<td>Should be more involved</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employers</th>
<th>Profess’al (%)</th>
<th>Non-Prof (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>View current involvement as unnecessary or unwelcome</td>
<td>6</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Believe involvement should be limited - only in an advisory and collaborative capacity</td>
<td>50</td>
<td>52</td>
<td>50</td>
</tr>
<tr>
<td>Positive about current involvement</td>
<td>44</td>
<td>40</td>
<td>43</td>
</tr>
<tr>
<td>Should be more involved</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
5.6.4 There were other groups mentioned whom it was thought important for university staff to contact when designing courses. They include students, review panels from other universities, clients within professional practice, high school teachers, postgraduate students and members of the community in general.

5.7 Competency-based approach to education and training

5.7.1 The question on this topic was carefully worded. Our pilot study had told us that many academics have not read widely on this topic and would be unlikely to know much about a competency-based approach to education and training. Nevertheless we needed to find a way to ask a question on a topic about which, we hypothesised, many respondents knew little, in order to test that hypothesis. Thus the question we used, after several trials, was as follows: 'If you know something about a CBA to education and training please tell us what you think it involves? On the other hand if you know little or nothing please indicate this.'

5.7.2 As can be seen in Table 5.7, the vast majority of respondents have little more than basic knowledge about a competency-based approach to education and training. Professional groups, especially nursing and to a lesser extent architecture, have greater knowledge of it than non-professional groups. This lack of knowledge should be considered when examining academics' views of the implications for higher education of a competency-based approach to education and training.

Table 5.7: Knowledge of competency-based approach to education and training

<table>
<thead>
<tr>
<th>Knowledge level</th>
<th>Profess' al (%)</th>
<th>Non-Prof (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have no knowledge of a CBA</td>
<td>48</td>
<td>73</td>
<td>57</td>
</tr>
<tr>
<td>Have some basic knowledge</td>
<td>30</td>
<td>22</td>
<td>27</td>
</tr>
<tr>
<td>Have sound knowledge of a CBA</td>
<td>19</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Have been directly involved with profession in drafting competency standards</td>
<td>3</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>
5.8 Implications for higher education

5.8.1 Before discussing academics' views on the implications of a competency-based approach for higher education, it is pertinent to consider their experience with a CBA. Table 5.8A shows the spread of experience that respondents indicated they have had with a competency-based approach. Very few have had any experience and the only difference between the professional and non-professional groups can be ascribed to the experience of this sort of approach among academics in the nursing field.

Table 5.8A: Respondents' experience with a competency base approach

<table>
<thead>
<tr>
<th>Level of experience</th>
<th>Profess'ial (%)</th>
<th>Non-Prof (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>73</td>
<td>87</td>
<td>79</td>
</tr>
<tr>
<td>Some involvement with a CBA other than the NOOSR projects (eg. TAFE programs, curriculum development, Keller Plan)</td>
<td>11</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Have been directly involved in drafting competency standards within their profession</td>
<td>16</td>
<td>0</td>
<td>9</td>
</tr>
</tbody>
</table>

5.8.2 In a subsequent question, respondents were asked 'Given the way you understand a competency-based approach, what implications do you think it would have for higher education?' This question was deliberately general since we did not wish to lead or direct respondents. It was an open-ended question. Table 5.8B has the six most popular responses categorised in three pairs. The first pair are negative comments about the implications of a competency-based approach for higher education, the next pair represent positive implications and the third pair are descriptive and largely value-free.

5.8.3 The most popular response was a negative one concerned with a view that the goals of a competency-based approach to higher education would be too narrow and the approach mechanistic and prescriptive. This was an implication for higher education cited by more than half the respondents. The next most common
response was a positive one, that a competency-based approach may benefit higher education in clarifying intended outcomes of undergraduate programmes, particularly as related to requirements of the workplace. This implication for higher education was suggested by slightly less than one-fifth of all respondents. All other suggestions were each made only by fewer than one-tenth of respondents.

Table 5.8B: Implications for higher education

<table>
<thead>
<tr>
<th>Implications</th>
<th>Profess' al (%)</th>
<th>Non-Prof (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBA goals too narrow for higher education:</td>
<td>45</td>
<td>59</td>
<td>51</td>
</tr>
<tr>
<td>More applicable to industry and TAFE training. Little applicability to higher education. The belief is that it would devalue the goals of higher education through a mechanistic and prescriptive approach.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBA too conformist for higher education:</td>
<td>11</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Too conformist, reductionist and a threat to autonomy. It is viewed with scepticism as potentially creating uniformity and standardisation of universities at the cost of standards that seek excellence.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBA would help in defining course outcomes:</td>
<td>18</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>May be beneficial as a vehicle for identifying or clarifying the outcomes of undergraduate courses and also the skills required of graduates in the workplace.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBA would make educators more accountable:</td>
<td>9</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Accountable for how and what they teach, and the quality of their graduates.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBA will result in restructure of undergraduate courses:</td>
<td>13</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Will require the redesign of courses and restructuring of teaching and assessment methods.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBA will require new procedures and mechanisms:</td>
<td>4</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>To monitor standards, assessment methods and to assess recognition of prior learning.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
There were no significant differences between professional and non-professional groups on these issues and there were no significant differences among the various professional disciplines canvassed.

It should be emphasised that the categories of response listed in Table 5.8A came from the written answers of the academics surveyed. No suggestions were provided in the questionnaire. The majority of all respondents hold to the negative view of a competency-based approach related to perceived narrowness and prescriptiveness, irrespective of the involvement that some of their professional associations have had in NOOSR competency projects.

The results given above need to be considered in light of the relative ignorance and inexperience of academics with a competency-based approach, as discussed in section 5.7 and paragraph 5.8.1 above. The correlation between levels of knowledge and experience and comments on the implications for higher education is very low.

FOLLOW-UP SURVEY

Respondents

The 98 respondents to the first survey were sent a copy of the follow-up questionnaire, a copy of which is provided in Appendix C. A total of 60 completed follow-up questionnaires was received. This is a return rate of 61.2 per cent. Gender and classification distributions are shown in Table 5.9 (one return was unclassifiable).

Of those who completed the initial questionnaire, heads of department were more likely than course coordinators to return the follow-up questionnaire. About the same proportion of female and male respondents returned the follow-up questionnaire.
Table 5.9 Respondents to Follow-up survey: Classification and Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Heads of Department (N)</th>
<th>Course Coordinators (N)</th>
<th>TOTAL (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>28</td>
<td>20</td>
<td>48</td>
</tr>
<tr>
<td>Female</td>
<td>5</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>TOTAL</td>
<td>33</td>
<td>26</td>
<td>59</td>
</tr>
</tbody>
</table>

5.10 Role of professional competency standards in design of curricula, teaching and assessment in university courses

5.10.1 Respondents were provided with a one-page statement which gave a summary of developments to date in the area of competency-based standards in Australia (see Appendix C). Respondents were asked the following question 'Do you think that national competency standards developed within the professions in the way described above, would have a role in the design of curricula, teaching and assessment in relevant higher education courses? Please explain why/why not.'

5.10.2 Answers to this question are summarised in Table 5.10. They have been arranged in two parts. The first four categories describe the standards as enhancing the university course in some way. The last five categories represent criticisms of the standards in terms of their relationship with university courses. The vast majority of responses show a negative attitude towards the role of competency-based standards in the design of curricula, teaching and assessment in university courses.

5.10.3 Six respondents gave more than one response. Two gave two different responses describing the role of competency standards in enhancing university course design. Two others rejected the standards as too narrow but indicated they might be useful as guidelines for course development. Two others who indicated that competencies had always been taken into account also suggested that the standards could be useful as guidelines or that they relate more to the needs of the profession.
Table 5.10 Role of competency standards in design of university courses

<table>
<thead>
<tr>
<th>Categories of response</th>
<th>Percentage of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>The standards will enable courses to relate more to the needs of the profession and be more appropriate for employment</td>
<td>14</td>
</tr>
<tr>
<td>The standards could be useful as guidelines for developing curriculum and assessment</td>
<td>11</td>
</tr>
<tr>
<td>The standards will enable educators to develop clearer objectives for their courses</td>
<td>6</td>
</tr>
<tr>
<td>The standards will necessarily influence higher education if professions use the standards as the minimum requirement for graduates entering the profession</td>
<td>5</td>
</tr>
<tr>
<td>Such standards do not have a role since they are too narrow, mechanical and static. They are too prescriptive and would reduce creativity and flexibility in courses</td>
<td>17</td>
</tr>
<tr>
<td>Competencies are already taken account of, long before the NOOSR projects began</td>
<td>16</td>
</tr>
<tr>
<td>The competency standards are too work-oriented and cannot be reconciled with the goals of higher education.</td>
<td>16</td>
</tr>
<tr>
<td>Competency standards may be appropriate for some specific vocational courses but not in general education</td>
<td>13</td>
</tr>
<tr>
<td>The standards will create uniformity and standardisation of courses and therefore mediocrity</td>
<td>2</td>
</tr>
</tbody>
</table>
5.11 Effects of standards on preparation of graduates for the workplace

5.11.1 Respondents were asked the following question: 'If a competency-based approach (CBA) were implemented in higher education, what difference do you think it would make as to whether graduates are fully prepared for the workplace?' Answers to this question are summarised in Table 5.11.

Table 5.11 Role of a CBA in preparation of graduates for the workplace

<table>
<thead>
<tr>
<th>Categories of response</th>
<th>Percentage of responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates would be better prepared as they would have more work-related skills which</td>
<td>9</td>
</tr>
<tr>
<td>would allow a smoother transition to the workplace and be of value for at least the</td>
<td></td>
</tr>
<tr>
<td>first few years.</td>
<td></td>
</tr>
<tr>
<td>Learning continues in the workplace and any competencies developed in the university</td>
<td>38</td>
</tr>
<tr>
<td>would be for a beginning practitioner. Graduates can never be fully prepared</td>
<td></td>
</tr>
<tr>
<td>Not necessarily because while they will have more work-oriented skills, they will be</td>
<td>24</td>
</tr>
<tr>
<td>gained at the expense of capacities to be independent, creative, entrepreneurial,</td>
<td></td>
</tr>
<tr>
<td>able to form arguments, able to think and assess critically and exercise independent</td>
<td></td>
</tr>
<tr>
<td>thought.</td>
<td></td>
</tr>
<tr>
<td>The professional groups already monitor quite adequately the competency of graduates</td>
<td>12</td>
</tr>
<tr>
<td>entering the profession so there would be no change.</td>
<td></td>
</tr>
<tr>
<td>There would be no difference</td>
<td>12</td>
</tr>
<tr>
<td>The preparation would be worse because the competency-based approach would diminish</td>
<td>5</td>
</tr>
<tr>
<td>the diversity and variability of graduates</td>
<td></td>
</tr>
</tbody>
</table>

5.11.2 They have been arranged in two parts. The first category describes why graduates would be better prepared. The last five categories represent reasons why the standards would diminish the preparedness of graduates for entry to the workplace. Again, only a handful of responses express a positive view.
5.12 Issues concerning a competency-based approach to higher education

5.12.1 Respondents were given seven issues and asked to indicate whether each was likely to have significant adverse implications for higher education, no implications, or significant positive implications. Responses are shown in Table 5.12

Table 5.12: Implications for higher education of various issues

<table>
<thead>
<tr>
<th>Issue</th>
<th>% Negative</th>
<th>% Neutral</th>
<th>% Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>The autonomy of academics in the design and control of curricula, teaching and assessment</td>
<td>78</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>The development of generic transferable competencies such as problem-solving skills, mathematical skills and communication skills</td>
<td>30</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>The range of goals pursued in university undergraduate courses</td>
<td>59</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>The role of university professional education in producing graduates who will question and develop current professional practice</td>
<td>48</td>
<td>33</td>
<td>19</td>
</tr>
<tr>
<td>The development of new areas of professional practice as the changing environment within the profession is addressed</td>
<td>40</td>
<td>40</td>
<td>20</td>
</tr>
<tr>
<td>The recognition of skills and qualifications gained outside higher education through credit transfer and recognition of prior learning</td>
<td>5</td>
<td>37</td>
<td>58</td>
</tr>
<tr>
<td>The development of performance based assessment systems in higher education</td>
<td>20</td>
<td>33</td>
<td>47</td>
</tr>
</tbody>
</table>
5.12.2 The issues of academic autonomy and the range of university educational goals were the two most thought to be affected negatively by a competency-based approach to higher education. The issues of credit transfer and recognition of prior learning, and to a lesser extent the development of performance based systems in higher education, were seen most positively. Opinion on the remaining issues was spread across the categories.
CHAPTER SIX
EMPLOYER SURVEY

6.1 Introduction

6.1.1 What is the purpose of the introduction of a competency-based approach to curriculum design and teaching in higher education? On the basis of the evidence collected in this survey, it might be claimed that Australian employers assume it is to make a student’s university education more relevant to the world of work. Certainly, many employers interviewed see the introduction of competency-based approaches as ensuring students possess specific skills which will make them more immediately useful as employees. Certainly, many employers are also clear how to improve university courses - by introducing more work-related content as well as improving the teaching of some generic skills particularly the communication skills required for a work environment.

6.1.2 But the simple perspective presented above, while being a commonly articulated view, hides the complexity of the fuller picture. Other views of employers indicate that there is considerable confusion about what a competency-based approach to higher education is and what it might mean for them. They were clearly much more comfortable about expressing views concerning the competency that they would expect of experienced professionals and graduate recruits and what they hoped a competency-based approach to higher education might mean.

6.1.3 In the first place, a great many of the employers interviewed were not dissatisfied with the general standard of the graduates they now recruited. In fact, some specifically said that the quality of graduates was high. Where they did point to deficiencies, particularly in the area of communication skills, they often admitted that communicating professional knowledge to colleagues or clients was part of becoming a professional, part of the experience which only working could provide.

6.1.4 When employers began to reflect on the idea of competency-based approaches to higher education they also began to question the idea of what competence might mean, ie competent by what standards and for whom? There was concern that
interest groups might change curricula not necessarily in ways which would be in the best interests of all employers. There was also concern that national competency standards might mean the setting of minimum competencies utilising the more observable criteria or criteria related to the more immediate demands of the work-task. Such a competency approach is seen to neglect significant, if not essential, attributes required of a professional.

6.1.5 In this Chapter the responses to eight questions asked of 32 employers will be discussed. The ambiguities and range of views hinted at above are developed in more detail. Representatives from four professional areas were interviewed and these areas were: teaching, accounting, nursing and engineering. Interviews were undertaken with individuals in senior management or leadership roles. All those interviewed were working in the professional fields highlighted in this study. They were directly responsible for supervising professionals in the organisation, occupied management positions in respect to the directing of professional staff and/or they were responsible for the selection policy of professional staff. The intention was to interview representatives of one private and one public and one large and one small organisation related to each of the four professions.

6.1.6 It is not the intention of this study to highlight differences between the professional groups. We found differences between the groups, but there were similar differences within the groups. The sample size is too small to do more than give an indication of the range of views of all our employers and to assure readers that in this survey no employer group stood out as being different in terms of the range of comments they gave. The interviews with nursing were completed last. These interviews have been analysed and the comments of nurses have been considered for this interim report; there has not, however, been time to select and include a wide range of illustrative quotes from the nursing profession.

6.1.7 Apart from the first survey question which elicited background information about the organisation and the respondent's position, the survey questions sought the employers' views of:-

* what it means to be a competent professional within the organisation;
* the strengths and weaknesses of graduate recruits in terms of their preparation for work as professionals;
* the meaning of a competency-based approach to university education;
the ways in which curriculum and teaching in higher education may be affected by national competency standards;
* the implications of a competency-based approach to university education for the organisation, both in terms of graduate recruitment and more generally;
* the involvement in higher education of professional organisations, practising professionals and employers.

6.1.8 The interviews were deliberately conducted in an 'open' and semi-structured manner which enabled us to explore employers' views about implications of a competency-based approach to higher education in relation to their own individual experiences as employers of trained professionals. More particularly, their views of the implications could be expected to reflect (in part) their views of what constitutes competence in an experienced professional; their experiences with new graduates, and their understanding (naive though it may be) of a competency-based approach to higher education.

6.1.9 One point needs to be made immediately. All employers spoke about a competency-based approach to education in terms of graduates with undergraduate qualifications coming in as new employees to the organisation; they did not focus on the issues of access to higher education for their current employees - those experienced staff who lacked qualifications, those more senior staff who may consider higher degrees to extend their capabilities, or those who may use tertiary qualifications to change career paths in the organisation. Clearly, employers in our study did not consider the competency approach in terms of staff development.

6.2 What does it mean to be a competent professional?

6.2.1 There was considerable variation in the complexity of responses to this question. Some respondents readily listed the specific skills and attributes of professionals in their area; others struggled with the complexity and width of their professional role and their answer to the question came through a series of vignettes depicting aspects of good practice.

6.2.2 All the respondents emphasised that a competent professional had to have technical or academic knowledge, (ie. knowledge acquired through tertiary study), but also had to have other skills, competencies and qualities. Most commonly, these skills
related to working with and communicating with people - be they colleagues or clients. The most complex responses described professional competence not so much in terms of a checklist of specific skills or qualities, but rather in terms of the interplay between these and particular situations. Professional competence, according to this view, is described as being able to bring necessary and appropriate qualities and skills together in a range of different situations to solve a range of different problems.

6.2.3 Broadly speaking, on the basis of this complexity, the responses fall into three groups:

(a) where competencies are seen as skills and areas of knowledge;

(b) where competencies are seen as qualities related to an immediate work context;

(c) where competencies are related to a view beyond the immediate demands of the work-task.

6.2.4 (a) Where competencies are seen as skills and areas of knowledge, there was, at the simplest level, a listing of fields of knowledge and skills relevant to being a competent professional. Often mixed up in this listing were various proxies for competence such as the holding of a particular qualification or knowledge related to a particular set of established standards. There was no attempt to unpack what these listings meant in terms of day-to-day practice.

They would have completed the professional year of the Institute of Chartered Accountants. They would possess supervisory skills and they would possess sound verbal and written communication skills and they would be computer literate ... and they would have a rudimentary knowledge of how to access and analyse data using computers. (accounting)

(Being a competent professional) in our organisation requires a number of things. One is general personal development - things like communication skills, time management and various other aspects which we tend to be taking care of by our Personnel Department. ... Then there is the various levels of technical knowledge that they need to gain - generally on the job, but courses are run here from time to time and also outside. Then there is a certain amount of experience that they are required to have had to have actually put in practice what they have learnt.

(Being a competent professional) involves a number of associated competencies ... Firstly I think there are competencies relating to one or more curriculum elements ... We like I think to take it for granted that someone who comes to us as a chemistry teacher for example possesses certain competencies relative to the area of chemistry. ... Secondly I would be looking for pedagogical competencies. By that I mean the competencies that enable that person to deliver the curriculum to pass on to the students the competencies that he or she has in the various areas of knowledge. Allied with that, but I think not quite synonymous with that (are) competencies relating to student management. I think that it is possible for a teacher to come having a wide range of curriculum based competencies and having a good knowledge at least of pedagogical techniques but yet not having the ability or competency to manage students in a group situation. So student management competencies I think are very
important. Then also I think there are a series of competencies related to organisational and administrative matters in that every teacher is also to some extent an organiser or administrator. Even at the entry level to the profession the teacher does need to have some of these things in hand. The other thing I have listed as being important for want of a better expression I have described as collegial competencies. It is right impossible I think to work as a teacher as an individual totally. There have to be relationships for example within the subject faculty group, within the group of teachers teaching at a particular year level and so forth. I think we are all familiar with teachers who may well possess all the other competencies of a teacher who just don't relate to their peers and are thereby to that extent more ineffective than they might be. So that is my little list.

(teacher)

(b) Where competencies are seen as qualities related to an immediate work context, respondents talked most frequently about the qualities of a competent professional within the context of day-to-day work. At the core of their comments was an emphasis on the need for a range of different types of competencies. It was particularly emphasised that theoretical or technical knowledge had to be accompanied by a broader understanding of working and communicating with people:

(In terms of key competencies of professional accountants in our firm), we would expect professionals to come in with a broad background of accounting skills so in effect they obviously have a good strong understanding of accounting principles and practices. We see that as essential for any graduate coming in. We aren't looking for narrow specialised sorts of personnel. You tend to go outside and buy ... those skills from consultants and so on because they tend to be needed only short term in the organisation. ... It is essential that (competent professionals) have computing skills and understanding. And what seems strange but something that you call commonsense and initiative ... An employee may well understand a basic concept and practices and so on but the ability to apply them in a commonsense role and use initiative in terms of being able to analyse and raise and question the professional role ... The accounting role is far more one of analysing the data that comes out and being able to therefore add value to management in terms of what does it mean and what are the issues confronting us. ...

(accounting)

... (Being a competent professional entails being) competent not only in the technical side but (having) some more substantial experience ... I don't mean a whole line of working experience but ... experience of what goes on in industry. I see it as people with good (skills in) verbal and written communication, teamwork, analysis and problem solving, planning and (time management). ... These tend to be the skills that graduates need when coming to an organisation like (ours) and they are probably the skills that are least developed in graduates. Some of them have no difficulty and others struggle with some of these for some years. ... It takes some people from probably three years to five or six or eight years in some cases (to become a competent professional) ...

(engineering)

(c) Where competency was related to a view beyond the immediate demands of a work-task, it was commented that competent professional practice is something which deals with different situations and environments. It is not limited to a particular type of problem, or group of clients, or a working environment. It is not limited to the immediate demands of a work-task. A competent professional, for example, can show appropriate technical expertise in any number of situations or problems possibly with a range of different clients:
I think in broad terms they need skills in curriculum, interpersonal skills, skills in management and administration and a social and political understanding of issues relevant to education ... A teacher needs to be able to negotiate within the classroom and outside of the classroom. They must be able to deal with change ... in the classroom and outside ... A good teacher needs to understand the relationships between the school and the local community and needs to have an understanding of the issues as they relate to the classroom of the day and the trends that are taking place within education at that particular time.

6.2.7 A competent professional clearly needs to be aware of the world beyond the immediate task and its relationship to work:

(Competent accountants should be aware) of all the legislation that is likely to apply in the business world and once they know of its existence they then know, need to go and find out about it but of course reading newspapers, listening to news, reading magazines, journals, etc. This is where they're going to really find out what's going on and what they need to know and look up and follow through with.

If (a competency-based approach to teacher education) means that ... people coming to us may be ... less widely read and have thought less widely ... then I think I would want to provide within the school opportunities for teachers to reflect with one another and with outsiders about the ... deeper nature of what they're involved in. ... It's one thing to have ... competencies. It's another thing to wish to use them and ... brush them up and ... (value) them ... and I don't know that (this is going to happen with) an approach to teacher education which is perhaps more akin to teaching someone to drive a car. Perhaps we've got to learn a bit more about how the car works or why it's good to have cars on the road in the first place.

6.2.8 So, in brief, the competent professional is described by employers in three qualitatively different ways. These descriptions range from the listing of a number of discrete skills or qualifications, through a series of responses which emphasise knowledge and skills in the work context, including the communicating of knowledge with a range of different clients and colleagues; and conclude with descriptions which emphasise making decisions in different contexts, within the context of a changing political or institutional environment.

6.3 Strengths and weaknesses of graduate recruits in terms of their preparation for work

6.3.1 At the heart of the responses to this question was uncertainty as to what might reasonably be expected of a graduate recruit. There were some employers who claimed to be satisfied and others who claimed to be not at all satisfied.

6.3.2 On the whole, employers were satisfied with the graduates' displays of basic skills and technical efficiency and even their understandings of key areas of professional knowledge. There was considerable dissatisfaction with what were variously described as 'people', 'communication' and 'language' skills. Employers often
used one or other of these terms interchangeably to mean similar things. In unpacking what was meant by these generic skills it was clear that, for some employers, what was being described was not so much specific skills, such as giving presentations, or talking to colleagues or clients, or writing reports; rather, it was the development of an understanding of what was an appropriate response in a given work situation. There was concern with both what was being said and how it was being said within the accepted professional conventions and the actual work environment. It was argued by some employers that what was lacking was not so much skills as a complex understanding of what to say and how and when to say it, and this could only be developed within the professional work environment. As a consequence, tertiary courses which included work experience components were applauded.

6.3.3 So, in brief, employers' comments might be seen in terms of the following categories which are illustrated in paragraphs 6.3.4 to 6.3.7.

6.3.4 (a) Those who were satisfied with the quality of graduates (these are in a minority)

I find them extremely well prepared in not only their technical ability but certainly in the way in which they deal with people, their eagerness and keenness. I've certainly been most impressed. (accounting)

I have been impressed with the young people I get coming to me for jobs. I see them as committed and intelligent and very well prepared. (teaching)

6.3.5 (b) Those who were dissatisfied with even the basic technical skills (these also represent a minority).

With people coming into our English, History, Social Science and Social Studies Departments we do find that there's a lack of what we accept to be general knowledge. They're often people whose university courses have been fairly specialised and not readily related to the kind of syllabus or the kind of information that they're required to have as teachers of secondary students. ... (English graduates') ... knowledge of literature ... which is particularly appealing to young people is very, very scanty and in fact is based more upon their own school experience than upon their university experience. ... People applying for jobs as history, geography teachers who have included in their degrees subjects which are not necessarily in geography, subjects perhaps in the social sciences, behavioural sciences ... are bound to lack confidence and authority in a classroom simply because they don't have the facts, they don't have the information readily at their fingertips. (teaching)

6.3.6 (c) Those who were dissatisfied with graduates ability to communicate and who see that as the lack of specific skills which might be simply taught to students as separate skills

(Universities and other institutions could however) place more emphasis perhaps on some of the less academic areas such as communication, working with people, teamwork some of
those areas that are important. ... It would help I think if there was writing skills and oral communications and some of those more fundamental things that are required in any job were built into the engineering course. ... I don't see the need to lengthen (courses) but if some courses were run as options I think they would get a reasonable uptake on them.

(I think students could be better prepared in ways) of relating to parents ... because you are meeting parents at the door way in the morning and in the afternoon so I find we need to work a fair bit with people as to how to talk - what information you give parents in a pleasant fashion.

6.3.7 (d) Those who see the graduates' ability to communicate as being something more complex than just the development of particular skills.

What needs to (be taught) in order for graduates to be competent professionals cannot be taught. It's something which is a continuing learning experience which you start all over again once you leave university and you have to learn or you have to call up what you you've learnt during your degree years and adapt it to the current situation. I'm probably a little bit negative but I believe it's something that's going to happen after university. It can't be taught within the university system.

When you come out (of university) you're very green and I probably have a bit of a belief that university can't prepare you adequately for the profession itself and I don't know whether you could change areas or topics because experience is what counts in our industry, and that only comes from being out in the field and learning. I mean you go into a uni and you learn a subject and then you've got to learn to apply that subject to a practical situation and that's something I believe you can't gain from the university.

6.4 The meaning of a competency-based approach to education at university level

6.4.1 Most employers were cautious when commenting on this question. Many expressed uncertainty as to what it might mean; others were prepared to make an educated guess. In the latter case employers' views usually reflected their experiences in more familiar territory, namely the workplace.

6.4.2 If we focus on the substantive views of employers it is clear that most saw a competency-based approach to university education as ensuring that the outcomes of a tertiary education would be more closely aligned to the needs of employment within the discipline. Some described this in general terms as though the needs of employers were obvious and unproblematic.

6.4.3 Others talked about the skills needed when graduates began work. Embedded within these comments was the view that a competency-based approach to education would reduce the period necessary for learning the demands of the practice of the workplace.
6.4.4 A further group drew a distinction between the skills required on graduating and those needed two or three years into a professional career and stated views based on what they hoped a competency-based approach within higher education was about. Comments that illustrate these positions follow.

6.4.5 (a) Uncertainty of meaning

I could hazard a guess and say something along the lines of evaluating the education based upon the output. In other words the student comes out and they can handle their job or profession competently. I'm really just guessing.  

(accounting)

I don't have any strong preconceived ideas as to what (a competency-based approach to engineering education) means but I think if you broaden that to cover ... competency-based standards of doing a job which I think this is probably all leading to ...

(engineering)

It is very difficult ... I'm not quite sure what people mean completely by competency ...

(teaching)

I have given (that question) some thought and I am a little bit hazy on that. ... I don't know that it is necessarily going to look much different to what we have today except that it is going to be more focused on what it is that teachers are going to do ... when they are employed as a teacher in a school.

(teaching)

6.4.6 (b) Addressing the needs of employment in the discipline

preparing individuals so that they will be competent in their chosen field as far as is expected once they've finished their tertiary education.

(accounting)

A competency-based approach to my mind would mean something other than just an academic training. It would be giving students an appreciation to overall business problems and issues and so on. I'm not saying it is particularly lacking and that (it) doesn't necessarily happen in some places. It probably happens more than others and I am not familiar enough with all the different programs obviously. Some courses have a sandwich content now, which means that students have been out in the work force and have got a feeling for basic business issues and communication skills and all that with other employees in some of those other things that are developed above and beyond just a purely academic (program). People need to have commonsense, initiative, and you assume that they are going to have great academic skills. But if they don't have communication and the basic ability to analyse and use some initiative and common sense ... then they are never really going to get off the ground in the organisation and they are never going to be one of your better performers. The (competency-based approach) to me would be giving people more than just an academic basis.

(engineering)

(A competency-based assessment of a BEd student at university) would be based in a real life situation and there would be a checklist of various things that it was agreed that a successfully functioning teacher would do in a classroom with students and this would be itemised and then analysed against this one particular teacher's performance. ... Where the emphasis seems to be on the competency-based approach to assessment is that one focuses on that rather than perhaps upon more philosophical aspects of a teacher's task which is you know a long term evaluation and a putting into perspective the value of what one is doing. ... In other words the emphasis is on the here and now.

(teaching)
6.4.7 (c) The development of general skills

(A competency-based approach would focus on the ability to apply your basic skills of inquiry and investigation and ability to apply basic arithmetical thought and common sense, reasoning and the like to solve problems. Being able to spell and being able to talk competently and being able to write competent and be coherent ... It goes back to something which I believe can't be learnt or taught at the higher level it is something which comes up through the system ... (accounting)

(A competency-based approach to accounting education would be) an approach that prepares students for the workplace by determining the skills that employers expect of them so that they can possess those skills when they join the workforce. ... A competency-based curriculum would ... include traditional subjects such as accounting theory, economics and the like and it would also include subjects that firstly teach (students) ... communication skills and secondly open their view of the world of work and that is to say get them away from the narrow confines of accounting as being book keeping or accounting as being the production of accounting reports to provide them with an understanding of what business is really about, the rudiments of business understanding and then also perhaps to include a view of society and to teach them to look at society as a factor in the way in which business is conducted and the way in which professional accounting in particular operates. ... I think (the competency-based approach for higher education) certainly is appropriate. (accounting)

6.4.8 (d) Preparation for the demands of the job upon graduation

I think it'd be marvellous because they'd come in having a far greater awareness of how business does operate if you're looking at the work they've, that's actually being done with in the organisation and there is a big cultural shock when they go from the university into business they are two different worlds and if you have that contact they're going, they're going to fit in far more quickly but they do fit in very quickly now. (accounting)

... I understand (a competency-based approach to higher education to be) ... to break down the skills that are to be acquired (to enable more satisfactory assessment and to enable an easier match) between a person and a position ... At the same time it would allow the tertiary education system to assess what is required of the graduates when they leave to go into the professional work force and therefore modify their programs and become more flexible and more responsive to changes in the requirements of the industry and the community in general. To provide graduates which would be more appropriate to the mix of skills required at the particular time. ... So in some ways it is almost a move towards a competency-based approach to allow employers to look at particular graduates and see what they have been given skills in and also what they are interested in ... But I think the competency-based approach does seem to hold out quite considerable promise as well. ... (engineering)

6.4.9 (e) Preparation for more 'advanced' professional roles in employment

I believe that people who are going to be looking for careers in organisations like (ours) have to be aware of the sort of organisation that they are going to be going into and how they are assessed and what their career prospects within that organisation will be. ... (They) need to be aware of the sorts of things that they are going to have to do and the things they are going to have to cope with when they go out into industry. One of (our competencies) is resource management. Now I don't know whether as part of an engineering course young undergraduates are given any exposure to say staff supervision where they can come out to an organisation like (ours) and after perhaps the first twelve months be responsible for the direction of a technical assistant. They would then have to do that person's appraisal and manage that because that is their resource that they have to manage. (Other examples mentioned: team membership, interpersonal skills) ... There would have to be I presume perhaps less of the real specialisation and perhaps more of a very good overall say
6.5 Ways in which curriculum and teaching in higher education may be affected by national competency standards

6.5.1 There was a major division in responses to this question which are listed in paragraphs 6.5.2 to 6.5.6 below.

6.5.2 Some respondents saw the notion of competency itself as problematic and, as a consequence, asked questions about what competence might mean to a particular person in a particular professional context.

There may well be some aspects of a teacher's preparation that are not covered by these competencies. (For example) you can have somebody who is competent but cold, ... there is no heart, there is no soul in the teaching. ... You can have the technically skilled person but no heart or soul that is the best way I can describe it. Teaching isn't a technical skill only. (teaching)

I think the answer to (that question) will be different for almost everybody you ask. I think that yes we would encourage all engineers to be competent. (But) what I define as competent and what you do could be two different things. ... I am looking for ... all of those things that I described to you before and if I could get such a person before they join this organisation then I would applaud it. (But) I'm not sure how someone outside a work environment would provide it. (engineering)

6.5.3 Perhaps the majority of responses, however, assumed that the notion itself was unproblematic. Those who assumed the notion of competence to be unproblematic put forward a range of different arguments along the following lines:

6.5.4 (a) CBA will ensure a university education is more relevant to work practice and this might mean changes in curriculum:

Implications I would say would be just trying to keep up to date with current movements and trying to pass as much knowledge on to students as possible. (accounting)

The relevance of the subject material (of higher education) needs to be reviewed. ... Perhaps the higher education institutions need to be aware of the need for specialisation ... I think what is needed is for the institutions to be aware of what in fact is really going on in the outside world. (accounting)

6.5.5 (b) A curriculum based on CBA will be narrowly related to professional needs and will tie students, too early, into a particular specialism.

I guess I have ... some misgivings that competency-based (engineering education) will put people more in pigeon holes. Now I don't know why I have that and it could be completely
off the mark but I think it is something that we do need to just watch a little bit that people say well I am competent in this area and get put in a little pigeon hole and become less flexible.

I have a problem with (a competency-based approach to teacher education) because I know that there is a push to train people not just for a particular career option ... By saying you are going to have to take a lot of note of what it is that teachers do in schools then that is going to cut those people out of getting jobs in other fields of employment ... I am just wondering now with a competency-based skills approach whether that would further restrict their employment options in other areas (of the workforce).

6.5.6  (c) University courses are already based on notions of competency.

I think to a degree (current engineer education) is (competency-based) ... certainly on the technical side it is certainly to a degree competency-based, particularly in practical assignment work and so on. (But it doesn't encompass all of the competencies that I think are important for the industry. There) doesn't seem to be (any) emphasis on some of the skills which I think are absolutely mandatory in industry these days ... particularly communication skills. I find that some engineers are really lacking in that area. ... I have got engineers who work from a technical point of view and you could say were extremely competent engineers. Give them a technical problem to solve and you can be assured that they will consider all the appropriate causes and come up with the right solution. (But they) couldn't write the paper to save their life. And unfortunately I think in any engineering, it doesn't matter what it is, you have got to be able to express your ideas in written and verbal means.

I think (a competency-based approach to higher education) probably, some of it would relate to the kinds of work that's been done by the Schools Council where they've talked about the need to make teaching more explicit. It probably isn't necessarily that hard to actually articulate the kinds of competencies that are being aspired to in pre-service. I mean it's not as though pre-service courses don't have aims and objectives and desired outcomes. It's probably a question of re-gearing ... much of what exists - but also taking into account the fact that there's a changing attitude about the way in which teachers should be trained.

I think that that has probably been always a way of looking at teacher education without perhaps using the label competencies in that always I think there have been elements of teacher education that have aimed to provide teachers with a competency-based on ... curriculum element ... (we have always endeavoured to make sure that chemistry teachers know a bit about chemistry and French teachers know a bit about French and so forth). And we have always endeavoured to develop pedagogical competencies although I suspect that there has been something of a move away from a practical emphasis to a theoretical emphasis ... So whereas I think there has always been an attempt to develop a subject based competency I think possibly some of the other competencies have tended to be put aside to some extent as perhaps being a little beneath the tertiary sector to develop or whatever.

6.5.7  There was also a group of employers who focussed on the idea of standards being common across the states and on the positive and negative consequences of this.

I would imagine that they would all have to include a certain component of certain subjects in their courses so it would be a lot more tightly governed and you probably wouldn't get the variation in institutions as you may get at the moment ... So there would have to be an administrative body to co-ordinate what everybody was going to teach ... but the end result probably would be that you'd have students coming out of tertiary education who ... were ... equipped to a similar degree in all areas.

I think (competency standards) should be national. ... I think it is important that we have as much standardisation in (engineering) training as we can. ... Probably the training institutions
could specialise ... a bit more than they do. If you had a general engineering level or standard but say you had Melbourne University specialising in structures and Monash specialising in water resources or University of New South Wales specialising in water resources ... I think the Universities could try and differentiate a little more in that way but still provide the same (underlying) national standard ... I guess everything has a disadvantage and the Universities would come back and say we don't want people within our catchment to go up to the University of New South Wales if they are going to get better water resources or whatever ...

Well we would assume that national competencies would in some way tie in with a more national approach to curriculum. As it is different states have so many different aspects of education. I would see that it would enhance teacher transfer between states and it would facilitate better teachers if teachers moved interstate if there was a better overall agreement ...

The big thing (is) how to agree what are the actual standards and ... the areas where competency is required. Obviously not everybody can be competent in every area. (teaching)

6.6 Implications for employers of a competency-based approach to education

6.6.1 Two questions in the survey asked employers their views of the impact of a competency-based approach to education on their organisation. The most common response was to assume that a competency-based approach to education would mean that the curriculum would be more practically orientated and more systematically developed. There were four different areas of comment of this kind.

6.6.2 (a) Graduates will have more practical, employment-related skills

I think it'd be marvellous because they'd come in having a far greater awareness of how business does operate. ... There's a big cultural shock when they go from university into business; they're two different worlds. If you have that contact they're going to fit in far more quickly ... It would be a big advantage for us in that their learning curve would be a lot shorter, they would adapt more quickly, so they're I guess earning their keep earlier.

From my point of view it probably means to me that I could get a graduate with a more all round ability to fit into industry. ... We could employ the graduate engineers more readily by themselves into tasks more readily. This whole subject is quite interesting because I see quite a diversity of graduates that we get from institutions like Swinburne for instance who provide two periods of practical experience during their degree course versus Melbourne University that is more of a purist type degree in my assessment. I see the people that come from Swinburne are much more practically based people who can start work much quicker than people from Melbourne or places like that ... If my understanding of this whole thing is correct then we would get an engineer who could integrate into the organisation much more readily and therefore become productive much quicker. So you basically would have smaller or shorter familiarisation getting up to speed type training sessions and engineers coming in would be able to work from day one or a (after) short period of familiarisation rather than (as now tending) to have to work up over a couple of years. So I think perhaps we would get to competent engineers more quickly.
If there were appropriate feedback mechanisms so that tertiary education was fully aware of specific competencies that our organisation for example might require, and they happen to develop programs that would match what our requirements were, it may be very much easier to (select) staff who would then fit into our organisation and be productive immediately.

(enginering)

6.6.3 (b) Students will be given more guidance as to what basic competencies have to be mastered.

Dip Ed students or final year teacher education students might learn earlier that the competencies required for success in the classroom were not easy to attain and for some people would be so difficult that they might never attain them and therefore these people may learn before they come into teaching that teaching is not an appropriate job for them.

(teaching)

6.6.4 (c) Making basic competencies explicit will help employers in their selection of graduates.

If we are looking at recruiting new people who are being assessed on (the basis) of competencies then we (would) have to identify what our current staff why are we keeping our current staff or what level of measurement or standard of practice or professionalism they have got. ... If a standard or standard competencies were being used as assessment then you would know what you were getting. Competencies is part of (the picture) but I guess I still lean heavily to the amount of practice ... I don't think that competencies alone would make necessarily the greatest difference, ...

(nursing)

I think that the beginning teacher or the prospective beginning teacher would need to carry with him or her some kind of (competencies) profile ... I have been involved over the years in representing the Ministry in interviewing prospective students in Dip Ed year (a number of school principals are asked to do this from year to year) and we don't have much to go on. The interviews are conducted before any final assessments in Dip Ed are known. We do have some prospective information about what kind of students they have been and whether they have passed their degree work in previous years and that sort of thing. The interview is about the only way we have of endeavouring to determine whether these people are prepared for a teaching career and whether they are in possession of the kind of skills in teaching and in student management etc... I think that if we are going to talk about a teacher preparation that is based on the acquisition of key competencies we have to finish up with some sort of profile document or whatever which indicates where the individual stands against these competencies and it seems to me that there is not much point in having a competency-based education unless at the end of it there is a way of determining where the individual stands against them. So I would be looking for some kind of profile of each individual whereby the employing authority be it the Ministry of Education or independent school or whatever can assess one individual against another.

(teaching)

If there was some way of focusing on competency aspects you might be able to better match ... the beginning teacher with the school and the type of role they would be playing in the school.

(teaching)

... it would make it easier to assess our new graduates for their longer term interests and usefulness to the organisation ... As mentioned before historically people in ICI tended to join after university and then retire 42 years later. People were developed by moving around and their experience was pretty well tracked and we would tend to know who was appropriate for which job. Now that is changing in Australia and within ICI as well and people are tending to move jobs more often and the mobility is increasing at a very rapid rate. We tend to have people now who might come in as a graduate and leave two years later to go somewhere else. So there is a greater need therefore to assess those people coming from outside and also from

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within our organisation. We are also acquiring and divesting ourselves of engineers. So from
the point of view of assessment of people within the organisation and also from outside ... I
think (competencies) would be an important objective measure of whether they are
appropriate for particular jobs. We also are moving towards quality based engineering and
safety health and environment procedures and in that we require that people be verified as
appropriate to sign off for example designs of pressure vessels or to check that appropriate
procedures are being carried out on the maintenance of equipment to ensure safety aspects
have been carried out. Now that needs to be verified in a documented sense that they have the
appropriate level of experience and training so again competency-based approach is very
important there.

(engineering)

6.6.5 (d) A competency approach, and more particularly national competency standards,
implies commonality of standards across tertiary institutions and this is of
advantage because it encourages mobility of the workforce.

I guess there, there are pros and cons. Yes I think there should be standards but then again in
Australia your Queensland is very different from Tasmania and no doubt culturally it's very
different. Would on, would the standard that applies in Tasmania necessarily be applicable in
Queensland, I really don't know enough about business in those areas to ... comment ... But I
certainly do like standards of some form because I think it's equitable and you know what
you're getting. ... If you, if you recruit someone who is qualified you know a certain standard
has been reached regardless of which university they obtained the qualifications from. ... I
think you're more likely ... to get what you think you'll be getting ... whereas you're not so
sure that you are now. (National standards would) standardise what the levels of education
are. ... At the moment I think a graduate from one institution might be very good in a certain
line but not as good in others whereas a graduate from another college might be good in
different fields. I think each of them seem to have their special area of expertise but I do think
standards would standardise the industry certainly would make graduates or accountants more
mobile, more transferable and I think that's a great advantage.

(accounting)

6.6.6 A much less common response was to express reservations about the nature of
competency itself. Those employers who expressed reservations about the nature
of competency standards asked questions about what these standards might mean in
terms of what students would know and what and how these standards might be
implemented and measured.

Yes there probably would be (implications for recruitment in our company) but it is difficult
to comment fully on that until you know how the competency-based standards are derived
and what is included in them. ... We are taking a wait and see approach ... because if there
were elements of ... competency-based education that were obviously beneficial we would
look at that and say yes they have done that in their course or done something in their course
which would make them more useful to us and that would be a factor, or if some courses
included it and others didn't it could be a factor in deciding (whether applicants) were more
likely to be successful in our industry than another.

(engineering)

I don't know that it would be any different from now because we would be working on the
assumption that successful completion of a course indicates basic competency in teaching. ...
I don't think I would have any concerns but it is not until you see what the competencies are
that ... you might have concerns because there may well be areas that you see as important
that haven't been ... included.

(teaching)
6.7 The involvement in higher education of professional organisations, practising professionals and employers

6.7.1 This question raised the central issue of who owns, and who has responsibility for, the various curricula in higher education. In simple terms there were three basic views of involvement by the three main interest groups (professional organisations, practising professionals and employers).

6.7.2 (a) One viewpoint was that the vocational education of professionals at university level should, and could, reflect adequately the concerns and needs of all interest groups; this was a goal worth working for and the involvement of all interested parties was a positive direction.

It is in the interests of professionals and the profession to share their expertise and insights with higher education and indicate how the profession is developing. It is in the interests of higher education to take note of what professionals say so they can keep their courses relevant and their graduates up-to-date.

It is in the interest of employers to be involved in educating the graduates who will work with them. It should be a collaborative process with the interests of the profession, the graduates and society at large involved. (nursing)

I think the professional bodies must be involved because they are the standard setters and they obviously want a certain level before they accept graduates.....Practising professionals too definitely should be involved. They’re aware of what the industry demands are at a point of time and what is likely to be happening in business and therefore what skills are required. I also think the involvement of employers is very important because they are the users of these graduates. (accounting)

6.7.3 (b) Another view was that particular representatives of the groups might not be in a good position to give informed opinions because their experience was focused in particular directions and their understanding of other areas was limited. These views, should, perhaps, be sought, but their particular bias should be acknowledged and this should be taken into account when curricula were being developed.

Large, multi-national employers, such as BP, or Ford, may not have a clear idea of how or where the professions are developing. They should, contribute, but it should be remembered that they are just one of several interested parties. (engineering)

Employers definitely get a lot out of the higher education system so I definitely think they have a role of putting something back in.. I definitely feel that they should be putting back in.....though it may be appropriate to look at who is having an input and what they are saying and why. (accounting)

My feeling is that professional teaching associations tend to be conservative. They’re either conservative or else they’re controlled by a small group of people who have a political rather than a professional agenda or an industrial agenda to push and because of that I would think that it will be better for higher education institutions to not give them too much input into their courses. (teaching)
6.7.4 (c) A more extreme version of this view was that some interest groups might put forward such biased ideas and suggestions that they would distort the education of future professionals: the self-interest of one group might be furthered, but the best interests of others, including the students and the vocational area, might not be served. On the whole, it was the professional organisations which excited the strongest feeling amongst employers. Although some employers made very negative statements made about the involvement of professional groups in curriculum development, others described their contribution as particularly important.

I think the professional bodies unnecessarily confine the scope of the students' studies by mandating subjects that have to be completed. Twenty of the 24 subjects that I think are offered as part of the degree course at RMIT are mandated by the ICAA as prerequisites for carrying out the professional year of studies. I am sure that a lot of students who don't necessarily want to study the subjects that are mandated are turned off a career in Chartered Accounting because of that. (accounting)

Professional bodies protect the interest of the professions and these are not necessarily the interests of employers, society or the discipline areas underpinning the professional areas.

6.7.5 To balance these comments, it should be noted that a sub-set of those employers who saw the contributions of all interest groups as useful, (see the first category mentioned above), saw the contribution of professional organisations as particularly useful.

I think the professional bodies must be involved because they are the standard setters and they obviously want a certain level before they would accept the graduates into their professional associations and I think that it is fair enough because they want to raise the standard of competency of members. So I think that it is right they should be involved. (engineering)

I think the professional bodies are very relevant because you find that they are very conscious of ensuring that their members are well up to date on all of the current matters or current topics and skills that are required. (accounting)
CHAPTER SEVEN

CAPITAL CITY DISCUSSION SESSIONS

7.1 Introduction

7.1.1 Following the collection of data from the professional organisations, from academics and from employers of graduates, the results were described in an Interim Report which comprised draft versions of the first six Chapters of this Report.

7.1.2 Copies of the Interim Report were distributed to the Vice-Chancellor of each Australian university and to all the professional organisations on our various lists, along with an invitation to send representative(s) to one of six capital city meetings we held in Adelaide, Brisbane, Canberra, Melbourne, Perth and Sydney during February and March, 1993.

7.1.3 Up to 18 representatives were present at each meeting, with the universities and the professions being represented on every occasion. In total there were 50 university representatives and 21 representatives of professional organisations. Each discussion took place over a two-hour period, was recorded and the tapes transcribed.

7.1.4 The transcripts of these discussion sessions provided the data on which the analysis reported in this chapter was based. The issues presented here are from among those nominated by the participants in the capital city discussion sessions through the process described above.

7.1.5 The discussion sessions began with an opening statement by one of the Principal Consultants. The following excerpts from the Brisbane session provide an example of the ideas expressed at the beginning of each session:

We see today as an important data gathering exercise. I should perhaps explain what was outlined in the first chapter (of the Interim Report). I want to emphasize here that this was definitely an interim report which was intended primarily to present data. We refrained from interpreting and commenting and drawing conclusions and making judgements. We didn't want to interfere with this further data gathering process. This series of meetings in the capital cities with representatives of the universities and the professional organisations was
always planned into the project. We saw it as an important step after we gathered (the initial) data. We saw this as a data gathering exercise itself. What we are looking to do is to have a discussion about the issues that you see arising with respect to the general topic of implications for higher education of a competency-based approach to education and training, given that our focus was meant to be on the work of the professions in developing competency-based standards ... I was wanting to spend a very short time just taking questions for clarification to make sure that things that are in the report are clear ... Secondly, to develop an agenda which comprises the various issues that you see as important to discuss and then move onto the discussion and let that follow its own pattern.

(Principal Consultant, Brisbane)

7.2 Views on competency-based standards

7.2.1 This question was addressed in most meetings with the main issues being concerned with a definitions of terms such as competence, competency and excellence; the distinction between skills and other capacities; the terminology used in expressing competency-based standards; the contrast between rhetoric and reality; the variation in outcomes from very broad to very narrow statements; and whether competency-based standards have a conservative rather than a futures orientation.

7.2.2 In general, negative views about competency-based standards and their implications for higher education tended to come from university representatives while more positive views tended to be expressed by representatives of professional organisations. As can be seen below, those views also reflect different conceptions of competency-based standards.

7.2.3 Narrow vs. broad statements. One university representative suggested that there were two approaches to developing standards, going from the specific to the general and vice-versa. It was felt that the latter was more consistent with normal university practice which had some similarities with competency-based standards that took that approach.

It seems to me that competencies can be approached fundamentally in two different ways. One is by giving a range of skills and then by a refining and a generalising process. Then for teaching institutions to come to the party as it were and to teach to those outcomes. The other way is to start off with some general areas and take them downwards into particularities. The second (way) ... I think higher education has always been in there. It has (been) a tradition in Australia for the last one hundred and whatever years of training for professions. In some cases... definitely similar to what is being done in the current competency framework.

(University representative, Adelaide)
The approach involving more global competencies was criticised by a number of university representatives mainly on two grounds, that they are so broad as to be meaningless or that, while being acceptable in global form, they are unable to be developed into more specific statements that are meaningful:

I agree with the fact that we need to have broadly conceived competencies. But when does broadness become blandness. I can give you the competencies of teacher education which are not specifically able today to encompass the future; nor the richness and complexity of teaching, the essential role of personal relationships which keep on going; nor the changing knowledge base of teaching, the interactive nature of teaching. And the effectiveness of the collective collegial approach to teachers work. I think (the competencies) are all very sound and balanced once you have handled the programme but they are pretty bland.

(University representative, Adelaide)

That is what you have with nursing where the competencies are so generic now having been brought down to the hundred or fifty or whatever they had, down to the 34 they have now got, that they are almost meaningless. They are so broad. How does one assess a generic competence that is so broad without getting into the banality that one sees on this element in Agricultural Science on Page 36, 2.12.17 where being able to advise a farmer by phone is one of the elements of success.

(University representative, Perth)

Sometimes they are helpful when they are broad and sometimes they are helpful when they are narrow. Often they aren't helpful (at all). You have only got to read the Mayer Report on employment related competencies to see this problem worked out in public. First of all you get the reductionist tendency which leads a group of intelligent people to a conclusion that there are six or seven key employment related competencies. Those are then expressed in global terms and everybody feels relatively comfortable with that specification. But as soon as the committee tries to drive those seven or six global categories into increasingly smaller elements of performance ... The problem then comes in when you segment down ... That, I think, is really where it all starts to come to grief. People will feel relatively comfortable or prepared to wear it at the global level. But once you start segmenting down the kinds of skills that we are striving towards in our higher education institutions, you end up trying to specify what Polanyi called the logically unspecifiable. Some skills just simply don't work that way. The competency-based approaches tend to assume that everything, all knowledge, all performance is ultimately segmentable. It could go on to infinity virtually. That is where I think we have the problem.

(University representative, Melbourne)

Limitations of competency-based standards. There were others who didn't believe that competency-based standards are adequately addressing all the desired goals of professional programmes at universities.

It seems to me that you are not measuring in competency-based movements a lot of the things that we would like to instil in people like leadership qualities, enthusiasm, fire, serendipity and knowledge.

(University representative, Melbourne)

What I am thinking about is the middle level where in some fields at least, like health policy, welfare policy and the education policy become law, as it stands at present the students come out of the course able to think critically about how those policies might be included. But I am not sure that competencies get through the sort of process we've been through. It's got to include that.

(University representative, Adelaide)
7.2.6 Another university representative suggested that it was inevitable that important functions of university education would be omitted or couldn't be expressed as competencies.

I think standards are important but in a sense they are a basic building block if you like. The dominant part of the professional or engineering education is to be able to use these basic competencies to solve complex problems. The ability to solve these problems is not really something you can reduce to the level of a competency. (University representative, Adelaide)

7.2.7 Problems with terminology. Several university representatives commented on the language used, the terminology. The competencies terminology was compared with traditional language such as excellence and quality, with a view being put that the very language of competencies is limiting:

Because there are preoccupations with such things as excellence, and I don't see how the competency language actually is ever going to wrap itself around the issues of excellence. In a way it is a little bit as though at the moment the whole thing is taking the easy way, trying to use a lexicon which isn't going to work. We are actually preoccupied with things like classifying graduates and we want a graduate who has got these kinds of qualities and all those kinds of things. There seems to be a lot of evidence that the competency vocabulary is not going to actually bring that about across the board. I am actually thinking it would be very interesting to find the terminology that would work for academics which would enhance the description of where a student is at and where a student is going. But it just seems to me that there is something harder that has to be grasped yet before this has a future. There are quite lucid descriptions (in the Interim Report) about what we are talking about now as compared to what we were talking about before, and that we are not going to slide into checklists. But if we are talking about the whole Australian educational enterprise then I don't have any doubts at all. Beyond these centres of preoccupation there would be checklists everywhere ... We have got residue from something that was well-intentioned but it has died on the vine and it could happen again. I am talking about the choice of the words we use. Competency terminology I think, it is inherent isn't it that a lot of people will be thinking Lego when they think about learning and I don't think you can actually stop thinking Lego if you talk competency terminology. (University representative, Perth)

When I talk to the philosophy people and read those kinds of books there is no way you can talk about competency without the notion of minimum. It is an intrinsic part of the notion. That is, again we need to be up front that we are talking about minimum competency here and for them to go on and talk about excellence and quality is just in a different jargon. We also with the notion of competency are talking about a premise of prediction that if the person has these competencies they will then go on. Whereas most of the time in Universities, we say this is a body of knowledge and understanding and skills, and in a sense when they have got them we are saying they are certified and they have them. Not they will then go on and use them in this particular focused way and this particular job to do this particular welding job. (University representative, Perth)

7.2.8 There was additional discussion about terminology in terms of the relation between various concepts such as competence, competency, excellence and competency-based training, with suggestions that the arguments were often muddied by confusion between different terms.

I think an issue is the question of the distinction between expertise and competence. There is some work being done recently that suggests that experts work differently from competent,
beginning practitioners. It raises a lot of questions about the role of competencies. At what point of a person's career are they considered competent?  

(University representative, Brisbane)

I guess what we are trying to do in teaching is to come up with a statement of the competencies that are required of the practitioner in teaching that count for competence.  

(Professional organisation representative, Canberra)

There is a great deal of confusion between competent performance which all professionals obviously are required to do and a much more specific and narrow competency-based movement or training that we are talking about. I would have no problem in the way that you have put it just then in terms of outcomes within a frame, a much broader framework of knowledge, skills and so on. But I think we are talking about a much more specific and narrower concept ... There is a tendency to slide from one category to the other in rather an indiscriminate way.  

(University representative, Melbourne)

I feel that there is a real need to make a distinction. That competency standards does not necessarily mean competency-based training and assessment. I realise the way you have tied it together in this report but I think that this is going to partly inform the academic community. It would be unfortunate if they felt that automatically one leads to another. I know you appreciate the standards have lots of roles besides assessment, including informing the academic community about what is going on whether or not one moves to a competency-based assessment. I think in pointing out some of these shortcomings of the competency-based approach and there are many, it is important for the academic community who, as you point out are largely uninformed about the competency-based approach. Most of the other methods that we rely on and have been relying on for so long are often assumed to be perfect. They have no fewer imperfections. I think that as academics we have to be fairly honest that the level of knowledge in the educational literature in the academic community is not striking.  

(Professional organisation representative, Sydney)

7.2.9 In response to the question 'Can you describe competence without using what you call competencies?' a university representative commented:

I would have thought the answer to that is probably no. Unless it is a meaningless statement. I think that all of us could probably make some motherhood generic type of statement to say what a competent person was. I suspect that I.E.A. wouldn't find that a particularly good definition of what was a competent engineer. Nor would I. So I think in that sense there has to be some specific competencies ... and they can be much more specific with a particular discipline and profession than others.  

(University representative, Canberra)

7.2.10 Another university representative responded thus:

It then comes back to the issue about some of them being measurable and many of them are qualitative ... Some universities have a wish list of all these wonderful attributes of their graduates ... Some of that can be measured, some of it can't possibly be measured. Some of it is not the proper province or the necessary direction of the university anyway or any institution. So again we are getting back to (the problem) of competence or competency. Competence has to be broader than measurable competencies. But what that broader domain is, should in my view be left to the universities ... At least two thirds of (university students) have not the slightest idea of what they are training themselves to be competent for. What they are trying to get is competence in what we would call generic academic skills. That is problem solving, communication and analysis etc. Beyond that they are waiting until they get an interview and they are told they are going to go into IBM or something. At which point they expect to be made competent in particular workplace issues.  

(University representative, Canberra)

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7.2.11 **Rhetoric vs. reality.** Another university representative questioned whether the rhetoric matched the reality, whether the theoretical claims for what competency practitioners were about matched the outcomes they produce:  

I have been to a number of sessions on competency-based and heard employers speaking. The (session by a) bank is the one that comes back to me where they spent an hour telling us that they wanted people who presented well, who could articulate, who could communicate and who could go up to the front counter and do all these kinds of things. In the paper that same day they had an advertisement which said we will employ people who have got maths. So the reality between what the employers are saying and what they actually do is an issue that I would have liked to see confronted.  

(University representative, Perth)

7.2.12 **Conservative vs. futures orientation of competency-based standards.** A number of university representatives expressed concern that competency-based standards are inherently conservative and lack a futures orientation:  

Once you start to standardise and put things down you can get locked into thinking that these are really certain things about the profession. That they are going to endure. Once you have put it in place it can work against change. It can stifle a profession. I guess I liked the tables (in the Interim Report) where people from universities were saying that the role of university professional education is in producing graduates who are questioning and developing current professional practice. This notion of changing of professional practice is important from the university point of view so to me there seemed to be a tension between that idea - the role of the universities in so far as it pertains to professional practice. One of the roles is to keep questioning professional practice and keep saying professional practice may not be right. It ought to change. It ought to develop and it should be better in equipping people to do that. There seemed to be a tension between that on the one hand and on the other hand putting a lot of work into writing down what professional practice ought to be, almost like a recipe. I know that the intention is not to make it very small, narrow, rigid or specific. But there is still that danger even at a higher level that you entrench professional practice in a standardised way which may work against the need to question and develop and criticise and confront professional practice. I see that as something that needs addressing.  

(University representative, Brisbane)

If you get very specific about ... competencies then you have a danger that they will be inflexible and not able to keep up with the changing requirements ... If you try to get very specific then it seems to me that it's going to be self-defeating.  

(University representative, Adelaide)

If one really has to have them then one probably should date stamp them because they may be out of date next year. I think the formal resistance of the university system has been largely and significantly related to the fact that they cast things in stone. Whereas everything in the university is a questioning approach.  

(University representative, Brisbane)

And yet anecdotally one always hears about the colleague who is using the same lecture that he used in 1970. These of course are the exceptions aren't they? But the point is that whatever the method is ... we have to be constantly renewing and updating.  

(University representative, Brisbane)

7.2.13 **There were some contrary views on the nature of a futures orientation in the workplace.** One university representative with experience in workplace-linked programmes suggested that many employers were interested in education of staff for needs that will emerge five years hence:
Some of our industry clients in fact are using this competency-based education approach to actually put in place professionals that they wish to have in five years time. So it can be used as a very forward-looking approach where it forces the company and the academics to actually sit down in partnership to actually define what they believe is their heuristic in five years time. And try to move towards it rather than saying it just happened.

(University representative, Melbourne)

7.2.14 Another university representative expressed doubt about what such a process would mean in practice:

Of course we are talking about futures orientation of reforms of professional education. Is that about assumed workplace needs or are we talking about presumed workplace needs in the future? I mean, futures orientation, you are either assuming that this is what the future is going to look like or presuming that you know how it is going to be in some future orientation. I think that is one of the weaknesses of this whole area of debate in that there is an assumption that if you are not going to have competencies which are describing the here and now and are somewhat fixed in time then you have to make assumptions about what is going to be in the future and have a futures orientation. (University representative, Perth)

7.2.15 There was an immediate response to the last statement by a representative of a professional organisation:

It behoves the professions or the occupations to ensure that these competencies are kept as broad as possible to encompass that problem of the future and what is going to happen or (else) be constantly changing them every five seconds, that could be driven from the academic point of view though that is the important thing.

(Professional organisation representative, Perth)

7.2.16 Support for competency-based standards. And there were a number of other comments, mainly but not exclusively from professional organisation representatives, which suggested that many of the criticisms quoted above are inappropriate. They argued that the approach to development of competency-based standards did, in fact, take account of many of the needs which the critics had suggested were being overlooked. Generally they argued for broad rather than narrow statements and with knowledge and other attributes included in addition to performance based skills:

I would argue that what we are doing at least, in attempting to develop competency standards in teaching, is to proceed from a much wider view of what we see as competency. We do not see it simply as being behaviourist. We see it as involving knowledge, understanding and a wide range of attributes including values and ethics as well as competent performance in the work place ... I believe that we are accountable for the way we perform in what we do and if we are involved in preparing future entrants into the various professions then we need to be thinking about the full nature of what we will be requiring those people to do in the work place or where ever they happen to be practising ... I see competence as being linked to where ever we are performing our function as professionals ... In teaching I believe that people need to have theories and understandings about the way learning occurs and what motivates students. They need to have a wider and deeper level knowledge of the curriculum that they are endeavouring to teach. They need to understand how to assess learning and how
to communicate. There is a whole range of ways which require very high levels of skills and very high levels of performance for competent practice. I don't think we are talking just about learning a technical skill and applying that. I think what we are talking about is being informed by theories that we have acquired from other people. Also our own theories that we have developed ourselves in thinking about what it all means to us as practitioners. How we assess that situation that we are currently dealing with in terms of the knowledge that we have and the understanding that we bring to that and the judgements that we make about what to do in that particular situation. (Professional organisation representative, Canberra)

I don't really believe that when you are talking about graduates from the tertiary system or graduates in professional areas that it is possible to have a set of competency standards that can be divorced from the knowledge base of the discipline from which they have come. I think that any set of competency standards that don't take into account in some way the knowledge base are not worth the paper they are written on.

(University representative, Brisbane)

One of the major problems that we have been trying to struggle with in developing competency-based standards ... was an area where in fact we have developed cues to performance criteria at the lowest level if you like. The cues are calling on that knowledge base all the time ... It is worrying if the standards are to be taken without consideration of the performance criteria and the cues. People tend to extract an element of competency as if this is a separate and an individual thing on its own. Without reference to the performance criteria and the very specific cues into how you should assess that for a particular performance criteria, you don't call in the knowledge base.

(University representative, Brisbane)

What we would really like to identify with being competent is not only being able to do the thing and being able to meet those performance criteria but being able to have the background knowledge and the understanding I think this is the key to this whole thing and how to assess and measure and judge that is what is important and the check list, as I see it, is definitely out from that point of view.

(Professional organisation representative, Perth)

If you take medicine, it's a classic example ... I listen to the Disciplinary Tribunal all the time and it is always peoples' attitudes that get them into trouble. It's not usually technical skills or their knowledge base. It's the way they have treated people. (Of course), one's knowledge base is always changing. It doesn't matter about the area you are working in - working in a shop or a profession. This goes back to the competency that we worked on, that as a professional we were aware that our knowledge base must be changing. So that became the very broad competency to acquiring knowledge and managing change in certain research. The change in knowledge base I feel applies to everything and that will be an issue for everyone ...(Competency-based standards) should be kept as broad as possible.

(Professional organisation representative, Adelaide)

For this profession what is the minimum standard I want that person to be at the end of their educational preparation? What is the minimum that they can go out there with, to be able to be safe so the public is safe. They have allowances within those competencies and within the framework of the competencies developed that they are broad but they don't write the curriculum. That you can in fact be flexible enough within the curriculum. I would have to question when you said about your graduates being able to solve tomorrow's problems today whether they were going to in fact do that at the end of the educational preparation. There are different levels of competencies ... there is a whole range of knowledge that comes from learning. It's the intuitive knowledge, the tacit knowledge that people get along the way. You can't negate that. You still have to include that in competency somewhere.

(Professional organisation representative, Adelaide)
7.3 Professions' motivation in developing competency-based standards

7.3.1 Participants recognised the range of motives professional groups had expressed (see Chapter Four) for undertaking the development of competency-based standards. There were some further comments as shown below:

I must say the feeling that I get from that is that a number of these professional bodies are saying 'Well this is great because it is giving us a lot of money that we can play around with'. But I don't see any reflection coming out of there that any of them want to significantly change the way they do business at all ... They are mostly saying 'well yes we have learnt a few interesting things from doing this' but throw up their hands in horror at the idea that you can now have a simple competency test and decide whether anybody can practice in their profession or not. I agree with you further that there is absolutely no mandate there for changing the way the professions operate within the Universities.

(University representative, Perth)

I see them bringing some of the universities who are producing graduates who are not up to the same standards as others from other Universities within the one profession bringing them up. Rather than everyone comes down to the lowest common denominator.

(Professional organisation representative, Perth)

I think there is a political reality in all of this and that is that the movement has come from a political necessity to have a freeing up of the labour market situation and a greater mobility of the labour population around the countries. So part of the political pressure was to have national mutual recognition of qualifications or some other form of national registration or whatever for professional bodies. Now, given that in some sense is not possible because of the federal nature of the country then the professions are being asked to look at what is it that makes their graduates fit that sort of standard. That may well be minimum standards and it may well be entry into the professional standards. Then, to look at whether or not they can be mutually recognised across the country. Now, I think that the situation that you have described of the student coming out of a particular set of Universities with lower than expected standards is the great worry for the professions. Certainly one that is affecting the teaching profession of whether some states regard the products of other states as being inferior products for a whole variety of set reasons but if there is politically enforced mutual recognition. Then the profession has to wear the fact that the graduates are not being raised to that level. In fact the whole thing is being pulled down. I think that is of great concern both to the universities that are involved in that situation and for the profession as a whole.

(University representative, Perth)

It seems to me that the professions are in various stages of their history, their development, maturity, and their approach to competency or specification of standards. Whether the standards are in competency terms or in some other terms. The encouragement of the professions to keep that as an on going activity of the profession is a good thing. But it would seem to me that there is not a lot of evidence in too many professions who weren't doing that until this competency thing came on the agenda in the Australian scene over the last few years. It seems to have deflected some of the energies from all that and other useful things.

(University representative, Brisbane)

7.4 Entry level

7.4.1 It is clear from Chapter Four that the practices of the various professional organisations developing competency-based standards vary in terms of their
definition of entry level. There was a deal of confusion and variation in understanding during the capital city discussions which reflected that to some extent. The following comments summarise the range of views expressed.

If you are looking at entry into practice in that profession then you have an overall all-encompassing set of competencies that you must be able to do ... It is like with nursing, we have surgical nursing medical nursing and health care nurses and primary care nurses, paediatric nurses and so the list goes on. They can all meet that minimum criteria for entry. So it's an overarching type of statement. (Professional organisation representative, Adelaide)

And at the point of graduation do we want to somehow or other have some kind of competencies which are quite different from descriptions of the profession but has something to do with whatever kinds of characteristics a person has that allows them to find their way into a profession which may be very much more personal characteristics than we are used to thinking of here. (University representative, Perth)

(In) some professions, unless you have a year under complete supervision which is part of the whole process, you would expect them to be competent because they may well be going out to practice work on their own. So they certainly do need to be. So in some areas they are expected to be competent at that point and in others they are not ... And for some they may be even more competent than someone who has got slack and idle. (Professional organisation representative, Perth)

They are only a part of it and we have to keep inside the fact that they will further develop beyond their graduation point. If you focus on the possible outcomes of a particular university programme and try and just list those you are going to end up with minimums which would far underestimate the value of what they have completed I would think. (University representative, Perth)

You don't want to stop the excellence is what you are getting at. You don't want to stop the development and the lifelong learning and so on but I don't know where you would draw that line. What you call this is a basically competent person. We do that all the time when we graduate people into the professions. Whatever we want to call it, we don't call it competence at this stage and we are making an assumption. (Professional organisation representative, Perth)

Well there are some professions who want to take the graduate and they want them to be able to deliver right then. In the debate there have been others who see their graduates as quite incompetent for a long time and it is interesting to me how you identify in a graduate what is a future competence and that might turn us around thinking about teachers, those who graduate with distinction - is it true they don't often become teachers down the track and others come through and that is the big concern I would presume for me whether these identified competencies are actually predictors of anything. (University representative, Perth)

7.5 Credit transfer and RPL

7.5.1 The good intentions of credit transfer and recognition of prior learning (RPL), such as creating equal access to tertiary education, were considered to be thwarted somewhat by the competency developments. A number of foreseeable problems were raised. Concern was expressed about pressures being applied to the universities in light of support for CBT in TAFE and the agenda for cross-accreditation schemes to be implemented.
There are other agendas at play aren't there? There is the way in which CBT is sweeping through TAFE at the direction of the management. In five years every course will be written in competency-based terms. Add to that the cross accreditation schemes and the recognition of learning. We are not looking at this in isolation. In fact all those other developments are impinging on us. They are forced on us. (University representative, Sydney)

7.5.2 Some academics regard RPL and credit transfer as an intrusion. One academic believed it would create complications for those courses that already have an elaborate accreditation process because of the bureaucratic implications.

In my experience in the engineering profession it is generating an incredible bureaucratic nightmare. The first is the bureaucratic intrusiveness of the whole thing ... I am terrified that it will be a parallel accreditation mechanism. It is irresistible. You've got a list of things on a piece of paper and it's irresistible to start ticking boxes. As I said before, I think that will lead to a uniform crushing oppressive system rather than one that now allows a much freer variety and quite an exciting diversity for courses ... The last one is transferability ... That is, if you test one particular competency how do you know that it is transferable to a different situation? (University representative, Melbourne)

7.5.3 However, another university representative believed a benefit to be the recognition of individual learning, as opposed to standard paper qualifications, for credit transfer.

I see that as one of the pluses of the movement. That it offers an opportunity to switch the focus in terms of credentials from formal courses and how they are offered to the individual ... It could be in fact one of the major justifications in trying to sell this whole business to an otherwise fairly sceptical or downright hostile higher education sector. It switches the focus away from courses to individual learners. (University representative, Brisbane)

7.5.4 It was argued that the competency approach changes the focus from gaining entry into university through formal qualifications only, to acknowledgment of different ways that experience is acquired. The same person made the point that not to recognise RPL is to build deficiencies and disincentives into the system.

If one is going to admit students on the basis of recognising their prior learning however they acquired it seems to me a plus. Otherwise one is building in deficiencies and disincentives into the system... I don't know what all the implications are but certainly they would have to include a greater willingness that currently is exhibited in terms of allowing the students who undertake challenge tests or exams or readiness tests. (University representative, Brisbane)

7.5.5 One of the more common concerns raised was the issue of university quotas and the selection process. A university representative cynically questioned whether university quota systems had been considered in the development of credit transfer and RPL and their expected enhancement through competency-based approaches. He suggested that it was the quota system that drove the selection process and that there are inconsistencies which are difficult to resolve.

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There is no acknowledgment about quota systems. Now without acknowledgment of quota systems, credit transfer is just a totally different ball game. We would love to take thousands more TAFE students but if the system is based on a quota system you just can't do that. Someone has to go out to take someone else in. The whole notion of competency-based, if all the students have got the competencies to get into (the course) but there are no quota positions, is a mute argument. It is dead. So I would like to see more discussion that that is what the Universities are constrained under at the moment. (University representative, Perth)

7.5.6 A suggestion was made that selection processes would have to change to accommodate the intended multiple pathways for university entry and that this is an issue that should have a high priority.

I think one of the earlier things that will confront universities would be the selection issue. We will get more and more students in the future through multiple pathways, with different sorts of qualifications. If development doesn't change and something like $20 million dollars does go into further work on the Mayer competencies, their definition and measurement, universities will have a lot more evidence from which to look at people seeking places. You get the demand for places and maybe that is an issue. We will need to address this one far earlier than the one of our graduates meeting the needs of professions.

(University representative, Sydney)

7.5.7 This was thought to have the potential to be an administrative nightmare. How indeed would a person's prior learning be evaluated or categorised? This was expected to be particularly difficult if that person does not have formal documented evidence. Also, the evaluation of the prior learning of each applicant would be very time-consuming.

One of the difficulties at the moment is that it takes a long time to work through the types of experiences that people have had. And not in classified, categorised, documented industry experience. Those people take you hours to work through in terms of trying to gather the evidence that is there in their work history. To try and document and determine whether or not, and it is often not but sometimes is, credit can be granted.

(University representative, Brisbane)

I have no problem at all about advanced entry and so forth on the basis of evaluation of an individual student. Of course the problem that you face is that, if there are a lot of students, it takes a lot of time for each one. It really is not very good. So there are obvious advantages in having some other evaluation process to assist you in that. The problem is that it is not clear from what you have written (in the Interim Report) that there is any evidence that competency-based assessment is going to be helpful.

(University representative, Brisbane)

7.5.8 Two other important issues were discussed. There is the gender issue in that courses that offer trade-related certificates tend to be male dominated (other than, perhaps, nurse's aides' or hairdressers' courses). How would a new selection process accommodate for such inequalities?

I find that is very gender specific. Almost all the males who apply come in with trade qualifications or technician awards. Or, other things which give you a clear stepping stone from which you can then build. Or a base from which you can then build an assessment of whether or not they are competent. Very rarely, and I guess hairdressers and nurse's aides are...
the exception, but very rarely do females come in with such well documented training and experience. (University representative, Brisbane)

7.5.9 Also, what assurances are there that skills and knowledge can be transferred from one situation to another, particularly from a work-based situation to an educational setting? It was suggested by several university representatives that one might do a disservice to students in allowing credit transfer for students who may not cope with the academic requirements of a particular course if entering at a later stage of the programme.

There would be few universities I think who would be happy just to pick up competency level X and say that will get you into here because I think it would do a gross disservice to the student. No one ever talks about this. It is as if the universities are holding people back but nobody ever thinks about the student who is inadequately prepared to fit into a classroom and then failing in that university. (University representative, Brisbane)

7.5.10 This was seen by one university representative not just to be a potential problem for the student, given the advanced entry, but also for other students in the course and for the course in general.

If the mechanisms were automatic - that is people get in because they have qualifications based on a different experience in significant numbers and it turns out that is not an adequate background for the course, then it will obviously effect what happens in that course. It would disadvantage other students in that course. But that is a presumption that really has to be tested and I don't have any evidence on that. (University representative, Brisbane)

7.5.11 On the other hand, another university representative suggested that students do not always seek maximum credit for its own sake, with their ability to cope with the course often being their primary concern.

Students often help you by volunteering not to take advanced standing on credit once they have been well briefed about what the requirements will be in the next stage of the programme. When you are trying to form a judgement and you have doubt, often informing the student about the expectations of the next stage allows them to contribute to the decision in a very constructive way. I think you would be surprised at how often students take a conservative view themselves and opt to not take the exemption ... Further research is crucial. I think that if competencies are to be used, either for entry or in course construction at a tertiary level, we need a lot more work done. Teasing out these sorts of issues and informing the academic community about them better than they are at present. (University representative, Brisbane)
7.6 TAFE - higher education comparisons

7.6.1 There were a number of comments that mirrored statements in the press by several vice-chancellors that a competency-based approach to education and training was acceptable and appropriate in TAFE courses but that it was unacceptable and inappropriate in university programmes.

I think there is no evidence as I see it in this country that engineering is in any way suffering from serious shortcomings. Now I make that statement in contrast to the statement about maybe seeing shortcomings in engineering training. I would like to emphasise the difference between education and training. If you want to talk about technicians in our profession in a sense we are talking about competency-based approaches. You are looking for a set of skills competencies if you are looking for a technician or a para professional. I think the whole exercise becomes fundamentally different if you are talking about a professional engineer.

(University representative, Sydney)

From a university perspective I have been disconcerted by the way the engineering professional body has plunged into this with unbridled enthusiasm. It seems to me that those who like making lists and having the certainty of measuring things are the ones who are dominating this area... We constantly assert that we are training leaders rather than workers, chiefs rather than Indians. Yet it seems to me that you are not measuring that in competency-based movements... I can readily enthuse about competency-based training at the TAFE level.

(University representative, Melbourne)

7.6.2 Not all agreed with this perspective.

I don't go along with the view that CBT is OK in vocational education and no good in universities. I think it is no good anywhere. Because I think in all spheres of activity you need conceptual understanding and that this movement gives insufficient emphasis to it.

(University representative, Brisbane)

I think you are right in saying that in practice in vocational education as things are very narrow... they become very reproductive. A lot of money goes into writing them down. Very little money goes into actually teaching them. Hardly anyone knows how to teach them and even fewer know how to assess them. I can't see the thing being sustained for a decade. I think the interesting thing is that nobody seems to really care what the practice is about. It seems to be more an ideological position than a position about teaching and I think that is the interesting thing. What is the ideology underneath all of this discourse.

(University representative, Brisbane)

It comes back to the comment about being excluded from the initial discussions. That has been the complaint in the TAFE sector. The way they were excluded from initial discussions.

(University representative, Brisbane)

7.7 "What's in it for academics?"

7.7.1 While the general feeling in the academic community towards a competency-based approach to higher education is negative (see Chapter Five), the majority of opinions expressed by university representatives at the capital city discussion
sessions indicated an openness to the possibility that current work being undertaken by the professions on competency standards may have some benefits for universities. There are, of course, those who believe that there is nothing to be gained from the competency movement and who see it as an undesirable control mechanism or a monitoring procedure.

If there is nothing in it for a university academic then it is obviously a monitoring procedure and that has a different emphasis and a different application and a different set of rules and guidelines as to why you do it. The parallel with performance indicators (is that) it probably doesn't affect an academic one iota but it is a wonderful control mechanism.

(University representative, Perth)

7.7.2 The feeling that the existing relationship between the professions and universities works well makes some academics sceptical about the direction of the competency movement and the reasons for wishing to introduce it into higher education.

The sort of arrangements with professions that the academics have negotiated by themselves over the course of a long period of time has been working very satisfactorily (and) could be totally subverted by ... the competency movement ... People are seeing a very real concern that there will be interference in the curriculum.

(University representative, Adelaide)

7.7.3 Also, whenever scepticism was evident, reference was often made to related developments in the USA and UK in the 1970s and 1980s respectively. There were contrary views however.

I can actually see the profession being a diversity of courses across Australia. Whereas at present each state is pretty uniform. I would like to see students making more active choices about going to a particular state because of the particular emphasis. But knowing that there is a level of competency that they will come out with but with different emphasis ... can only add to the profession and to (making it) challenging rather than making it uniform. I think that if you get people with slightly different knowledge bases from each educational institution (it) just encourages debate in the whole knowledge area.

(University representative, Brisbane)

7.7.4 The discussions disclosed particular benefits to be gained from the development of competency-based standards. Firstly, they provide a challenge and an opportunity for academics to re-assess their courses, teaching methodologies and even their overall educational philosophies, despite problems of implementation.

It really has a very useful effect in making people look at their methodologies and their education and training processes. When you go to take it out of the investigative arena and seek to apply it and when it looks like it may have some statutory or even some real world application, that is where we get all these difficulties and objections. I think that it still comes back to my basic credibility point. You can't take it out and apply it to people in the real world until you have got the credibility factor established.

(Professional organisation representative, Sydney)
Since interaction between the faculties and the professions takes place anyway, the professions' competency projects allow each group to engage in reflection and assessment of the curriculum.

I don't think there is any question about the requirement for having some kind of professional standards. One must look at how that in turn interacts with the university curriculum ... Whether or not we've always had them I think is a question that is worth asking. I think that a lot of professions in fact have had implicit standards; certainly in my discipline and profession for a long time through a system of course accreditation and through a system of registration. What really one has to ask is what is this and what does a competency-based approach do that we didn't have already. What it might have done is to cause the discipline and the profession to engage in a period of reflection and assessment. I think that has been very healthy.

(University representative, Brisbane)

It was suggested that there were advantages for academics, in a consultative process, to be able to determine whether what is taught in their disciplines is really applicable in a work setting.

I think that kind of dialogue is really important? My recent knowledge comes from an evaluation of (school and industry links). At one end of the spectrum you see firms who see themselves as corporate citizens who are just there to help. But at the very positive end, the other end of that spectrum, you see firms and schools acting as genuine partners in the education of the young people. Now in universities, with our professions, if we can get that kind of working relationship I think each can contribute in co-operative ways which will enhance curricula. I think will probably enhance the whole of the education you go into.

(University representative, Sydney)

They are not too far away from the kinds of subjective assessment which is done now. This is test and re-test isn't it? This is the process whereby the real world problem is matched against the developing competency in the educational training process. It is the capacity of the student to think, that is being assessed. You can't do that in any measurable or technical way. So what happens essentially (is that) the capacity of the developing student to perform is assessed in an incremental fashion. Now am I wrong in saying that that is the method by which we are allowed to go out and test ourselves in the real world?

(Professional organisation representative, Sydney)

Competency statements may provide the means for better articulation of what is included in courses and could act as guidelines. It could provide enlightenment as to how courses actually connect with each other and how this can be improved.

I think that this work that has been done on professional competency standards is a useful document. It's one that we will let other people use as a guide to the sorts of things that are included in courses. But it will certainly not be driving tightly any professional development work that we do. We have a problem that a lot of others don't have. That is, we have a lot of pseudo or quasi (professional) degrees ... I do happen to believe in a deep study of the disciplines and the knowledge base for the degree - as well as the knowledge skills since many of those courses lack the skill or base. We are working for the Deans ... to see how we can bring those groups to a professional performance standard.

(Professional organisation representative, Melbourne)
Also the competency movement could be beneficial in providing a vehicle to align, as opposed to standardise, the course standards of different faculties.

To come back to the statement, why do we need something different? Our assessment process has served us fairly well, whatever its faults may be. I don't know that we will get a generalised acceptance of the application of competency standards to a profession. Whether it is used for the processes of registration or for the assessment of overseas qualified graduates or for aligning the standards of faculties until we can come to some resolution of these problems in fairly simple comprehensible terms the average professional can understand. (Professional organisation representative, Sydney)

There was some concern that the current debate over competency standards occurring in the press would harm relationships between professional organisations and universities established over many years. In the case of nursing, it was pointed out that the development of competency standards for that profession had pre-dated the recent work of other professions, had been undertaken for different reasons, and was now being damaged by tensions created by conflict between members of the competency movement and university representatives:

In nursing, we started a long time ago and for different reasons. Now I think that this debate has actually broken down the goodwill and the relationships that we had with the higher education sector... I feel that this debate, while I am sure it is healthy, is really creating more of a tension. (Professional organisation representative, Adelaide).

The sort of arrangements with professions that the academics have negotiated by themselves over the course of a long period of time and that have been working very satisfactorily could be totally subverted by the kind of imposition that we have now with the competency movement; and this is what is going to happen. (University representative, Adelaide)

How should knowledge be integrated into competency-based standards?

The issue of "knowledge" was raised in most of the capital city meetings. Some participants argued that universities have a special role in the creation and transmission of "knowledge":

If we don't recognise the role of universities in awakening students to the problematic nature of the knowledge base, its changing nature, and that it needs to be reflected upon and criticised, then we could be reproducing knowledge bases that could be used to select certain kinds of action that are appropriate today, but may not be current tomorrow. So I think the problematic nature needs to be reinforced. (University representative, Brisbane)

I don't believe that when you are talking about graduates from the tertiary sector or graduates in professional areas that it is possible to have a set of competency standards that can be divorced from the knowledge base of the discipline from which they have come. I think that any set of competency standards that don't take into account in some way the knowledge base are not worth the paper they are written on. (University representative, Brisbane)
I must say I am concerned that people raise the knowledge problem. I would like to take it a little further and ask what can be said about a model that raises that question. If we are asking, where does knowledge fit in?, I think that raises a whole host of concerns in itself.

(University representative, Melbourne)

7.8.2 One participant pointed out that the competency standards now being developed in Australia are intended to provide a basis for making curricular decisions about necessary knowledge bases and saw that as a fundamental difference from some earlier approaches to competency-based education which began with sets of instructional objectives:

You say [in the interim report] competency-based education was introduced as a concept in the late 1960s... What people are saying today is that the competency statements should be used by educators to draw up the curriculum framework utilising their judgements and expertise about the knowledge base: the knowledge base which will allow that performance to be demonstrated. I think that is fundamentally different and is conceptually different from the behavioural objectives movement.

(University representative, Brisbane)

7.8.3 The extent to which knowledge should be addressed in competency standards was also an issue addressed in at least one meeting. One participant considered that knowledge should be the most fundamental part of competency standards:

The role of knowledge is pretty fundamental to any notion of competency standards either for the professions or for any groups of people whether they are at a technical level, tradesmen, or whatever. Knowledge is absolutely fundamental. It is completely ludicrous to suggest that anyone could have a set of competency standards which were going to inform possibly a university curriculum without knowledge being the most fundamental part of it... The competency standards are about the underlying attributes that enable people to do the things that they need to do. Now when it comes to universities, they presumably can have a look at these competency standards and from them, infer the sorts of things that they would want to put in their courses.

(University representative, Sydney)

7.8.4 Other discussions referred to the changing nature of the professional knowledge base and the implications of these changes for the development of competency standards:

One's knowledge base is always changing. It doesn't matter about the area you are working in-- working in a shop or a profession... We were aware that our knowledge base must be changing. So that became the very broad competency of acquiring knowledge and managing change.

(Professional organisation representative, Adelaide)

7.8.5 Also questioned was the meaning of broadly-stated, generic competencies independently of the discipline in which they are developed:

The real issue for me is, if you talk about knowledge, can you define generic competencies independently of the knowledge domain in which they are embedded? From my reading and analysis, I don't think you can. And whenever I look at a generic statement, I can apply it to
my one year old grand-daughter or to my PhD student and classify them at the same level. But they are working on totally different problems.  

(University representative, Sydney)

7.8.6 Others, particularly academic staff of faculties of education, saw parallels between current competency-based education and training and earlier education movements:

I come from a background of nearly twenty years ago doing mastery learning, criterion referencing, minimum competency, and all that stuff which went down the gurgler a long time ago for the very reason that it was very narrow. A lot of people in the rapidly-ageing teacher education profession would remember that and have worries about the competency-based approach on the grounds of that.  

(University representative, Adelaide)

My perception of the competency movement at the moment is that it has grown and achieved its support and energy from a constituency that hasn't had experience of the previous competency debate. So it seems to a lot of people who are actually putting a lot of enthusiasm into the area that it is a great idea. There was a large community that went through the previous debate which had lots of reservations... It may be that it is going to have to evolve a new language. I don't see how the competency language is ever going to wrap itself around the issues of excellence.  

(University representative, Perth)

7.8.7 In reply, another participant in the Perth meeting commented:

I think the whole movement is carrying so much historical baggage with it that in a sense it is doomed, or very few people will support it because of that... I agree. I think the notions of excellence are the ones that we really ought to be looking at: quality control and excellence.  

(University representative, Perth)

7.8.8 These comments suggest that a challenge confronting competency-based education and training initiatives in this country is to demonstrate that they are attempting to do much more than specify and assess lists of narrow, observable workplace tasks.

7.9 Capacity to revise standards through research

7.9.1 Some academics expressed concern that competency standards could inhibit development within a profession:

If one really has to have competency standards then one probably should date stamp them because they may be out of date next year. We must review these regularly otherwise they could become set in concrete. It would be a terrible drag and actually prevent the profession developing in any way at all... I think the formal resistance of the university system has been largely significantly related to the fact that they cast things in stone. Whereas everything in the university is a questioning approach.  

(University representative, Brisbane)

Once you start to standardise and put things down you can get locked into thinking that these are really certain things about the profession. That they are going to endure. Once you have put it in place it can work against change. It can stifle a profession... One of the roles of the universities is to keep questioning professional practice and keep saying professional practice may not be right. It ought to change.  

(University representative, Brisbane)
Several participants referred to the need for research into competency-based approaches, particularly research aimed at establishing that competency standards are capable of providing higher levels of professional competence:

The need for further research is crucial. I think that if competencies are to be used, either for entry or for course construction at tertiary level, we need a lot more work done teasing out these sorts of issues and informing the academic community about them better than they are at present.

(University representative, Brisbane)

The question of research has to be addressed otherwise the credibility of the whole thing is going to be continually suspect. It will be sniped at incessantly by the well informed academics who point out this deficiency. How you address it I really don't know. I think it is the business of people who are professional educators... Surely there must be well-established techniques for trialing various things and subjecting different populations of students to different approaches.

(University representative, Brisbane)

Assessment

Implications of Competency-Based Approaches. Many participants in the capital city meetings saw the introduction of competency-based approaches to education and training as having significant implications for how assessment takes place in institutions of higher education. Underlying this view was an expectation that competency-based assessment would be based on the assessment of performance rather than the assessment of a knowledge base, and that this shift in approach would not be easy for many academics:

I think that the assessment of performance has a huge implication for the higher education sector. I think that a lot of academics--with respect to them--probably don't feel comfortable. It is quite different from assessing a knowledge base and it has huge implications... I don't know whether the academics are starting to work through that one and can see what an issue it would be.

(Professional organisation representative, Adelaide)

Others saw competency-based assessment as being introduced to replace existing methods of assessment and were concerned about the ability of a new, apparently more precise, method to replace a method that had been developed and refined over a number of decades:

The trouble with seeking to replace the current method of assessment is that it is seen by people out there who have been through it that it has been successively refined by years and years of feedback. There is this wish for more evidence to establish that a method to replace it--a method which has more specificity, is more objective--is sufficiently tested and sufficiently dependable to have credibility attached to it. This is one of the problems that is making people sit back and watch very carefully what's going on.

(Professional organisation representative, Sydney)
7.10.3 However, others in the groups pointed to the widespread use of workplace and performance assessment in university courses and argued that the introduction of competency-based assessment in these courses would be little different from current practice:

Within many faculties within universities there is already a considerable degree of competency-based assessment going on.... It's widespread, in the teaching profession, for example, or in accountancy and medicine. In fact most universities have some area of competency-based assessment. I don't think they will be changing their assessment at all if suddenly this is mandated.       (University representative, Sydney)

7.10.4 Workplace vs University. A number of persons attending the capital city meetings went further and commented on the value of workplace assessment as part of the total assessment of a student's developing competence, including more traditional methods of course assessment:

You can certainly make a judgement about them and their knowledge and their capability while they are out there and, quite clearly, being there with them, when they are unsafe--you know, because it is a behaviour they are demonstrating. That doesn't negate the form of assessment from the university as well, because they are having written work as a formal theory-type assessment.       (Professional organisation representative, Adelaide)

I should say over half the time is now spent in the practical situation and staff being there for hours and hours gives us a far better way of assessing. We have found it pretty reliable and we have worked out the criteria, the skills, with the departments of the systems.       (University representative, Adelaide)

7.10.5 Others saw considerable value in competency-based assessment in clarifying assessment processes and encouraging assessors to reflect on their current practices:

One of the great things that I saw was when we started to concentrate on assessment and performance in the workplace that we called on the assessment skills of the supervising clinicians. They went through training assessment programs and I think that has just been the most remarkable thing that has happened because some clinicians have been there for 15 or 20 years and are really reflecting on what they are doing because they know that they have to make some very valid assessments of their students.       (Professional organisation representative, Adelaide)

7.10.6 Higher Order Skills. Responding to encouragement to think in terms of workplace roles and functions rather than narrowly-prescribed tasks, some representatives of professions described difficulties they were having in reliably addressing higher-order professional skills. The reliable assessment of professional capacities such as clinical reasoning were considered far more difficult than the assessment of routine tasks and lower-order skills:
Representing two professions that are now looking at the assessment stage, that is one of the greatest difficulties: how we can reliably and effectively test the higher order skills. It is so much easier to test skills and outcomes. But even from a professional point of view, a clinician's point of view, they are still very concerned as the academics are about how you actually measure clinical reasoning. (Professional organisation representative, Melbourne)

7.10.7 Assessment costs. The costs of competency-based assessment were raised as an issue in a number of the capital city meetings.

We have a cooperative education programme for a very small number of students--something like 20 a year--and it involves two six-month industry placements and assessment is by the industry and the academic supervisor. I have to say that it is hideously expensive and very complicated to run for 20 students. (University representative, Adelaide)

7.10.8 Some argued that the higher costs of workplace assessment might be lower than the costs of incompetent professionals:

There should be a focus on assessment in the workplace rather than in the classroom. I think that is the biggest issue... I would argue that it is cheaper in the long run because of the costs further down the track. You have inefficient workers, or inefficient professionals, or not interested professionals, so I would certainly argue that it isn't as expensive in the long run. (Professional organisation representative, Adelaide)

7.10.9 These discussions raised the question of whether the costs of workplace assessment are fully understood by advocates of competency-based assessment:

I think DEET do know because it's something they do for supervision of teaching practice now. It's a massive amount of money and they're looking every which way to cut it back. At the same time, they're wanting competency-based standards which involve this kind of [workplace] assessment for reliable and valid assessment in terms of competencies. There is a Catch 22 somewhere. (University representative, Adelaide)

7.10.10 Issues of Control. Some participants saw the potential for a significant shift in control if more assessment is to occur in the workplace:

If there is a general feeling that many competencies can be assessed in the workplace... that has tremendous implications for tertiary sectors because the power and control is going to move right outside the tertiary institutions. (University representative, Adelaide)

7.10.11 On the other hand, academics who have been involved in assessing students in the workplace reported good cooperation and interaction between academics and workplace supervisors:

We do have the control. We have a technique developed where we have supervising teachers who are fundamentally chosen by us in cooperation with the school. We work in the schools. The academics are actually out in those schools as well as the students... The assessment is made jointly between a supervising teacher who supervises students in the school and a
We are working cooperatively in a way which we have never worked before. I must say this has been kicked along by this whole movement. (University representative, Adelaide)

We certainly felt a threat in some way. It has been interesting to watch the changing attitudes of some of the academic mentors who spent time with the industry mentors out there. I think there has been a perceptible change in the sorts of things they did the report for: their prioritising of the things they thought were important. (University representative, Adelaide)

7.10.12 Implementation? While representatives of professions were often in agreement that the development of competency standards has had a range of benefits for the professions, there was uncertainty about how to proceed to implement the standards in terms of assessment, and some questioning of whether that was desirable in any case:

In lots of ways we are seeing [competency standards] as a very healthy tool by which we can revisit some of those minimum clinical standards that we have. But in terms of assessment, we are feeling much more nervous about that because we value our relationship with the universities. We don’t want to cut across that. But I don’t think we would take it much further. (Professional organisation representative, Melbourne)

7.10.13 Another participant agreed with this sentiment:

We are also involved in the development of our standards at this stage. We would feel very cautious about going into assessment for much the same reasons as you have been saying. We have found it a good exercise for our profession. But we feel we are not getting enough information from NOOSR about what they actually want us to do in the assessment stage to feel secure. (Professional organisation representative, Melbourne)

7.10.14 Current university involvement in workplace assessment. In a number of the capital city discussions, the point was made that currently students undertake field placement and assessment of their performance often involves professionals in the workplace. The following question was put in several instances - Do those who actually have professional people out in the workplace doing assessment of students for them feel they have handed over control outside the University? The following are excerpts from one such discussion:

No, we do have the control. We have a technique developed where we have supervising teachers who are fundamentally chosen by us in co-operation with the school. We work in the schools. The academics are actually out in those schools as well as the students ... The assessment is made jointly between a supervising teacher who supervises students in the school and a university academic ... We have developed a good interaction, we haven’t given away anything, they haven’t given away anything ... We are working co-operatively in a way which we have never worked before. I must say this has been kicked along by this whole movement. (University representative, Adelaide)

A lot of our Registered Nurses have become far more reflective on their own practice. What happens is that we work in a similar way. The academics will have their own hospital
organisation that they go to. They do a lot of liaison with clients and going out and making sure that they know what the outcomes are that we desire from that placement.

(Professional organisation representative, Adelaide)

7.11 Implications for university curricula

7.11.1 There were various views expressed during the capital city discussions about the implications for university curricula of the development by professions of competency-based standards. Those who expected positive outcomes mentioned such benefits as the development of more flexible curricula, assistance with the design of continuing education programmes and an improvement generally in curricula due to heightened awareness among academics of the need to continually review courses and teaching.

One of the things that I see is that, if there are standards set by the professions, ... we actually have a lot more flexibility in the curricula. Also in how we go about actually meeting those standards. At present the situation is that the professional body has set down guidelines based on hours or other standards. In some way they wanted to make it uniform across the nation. I actually see that, by having a set of competencies, universities will have a lot more flexibility. They can vary the emphasis that they want to have in particular courses.

(University representative, Brisbane)

I think if you can take it just one step further. If you have a set of standards, whether you call them competency standards or not, it seems to imply to me must occur is this. There has got to be some kind of well articulated relationship between those standards and some system of continuing education for professional groups which may in turn have implications for what goes on in any university. I see those two things as being inextricably bound.

(University representative, Brisbane)

One of the interesting things about this competency-based movement is that it has sent the universities into an embarrassed flurry trying to define what it is that they do. Nobody has challenged them to do that before or not for a very long time. They talk about traditional excellence a lot and it is a lot of high blown rhetoric.

(University representative, Melbourne)

Whatever the method is, we have to be constantly renewing and updating. That is why I said that if there isn't to be some form of approach towards competencies as a response to expectations of our society then what is the response? (University representative, Brisbane)

7.11.2 Those who expected a negative impact on university curricula from the development of competency-based standards spoke of distortion of content by workplace demands, devaluing of higher level outcomes, creation of uniformity, discouragement of diversity and overall loss of control by academics of curriculum design processes.

Every institution I have ever been to is different. In our institution right now this year we no longer have the core we had three years ago. So I wonder about what goes on in terms of competency-based systems and professions that will define the core and the rigidity and difficulty of changing it and the notion that you and I in our institutions ... are going to be the
same. I don't think that is what universities are about. I think the students should vote with their feet and we shouldn't be going to a uniformity system. I can hear that trend coming through and the question I would ask ... is, 'does it lead to uniformity or does it encourage diversity?'. Because once you start to have competencies there is an obvious implication.  
(University representative, Perth)

One of the things that people are now talking about is that they are getting hold of some of the competencies that are being developed in TAFE. The people are being tested on emptying ashtrays and that sort of thing. That has tended to polarise the debate. That is the way people are seeing it. I think that coming now from that polarised position, people are seeing a very real concern that there will be interference in the curriculum.  
(Professional organisation representative, Adelaide)

7.11.3 There were others who believed the fears of broad intervention in university processes by external bodies were fallacious.

The other aspect (is) the threat that Universities see to curricula. (It) is quite fallacious for people to think that competency-based training is going to be a means of Big Brother coming into universities and saying what the curricula will be. That is the kind of fear that should be dispelled. Higher education needs to be firmly aware that ... it is going to be (concerned with) that which would inform practice. It is going to put the pressure on reviews to keep updating competencies and the like with development of technology and research. That doesn't mean to say that a competency-based training at university is a lot of rot. The two have to go hand in hand.  
(University representative, Adelaide)

(It is suggested that) because the professions want this at the end of the line therefore you must have a competency-based education all the way through. I don't believe that is at all one of the implications. I think the only implication that I myself see, is that at the end of the line there are these things that have to be met by the person going through this particular course. The way you get there is your own business and not, 'you must from day one base everything you do on meeting competencies and having a check list' ... It shouldn't alter the way we do things; it just means we have a better vision of what is needed at the end of the line as far as what is required out there. If we haven't got that now we are missing the bus anyway and I am sure we have got it now.  
(Professional organisation representative, Perth)

7.12 Implications for non-professional faculties

7.12.1 In the survey responses reported in Chapter Five, there were no significant differences between academics teaching courses directly linked to particular professions and academics teaching general tertiary courses. In the capital city discussion sessions, a few representatives raised the particular circumstances of general courses and the impact of competency-based standards on them. One suggestion related to the fact that teachers are expected to be competent both in the educational field and in the discipline content of their teaching. It was suggested that the development of competency-based standards for the teaching profession may have implications for such discipline areas as English, history or the like.

Unfortunately there is no-one here from the general Arts or Sciences but we are all related to professional preparation of the graduates or undergraduates. One of the problems which
arises which we have noted from the Council of Deans is that the knowledge base of a teacher is part and parcel of the preparation of the teacher. The teacher must have competency in the knowledge base. That is what it is all about - developing knowledge in others, or facilitating. The implication can be that taken to its limit the competency-based training, as in the case of your work, would apply to say courses such as English or Classics or History. On the grounds that this is the very material that is going to be used in the preparation of teachers. The knowledge base therefore in the general degrees really may well have to be honed or shaped to suit curriculum in the field. That is a concern that has been expressed.

(University representative, Adelaide)

7.12.2 This brought the comment:

I think we have got to the Trojan Horse stage. Just getting back to your original question. Say the accountants agree that there has to be some competency in human behaviour; the School of Accountancy will trot along to the School of Psychology and say you will teach this unit in such and such a way and you will assess it in such and such a way to deal with these competencies. The Psychology Department says no, we don't think that is comprehensible in terms of what we think a university course in psychology ought to do. The accountants will say we will go and get it taught by somebody who is a bit more flexible than you are. So I think that some people see that the profession will become the Trojan horse. It will be dragged into a set of competencies. It is more a matter of how once again you specify and I think you specify the performance and you assess the performance and I think there are many ways to dealing with it.

(University representative, Adelaide)

7.12.3 Another view was expressed which suggested that competency-based standards were inconsistent with the educational philosophy of a number of university disciplines.

It is surely no accident I think that at this point at the late 20th century where all sorts of things are coming unstuck that there is not just an area of competency-based training, but in all areas a desire, even mania for certainty, in areas where there can be no such thing. I mean defining knowledge by competencies is to me totally... I am actually not opposed to the idea and I don't want to sound heated about it but in certain areas it is a nonsense. Those people here who saw 'Dead Poets Society' may remember the competency-based approach to poetry which was satirised very early on where the poems greatness was plotted by using two co-ordinates to measure the poem's greatness. The point is relevant, I think, because competencies are going to have a different impact according to where they are applied in the university. They are going to mean something different and they are probably largely irrelevant in areas like history and English literature. They assume knowledge is something quantifiable and linear. If a new book is published or a new novel is published it would be assumed that there is a greater body of knowledge to absorb according to the competencies based on that knowledge. This is simply not the case. People don't, when they are doing a literature course, study every knowledge or novel ever written - they sample. Another novel does not mean a sum total in addition to the existing state of knowledge. It just doesn't work like that. It means you have another perspective about additional standards in dynamic relationship to a previous tradition. It doesn't necessarily add to it and it may detract from it. It may exist in all sorts of ways. Things like philosophy and all sorts of other things come into these sorts of situations. I think competencies tend to be reductionist.

(University representative, Melbourne)
CHAPTER EIGHT

A VIEW OF COMPETENCE THROUGH A RELATIONAL MODEL

8.1 Executive summary

8.1.1 It is not within the project brief for the authors of this Report to make recommendations concerning the matters investigated. Rather, the Report presents in the first seven chapters a summary of the data collected and in Chapter Eight an analysis, using a view of competence through a relational model, of some of the issues that have emerged.

8.1.2 The evidence suggests that universities, the professions, employers and the community have much to gain from the activities concerned with the development of competency-based standards by the professions. It is doubtful that these gains will be in exactly the form that some in the competency movement intended but the outcome reflects the fact that the whole process has been dynamic and developmental. However, we do not believe that a full-blown competency-based approach to education will become dominant in university courses.

8.1.3 We expect that a number of claims by universities about their special role will be strengthened by the attention these claims have received during the debate of recent years, which has resulted in more concrete programmes being developed within universities, aimed at enhancing their special educational role.

8.1.4 In developing competency-based standards, one of the benefits for the professions is that they are better able to understand and articulate their professions. Most professional organisations have used the processes of standards development to improve dialogue and relations between themselves and the universities with regard to curricula.

8.1.5 We believe that as a consequence, some of the fears of universities that may have originally been well-founded, can now be put aside; some of the desirable objectives intended by the professions, argued for by many employers and ultimately supported by the university representatives, should be pursued and can
be attained. These include greater attention to the links between workplace performance and discipline-based knowledge, increased efforts to address more concretely the attainment of underlying capacities of a generic kind and explicit consideration of the relation among all of these in curriculum development, teaching and learning activities. Progress of this kind will best take place in the context of the existing, long-standing and largely successful relationships many universities have with the professions and employer groups through course advisory committees and accreditation processes.

8.1.6 Indeed, if there is one continuing danger both to university education and to professional practice, it is the possibility of bureaucratically inspired external interference in the planning and conduct of professional education. As will be shown in the remainder of this chapter, university education in general and professional education in particular are complex processes in which conceptual understanding and practical experience combine to enable the development of the higher order capacities that are called for by employers, governments and the community. Such complex educational outcomes are likely to be jeopardised by bureaucratic imposition of narrow perspectives, both of professional practice and also of educational processes and outcomes. These are best left to the professions and the universities who can use the experience of the past few years to assist the evolution of better professional, educational programmes that meet both community and individual student needs, not only in the short term but also in the longer term, as circumstances and need change.

8.2 General findings

8.2.1 This final chapter presents analyses of the data described in earlier chapters of this Report. The focus is on the ways that universities might respond to the recent work by professional organisations in developing competency-based standards. The analyses are in terms of the implications for courses and for the way they are taught, as well as for likely learning outcomes of graduates. They are based on a number of conclusions that we have drawn from the present study, which are presented in paragraphs 8.2.2 to 8.2.12.

8.2.2 The ways in which the concepts of competence, competency, competency-based standards and a competency-based approach to education are understood vary considerably among academics, professional organisations and government
organisations. Also, the ways in which these concepts have been represented by some individuals and groups have changed over time and the whole variation in understanding has had a consequential, negative effect on communication within and between various groups about related issues.

8.2.3 Professional organisations on the whole are comfortable with the nature of their relationship with universities in terms of the mechanisms for influencing university courses and teaching through course advisory committees and accreditation processes. That is not to say that they are all, or always, happy with the specific outcomes from such interactions.

8.2.4 University staff are generally supportive of professional input (from practising professionals or professional organisations) into decisions about courses and teaching. Few would wish to see the current level of input reduced. There is less but nevertheless substantial support for the involvement of employers in such processes.

8.2.5 Most academic representatives emphasised the importance of wider objectives for university education than those related to vocational destinations of graduates.

8.2.6 Few, if any, professional organisations see the assessment task within a competency-based approach to education as a simple one. By the same token, many professional organisations questioned (as did a number of academics) whether universities actually assess all the outcomes they claim for their graduates, particularly those outcomes concerned with generic capacities.

8.2.7 Few professional organisations and few employers believe that graduates from current university programmes are inadequately prepared for entry into the workplace although many see room for change and improvement. Employers tend to focus on the need for improved generic skills related to the work environment.

8.2.8 The majority of academics believe that graduates are at least reasonably prepared for entry to the workplace, whether they are graduating from professional or from non-professional courses.

8.2.9 Most professional organisations view the production of competency-based standards as being primarily for the profession itself - to help define the professional identity, to assist the establishment of career paths within the
profession or to make explicit the standards which had always been important in the profession, but perhaps never fully articulated.

8.2.10 There was considerable variation among, and sometimes within, professional organisations about what constitutes entry level to a profession. Some professions focus on the point of graduation while others regard activity after graduation in an approved workplace situation as necessary before entry to the profession is granted. This variation in perspective has also contributed to difficulties in communication.

8.2.11 Many academic courses already incorporate placement of students in the workplace with at least some assessment of their performance forming part of the programme. Thus, workplace activities and their assessment are not new to university courses.

8.2.12 The majority of academics claim to have no knowledge or experience of a competency-based approach to education and training but nevertheless believe that it would have negative implications for higher education by making it too narrow and conformist.

8.3 Relational model of competence - observable practice and underlying capacities

8.3.1 In our investigation of competency-based approaches to education and training and in our analysis of the data described here, we have found it useful to develop a conceptual model of the relationship between observable practice and underlying capacities which make competent practice possible.

8.3.2 This model allows us both to address some of the complexity of issues concerned with competency-based standards and also to analyse the implications for higher education of a competency-based approach to education and training. The model can be thought of as a series of related levels, with the levels, and the links between them, being equally important. Figure 8.1 represents the model in its simplest form.

8.3.3 The three levels depicted range from observable practice (Level 1) through discipline-based capacities (Level 2) to generic capacities (Level 3). This model is seen as a general one in that it describes the relation between observable practice and underlying capacities in a range of contexts, not just in the professions.
Certainly, the contexts of central interest in this Report are professional fields, in the workplace and in universities, but there is no necessary one-to-one correspondence between levels in the model and location of action: discipline based capacities are usually developed in educational institutions but may be developed elsewhere, in the home or in the workplace, for instance; practice is often observed in the workplace but it is also observable in social settings, at home or at university, for instance. Seen this way, the model is just as applicable to non-professional areas as it is to the professions, as will be demonstrated later in this chapter. The model is not limited to professional preparation and practice alone.

The model and the authors' educational values. In Chapter One, we described our own educational values which we brought into this study. The model depicted in this final Chapter presents our view from a different perspective. In our view, teaching and learning must embrace all levels of the model if they are to be totally effective. Individuals need appropriate knowledge and understanding if they are to be effective practitioners. They need to develop capacities of judgement, imagination and analysis if they are to effectively apply their skills and understanding to real-life problems. To do this they also need practical experience; all the levels are necessary.
8.3.6 More than that, they are linked. Understanding is unlikely to be complete if it is not integrated with real-life experience. Generic capacities derive their meaning through interaction with some concrete knowledge domain or real-world practice. Solving real-world engineering problems and solving difficulties with personal relationships in a social setting, for example, don't lend themselves to simple algorithms, let alone the same algorithm. The idea of teaching problem-solving in an abstract, context-free way doesn't bear scrutiny; all learning is contextual.

8.3.7 University and workplace perspectives. The model may be considered from several perspectives. Those concerned with practice in the workplace would most likely have Level 1 of the model as their focus. On the other hand universities would tend to focus on Level 2, but express interest in Level 1 and claim that Level 3 capacities would also be developed by university education. The competency debate of recent years has led universities to focus more attention on Level 3 activities as will be documented later in this Chapter. Likewise, the Australian experience with the development of competency-based standards in the professions has led to a greater concern among professional organisations to include Level 2 capacities in such standards than has been the case previously.

8.3.8 In our interviews we encountered frequent criticisms by representatives from both universities and the professions of a narrow approach to competency-based training that has emerged in the TAFE system, where both the goals and the training are perceived as addressing only Level 1 of our model. We would argue that, in TAFE programmes too, integration of Level 1 with the other Levels of our model is necessary.

8.3.9 It will be noted that in the model, we have used the term 'underlying capacities' (and hence generic capacities and discipline-based capacities). The word 'capacities' is not ideal but was finally chosen as the one most likely to avoid linkage to any particular frame of reference. Because we wanted to reflect on the competency field using a general model, we regarded 'underlying competencies' as a loaded term. Likewise, the term 'underlying attributes' may be too easily linked with a competency perspective. We wanted to avoid that confusion because our ways of understanding what we have called 'underlying capacities' may not be identical with what a number in the competency movement mean by 'underlying attributes'
A more detailed model. In a more complete model of the relation between practice and underlying capacities, there would be a series of sub-levels between Levels 1, 2 and 3 in Figure 8.1. For example, the sub-levels of Level 2 could include a number of aspects of discipline-based capacities, as follows:

- The surface sub-level could represent, say, rote-learning of discipline knowledge.
- A deeper sub-level could represent conceptual understanding of discipline knowledge that goes beyond memorisation of information.
- A further sub-level could be a more holistic understanding of the discipline that embraces both the discipline concepts and their relation to real-world experience.
- Even deeper would be the capacity to be analytical and creative in terms of the discipline base and its relation to the practical problems of our society.

This description depicts the sub-levels of Level 2 moving out towards both Level 1 and Level 3; this relationship could be thought of as a series of three-dimensional shells with Level 2 at the centre. The same description leads to an explanation of the way in which links between the levels develop. There are pathways shown in Figure 8.1 between Levels 1 and 3, not just between each of these with Level 2, to demonstrate the idea that true competence needs to be seen in terms of an integration of all levels, with development of meaningful links between Levels 1, 2 and 3.

Application of the model to professional competencies

Let us focus on observable practice. In an occupation, observable practice can be depicted as a description of what people in that occupation actually do (or perhaps should be able to do) on a day-to-day basis. Attempts to map this surface will typically set out to identify major areas of occupational practice and to list the kinds of roles and tasks involved in each area. The distinguishing characteristic of this level of the model is its focus on observable behaviours.

At a second level it is possible to conceptualise discipline-based knowledge, skills and attitudes underlying and necessary for competent practice. Discipline-based attributes include the ability to draw on the essential knowledge base of the discipline (not only knowing what, but also knowing how and when); deep levels of
conceptual understanding of principles and phenomena; and a wide range of
discipline-specific skills, including skills of a psychomotor kind. Discipline-
specific capacities may be developed through formal education and training, on-
the-job experience, or programmes of continuing education.

8.4.3 At a third level, a set of generic capacities can be imagined. These might include
problem solving, critical reasoning, planning and organisation skills, and inter-
personal and communication skills. Capacities of this kind can be stated as
desirable outcomes independent of discipline or course of study. However, as
argued earlier in this Chapter, these generic capacities are unlikely to be
transferable across disciplines in the sense that a good 'problem solver' would be a
good problem solver in any context. There is evidence that generic capacities are
usually if not always highly context dependent. Nevertheless, it seems useful to
separate out in this model the concept of generic capacities, identified as common
(or core) concerns across a spectrum of educational and training programs.
However, they are only meaningfully assessable in terms of a specific body of
knowledge or practice, as indicated by the double-headed arrows in Figure 8.1.

8.5 Variations in understandings of key concepts

8.5.1 The first conclusion of this study was listed in paragraph 8.2.2 as follows:

The ways in which the concepts of competence, competency, competency-based standards
and a competency-based approach to education are understood vary considerably among
academics, professional organisations and government organisations. Also, the ways in
which these concepts have been represented by some individuals and groups have changed
over time and the whole variation in understanding has had a consequential, negative effect
on communication within and between various groups about related issues.

8.5.2 In terms of our model, much of the inadequacy of communication amongst the
various groups lies in their focus on the different Levels. Often the same technical
language is being used but what those words represent is different for each group.
Thus much of the debate, especially in the public media, has been at cross-
purposes. A vice-chancellor may be emphasising Level 3 capacities while a DEET
representative may be focusing on Level 1 descriptions. Yet each one may be
discussing professional standards and be puzzled why their perspective is not being
understood by the other.
8.5.3 One key outcome of our capital city meetings was that as the discussions took place, differences among various groups that appeared irreconcilable at first, gradually diminished as each group began to understand better what the others were arguing for. "If that's what you mean by ... then it's OK" could paraphrase many of the discussions which resolved differences characterised by variations in understanding of the kind referred to above and outlined in more detail below.

8.5.4 Published definitions. The National Training Board defines competency as "the ability to perform the activities within an occupation or function to the standard expected in employment" (National Competency-based Standards and Guidelines, 1991). Observable occupational functions and tasks are identified, along with the standards to which those functions and tasks must be performed. In relation to our model, this places the focus on Level 1 only.

8.5.5 In some published overseas discussions (eg Jessup, 1989), competency-based standards are described as specifying occupational roles and areas of activity and, within these, observable behaviours that would be indicative of competence, but not as specifying underlying attributes. This is similar to the NTB definition and can also be placed exclusively at Level 1 in our model.

8.5.6 There is an indication of a link to Level 2 in other statements (Heywood, Gonczi and Hager, 1992) that pre-requisite knowledge, skills and attitudes are to be inferred from descriptions of competent, observable workplace behaviour. Indeed, the task of education and training institutions, it is often argued, is to infer what knowledge and skills are needed to ensure that workplace tasks can be performed competently.

8.5.7 NOOSR's Guide to Development of competency-based standards for Professions appears to leave unclear the extent to which competency-based standards should explicitly specify attributes underlying competent performance although there seems to be a focus on what in our model would be the link between Levels 1 and 2:

Australian competency-based standards are concerned with inference of competence from performance in the usual environment of the professional workplace, with all of its attendant contextual features, pressures etc. They are not directly concerned with specification of the attributes that underlie competent performance... However, the standards seek to express those attributes in terms of performance in the actual workplace, rather than in isolation from it. (Heywood, Gonczi and Hager, 1992, 24-25; italics in original)
The development of competency-based standards involves a number of key phases common to all professions, as set out below.

- An analysis of the purpose and functions of the profession and the roles and activities of its members. This analysis should not be restricted to individual tasks. It must consider whole work roles and the management skills and other abilities that enable these roles to be undertaken competently. The Units and Elements of Competency are the form in which such an analysis should be expressed.

- An analysis of the attributes that enable individuals to perform these roles and activities competently; i.e., what knowledge, skills, attitudes, etc. are needed for competent performance in the professional workplace. (Heywood, Gonczi and Hager, 1992, 46)

8.5.8 Hager and Gonczi (1993) subsequently clarify their position on the desirability of explicitly specifying attributes in competency-based standards:

A major feature of a plausible set of occupational competency-based standards would be some specification of the abilities or capabilities required for competent performance of the occupation. It is our claim that forgetting about attributes and concentrating on tasks is the prime reason why so many people lapse into a narrow view of competency-based standards. (Hager and Gonczi, 1993)

8.5.9 In their definition of what competencies mean the nursing profession views competencies as being directly related to personal attributes:

[Competencies are] personal attributes which include specialised knowledge, cognitive skills, technical skills, interpersonal skills, traits (such as personal energy levels and certain personality types) and, finally, attitudes that elicit desired behaviour patterns. (ANRAC, 1990(1), 22)

8.5.10 In terms of our model, the issue under consideration here is the extent to which competency-based standards should simply map observable tasks and activities (Level 1) within an occupation, and the extent to which standards should attempt to reach below this surface towards Levels 2 and 3, to infer and specify the kinds of attributes required for competent performance in the workplace.

8.5.11 In general, academic respondents in our study saw competency-based standards in a way which would place the standards in Level 1 in our model and such academics usually followed the thought processes referred to by Hager and Gonczi above, expressing negative attitudes towards competency-based standards for their perceived narrowness. Further, they make the point that universities are providing a discipline knowledge base that equips a graduate for the changing nature of practice and that focusing on current practice only may be restrictive and damaging to potential development of the profession.
8.6 Implications of the statements of professional standards

8.6.1 An inspection of standards being developed by the professions does little to clarify this issue. On one hand, some competency-based standards are predominantly descriptions of occupational activities with an indication of what constitutes competent performance of those activities. This is the case with the Veterinary Science competency standards (see excerpt in Figure 8.2).

**DRAFT VETERINARY COMPETENCY STANDARDS (1992)**

**UNIT 4: PRIMARY VETERINARY CARE AND EXPERTISE**

**ELEMENTS:**

4.1 **Obtain and record an accurate history of animals and their environment.**

(A productive relationship is established with giver/s of information;
Inquiries are purposive, systematic, efficient and responsive to information obtained;
Information obtained is assessed for validity and reliability;
 Uncertainties are clarified;
Recorded information is accurate, relevant and organised clearly in a form which can be interpreted by others;
Where available information is insufficient, means to obtain additional information are identified)

4.2 **Handle and restrain animals humanely and carry out a physical examination.**

(Methods employed for restraint and examination are humane, effective and consistent with the purpose of the examination and the context in which it is conducted;
Due emphasis is given to urgency;
Steps are taken to minimise discomfort, exacerbation of existing injuries and risks to personnel;
The behaviour of the animal is anticipated and methods are adapted to changing needs;
The physical examination is systematic, efficient and purposive, giving adequate but not exclusive emphasis to presenting problems;
Diagnostic instruments and techniques are employed when warranted and accurate results are obtained;
Physical abnormalities are recognised;
Information obtained from the examination is organised clearly in a form consistent with its intended purpose;
Items requiring specialised examination are identified, together with the appropriate means to do so)

...
These standards are descriptions of observable behaviours in the workplace (eg "clarifies uncertainties" and "accurately records provided information" when taking a history of an animal). However, the creators of the standards have deliberately not attempted to spell out the extensive knowledge base and skills required for competent performance in this profession (Heywood, 1992). This has been based on the argument that it is up to universities to decide how to organise curricula and teaching to meet the standards, along with any other outcomes intended for the university programme.

It is important to recognise and emphasise that competency standards do not specify the process of education that should take place, but rather focus on the outcome of what the graduate should be able to do. This means that educational institutions retain individuality and flexibility in determining course content, educational processes, and assessment practices. (Gibson & Lawson, 1993, 8)

On the other hand, some competency-based standards explicitly address underlying capacities. An early draft of the Dietetics competency standards, for example, included a list of the knowledge required for competent practice (see Figure 8.3). In fact, some of the listed competencies appear to have more in common with questions on traditional university examination papers than descriptions of occupational practice: eg., "Defines the principles of health promotion as outlined in the WHO Ottawa Charter and discusses the history and development of primary health care."

It seems to us that whether standards developed by the professions are directly concerned with the specification of underlying capacities or concentrate only on workplace performance is a fundamental question with significant implications for higher education. The response of university teachers will be necessarily different in each case but will not be easily predicted.

While the specification of observable workplace practice, as in the Veterinary Science example, might be seen to give a good deal of flexibility and freedom to the university to address the standards however they want (as argued by the standards' creators), some may see the performance-focused standards as prescribing a less demanding curriculum than is desirable. In professional areas such as Dietetics and Accounting where specification of underlying knowledge is an integral part of the standards, course teams may feel either constrained by the apparent prescriptiveness or encouraged by the recognition of the more complex outcomes necessary from a university professional programme.
UNIT 1: DEMONSTRATES KNOWLEDGE SUFFICIENT TO ENSURE SAFE PRACTICE

ELEMENTS:

1.1 Demonstrates a thorough knowledge of the theory of human nutrition and clinical dietetics to a level which supports safe dietetic practice. (Can justify actions and key decisions made in dietetic work by reference to the principles of human nutrition and dietetics)

1.2 Demonstrates a broad and thorough knowledge of food use in Australia. (Can justify decisions made and advice given with reference to food use in Australia, thereby demonstrating a thorough knowledge of foods available, foods consumed by different community/population groups and food preparation techniques)

1.3 Demonstrates a thorough knowledge of food science as it relates to nutrition and dietetics. (Describes the nutrient and non-nutrient composition of food. Discusses the response of foods and nutrients to various common methods of food processing, preparation and cooking. Discusses the implications of pertinent legislation related to food to a level which allows safe and practical dietetic advice)

1.4 Demonstrates a thorough knowledge of food service systems. (Can justify decisions made in relation to food service systems. Can describe the main types of systems used in Australia, identifying their strengths and limitations)

1.5 Utilises the basic principles of education theory as it applies to dietetic practice. (Describes theories of behaviour change and adult learning and applies them in the development of programs appropriate to dietetic practice)

1.6 Applies theories of communication to the practice of counselling. (Justifies counselling techniques on the basis of theories of communication)

1.7 Demonstrates a basic knowledge of theories of organisation and management. (Describes the structure of organisations and theories of management. Discusses management systems, the organisation of work and human resource management and the principles of industrial relations to a level that would facilitate the functioning of a small dietetic department)

1.8 Demonstrates a basic knowledge of the theory of health promotion. (Defines the principles of health promotion as outlined in the W.H.O. Ottawa Charter and discusses the history and development of primary health care. Outlines the role of the dietitian in this context)

1.9 Demonstrates a basic knowledge of nutrition research methodology. (Discusses the principles of research design, scientific and social scientific literature evaluation and data management. Demonstrates skills in statistical analysis. Defines the key aspects of epidemiology as applied to health and nutrition)
8.6.6 The implications for universities depend as much on the nature of their relationship with and attitudes towards the professions as on the nature of the competency standards developed by the professions.

8.7 Why competency-based education and training?

8.7.1 The response of universities to the needs of professions is linked to the relationship between the faculty group and the professional organisations concerned. It seems that on both sides, there is fairly general satisfaction with the nature of such relationships as shown in the second and third conclusions from the data in this study, listed earlier in paragraphs 8.2.3 and 8.2.4:

- Professional bodies on the whole are comfortable with the nature of their relationship with universities in terms of the mechanisms for influencing university courses and teaching through course advisory committees and accreditation processes. That is not to say that they are all, or always, happy with the specific outcomes from such interactions; and

- University staff are generally supportive of professional input (from practising professionals or professional associations) into decisions about courses and teaching. Few would wish to see the current level of input reduced. There is less but nevertheless substantial support for the involvement of employers in such processes.

8.7.2 Given that general satisfaction, it is reasonable to ask why there is any interest in development of competency-based education for university courses.

8.7.3 Clearly, professional organisations have significant expertise in the practice of the profession, Level 1 in our model. University academics are often experienced in the profession as well but their experience may not be so recent. Practising professionals will also have good knowledge of the underlying disciplines (Level 2 in our model) but the university academics are likely to be at the forefront of knowledge in the disciplines and perhaps in its relationship to professional practice.

8.7.4 Traditionally university-based, vocational education programmes have sought to provide graduates with discipline-based and generic capacities required for competent performance in the workplace. Thus they could be seen as focussing on Levels 2 and 3 in our model.

8.7.5 However, there has been regular questioning of the relevance of much of what is done in vocational courses for practice:
Vocational curricula were usually devised by teachers for institution-based education, often placing more emphasis on book knowledge than on direct knowledge of practice. There was persistent dissatisfaction in US industry [in the 1970s] with the relevance of college-based courses. (Tuxworth, 1989, 16)

Vocational education and training [in the UK] tends to be 'educationally' oriented both in content and the values which are implicit in its delivery. It has tended to concentrate on the acquisition of knowledge and theory while neglecting performance. (Jessup, 1989, 66)

[Australian] educators and trainers designate skills and knowledge and develop programs based on the best available direction from industry, but often without a thorough analysis and identification of what is actually required by particular work processes, industries and enterprises. (VEETAC, 1993, 3)

8.7.6 The criticisms in these quotes could be regarded as representing a view that the educational institutions were ignoring Level 1 and the links between Level 1 and Level 2 in our model. Some of the detailed criticisms of Australian universities from professional organisations and employers in our study also relate to those Level 1 - Level 2 links.

8.7.7 Early competency-based approaches were predominantly aimed at strengthening the links between education and training programs and industry requirements. In the US in the 1970s, the starting point was to document the workplace requirements of practising teachers and to then re-design university curricula so that "rather than systematically studying disciplines such as psychology and mathematics, competency-based teacher education was based on... the role requirements of teachers" (Houston, 1985, 898). In terms of our model, the identification and documentation of workplace role requirements can be visualised as a mapping of parts of the surface of Level 1, followed by a projection of that map onto the surface of Level 2. It is this image of narrow prescriptiveness which has led Australian academics, rightly or wrongly, largely to reject a competency-based approach to education.

8.7.8 Indeed, such an image has been strengthened by implementations of CBET in the UK in the 1980s, where the identification of workplace role requirements and practices was seen as a lever to establish a direction for the linkages between Levels 1 and 2 of our model: the specification of occupational "standards" would drive decisions about the kinds of education and training provided:

The purpose of competency-based education and training is to drive the system from the starting point of competence and standards. This process replaces what is imagined to be the former situation—where learning and assessment drive the system, based on curricula which are descriptions of what people ought to be able to do. (Mansfield, 1989, 27)

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Now, in contrast, the theory underlying the Australian approach to the development of competency-based standards does address the links between Levels 1 and 2 in our model. However, academics in Australian universities almost universally reject the idea that the development of such standards should lead to a competency-based approach to university education; whether it is through ignorance or not is arguable. Nor are most of the professional organisations developing the standards seeking such outcomes. They value their often long-established links with universities as a vehicle for influence.

While there is little desire in Australia for a complete revision of university vocational courses, there is an increasing demand from professions that professional practice and its links to the underlying disciplines be taken more seriously in the development and conduct of professional courses. From our own educational stance, it is imperative that such links (between Level 1 and Levels 2 and 3 in our model) be addressed if a fully competent graduate is to emerge from the university programme.

The basic conclusion we draw is that neither the professional organisations nor universities are arguing for the adoption of a competency-based approach to education in professional courses. However, there is interest in establishing better links between practice and underlying capacities in the educational programmes. Nevertheless, evolution rather than revolution seems to be the dominant intent. It is obvious in the professions we have studied that there usually are good relationships with universities, upon which such developments can be built.

What does competency-based assessment assess?

Even if as we expect a competency-based approach to university education does not emerge during this period, the competency developments of recent years will influence university curricula through universities' normal relationships with professional organisations and employer groups. Part of that influence will involve questions concerning the reach of competency-based assessment. What is the purpose of competency-based assessment? Is it to (a) establish that specific workplace tasks can be performed competently, (b) infer levels of underlying attributes, or (c) both? This is a fundamental distinction.
8.8.2 In terms of our model, assessment can take a number of different approaches:

(a) It can address Level 1 only. In this case, tasks are the object of assessment. The purpose is to observe whether particular tasks are being performed adequately.

(b) It can address Levels 2 and 3 directly. In this case, underlying capacities are the object of assessment. A direct assessment of such capacities might take the form of a knowledge test or an interview designed to assess a person's conceptual understanding and ways of thinking.

(c) It can address Levels 2 and 3 through Level 1. In this case, the underlying capacities are the object of assessment, but they include the ability to call on, integrate and apply skills and knowledge to deal with real or simulated workplace tasks.

8.8.3 Our position is strongly opposed to narrow, task-based approaches which see a CBA as a process of making yes/no judgements in relation to a checklist of workplace tasks. We believe that some underlying attributes are likely to be best assessed in the context of the workplace, but recognise that adequate inference in relation to professional knowledge, skills and conceptual understanding will require observations of performances in other contexts such as tests and workplace simulations. Further, we see some assessment of Level 2 capacities, and their relation to Levels 1 and 3, taking place in universities with objectives not necessarily related to the current professional status quo. This links to our conclusion in paragraph 8.2.5 that we drew from our data that "Most academic representatives emphasised the importance of wider objectives for university education than those related to vocational destinations of graduates."

8.8.4 Many professional courses already make extensive use of complex performance assessments, as Gonczi, Hager and Athanasou (1993, p.3) observe. Perhaps the most advanced forms of performance assessment are to be found in medical programmes where simulated patient management problems and standardised patient examinations have been used for many years as part of the assessment of clinical competence:

At the University of New South Wales ... This year for the first time, an Objective Structured Clinical Examination, or Assessment (OSCE or OSCA) will be used to test components of clinical skill in the third year of the program. Such examinations subdivide and standardise the clinical tasks faced by candidates and fix the criteria and scoring system used by assessors. This has recently been trialed at one of the teaching hospitals and has received positive feedback from students and academic staff ... Increasingly, the clinically based standardised patient examination is becoming an accepted method of assessment in the later years of undergraduate medical courses, and in many of the postgraduate colleges.

(Gonczi, Hager and Athanasou, 1993, 78)
8.8.5 Performance assessment is also an important aspect of the assessment in accountancy courses:

Most universities have introduced assessment methods which test professional skills through performance as well as their traditional assessment of disciplinary knowledge. Typically in any year of a course there will be a series of practicals set where students are required to, say, construct a computer model which is a simulation of a real accounting problem, or to keep a number of journals and ledgers. In addition, case studies are widely used where the students are put into the situation of the practising professional and where their competence in problem framing and solving are assessed. (Gonczi, Hager and Athanasou, 1993, 82)

8.8.6 Design projects in university architecture courses provide other examples of performance assessments widely used in professional courses:

A design project is set which simulates, more or less, the sort of comprehensive and holistic problem situation which architects meet in practice, ie from expressed or implied needs a prospect of building is envisaged and the architect explores this in order to resolve whether to and if so, what to build, and how to arrange the elements of the building to satisfy the needs. Usually there is a graduation of size and complexity of project increasing from first to final years, with each project drawing upon the assumed state of knowledge and often seeking to extend it. The conclusion of a design project is most likely to be a description, in drawings, models and words of the artefact that is proposed to be constructed. (Gonczi, Hager and Athanasou, 1993, 106-7)

8.8.7 Underlying capacities - supplementary or integrated? In the competency assessment literature, much is made of the integrated approach - in which underlying attributes are inferred from observable performance. That description may well apply to the examples described in the previous paragraphs. However, we would question whether 'integrated' is always the appropriate word. Words like 'supplementary' are also used on occasion and this would seem to us to be more accurate in many instances. For example, assessment of performance and assessment of knowledge of discipline information would represent an 'additive' rather than an 'integrated' perspective. Further, it is not clear that assessment of the knowledge component always goes beyond mere recall of information to include measurement of understanding and its relationship to practice.

8.8.8 Gonczi et al (1993, pp.3-4) have argued that "The challenge ... will come from the recognition that by using a competency-based approach assessment can be improved - made more valid, reliable, fair, efficient ...." We share the goals but would express the challenge more broadly - the need to develop truly integrative assessment. We see understanding of discipline knowledge and experience of real-world practice as relational; each informs the other and, in a sense, in a competent
person they are inseparable. True understanding is impossible without reflection on real-world experience and truly competent performance is impossible in the absence of understanding, without making a nonsense of the definition of competence. Assessment which is intended to measure competence in an integrated way must deal with that relational characteristic. The relational characteristic also extends to Level 3 of our model, generic capacities, and will be taken up in the next section.

8.9 What role for generic attributes?

8.9.1 Universities traditionally have expressed their educational role as being about Level 2 in our model. They have claimed that Level 3 is also attended to. Indeed, throughout the competency debate in Australia over the last year or two, university representatives have argued that their programmes are concerned with higher level outcomes and cite objectives commonly associated with the term "generic attributes". This was questioned by representatives of some universities and professional organisations as indicated in paragraph 8.2.6, reproduced below:

Few, if any, professional organisations see the assessment task within a competency-based approach to education as a simple one. By the same token, many professional organisations questioned (as did a number of academics) whether universities actually assess all the outcomes they claim for their graduates, particularly those outcomes concerned with generic capacities.

8.9.2 Do universities actually teach for, and do university graduates actually attain such outcomes? Some universities are now taking this matter seriously. Through a series of Vice-Chancellor's Forums on Teaching, the University of Sydney has produced a document titled "Generic attributes of graduates of the University of Sydney" that has been accepted by the Academic Board. Further workshops are being held for academic staff to assist them "with the rethinking about classroom processes which may be necessary in order to provide a learning environment which encourages the generic attributes in students." (Third Vice-Chancellor's Forum on Teaching, 1993)

8.9.3 We believe that generic competencies have to be interpreted within particular disciplines (eg., problem solving will mean different things in different disciplines and it may not make much sense to think of a person's problem-solving ability independent of discipline context). The University of Sydney also takes this approach: "these attributes do not exist independently of courses and programmes
of study but are inherently part of course and program outcomes". (Third Vice-Chancellor's Forum on Teaching, 1993)

8.9.4 The matter is not without some controversy, however. This emphasis on generic skills in universities, albeit within a discipline context, has been the subject of a critical statement by another university vice-chancellor:

Universities and employers agree that, to be effective, graduates should have high generic skills, not just specialist knowledge which has an ever-diminishing half-life. Universities for their part emphasise that their courses develop analytical capacity and communication ability, in the context of focused attention to particular disciplines and professional requirements ... But while this agreement about the desirable qualities of graduates grows more and more evident in the national rhetoric, many of the nation's unemployed graduates could be forgiven for wondering if it has much relevance to the job market they face. There is substantial evidence that, when it comes to the crunch, those graduates who have performed well in technical, specialist, professionally-oriented courses have an advantage over those who have done equally well in courses of a more general, less technical nature. (Webb, 1993)

8.9.5 Generic capacities and general vs vocational courses. The last quote raises another question. Does a focus on generic capacities logically imply a reduced concern for technical knowledge? We would argue that this is not so.

8.9.6 Our model sees generic capacities being developed only through the application of discipline content in various contexts. From an educational perspective, Level 3 outcomes only derive their meaning through Levels 2 and 1. This means that generic capacities may be developed through non-technical disciplines and real-world activities of a non-technical kind but they will be different in kind because of the particular content and contexts of learning. Generic capacities relevant to technical professions must be developed through application of relevant technical content to real-world professional contexts.

8.9.7 Generic capacities should not be thought of as characteristic outcomes of a 'general' education. The two terms do not imply one another. High-level generic capacities are potential but not necessary outcomes of any educational programme, whether general or vocational.

8.9.8 Our conception of competence. For us, competence embraces all three levels of our model in an integrated relationship. Education for competence involves development of understanding of discipline knowledge and development of skills in the context of real-world experience, leading to such capacities as intellectual judgement and imagination.
8.9.9 These capacities are developed in professional courses largely through professional experiences of the kind that competency-based standards have been developed to categorise.

8.9.10 Competence is developed through general courses in exactly the same way but the arena for observable practice is much more flexible. It is not surprising to find course descriptions providing students in such general courses with a greater opportunity to choose the scene of action applicable to their study. This difference does not imply any greater or lesser degree of opportunity to develop competence. It merely recognises the fact that the idea of competence at least in part derives its meaning through the discipline and the practice in which it operates.

8.10 How well are graduates being prepared?

8.10.1 On the whole, employers in our survey were satisfied with graduates' levels of theoretical (discipline-based) knowledge and skill. And conclusions from our data (8.2.7 and 8.2.8 reproduced below) suggest that professional organisations, employers and academics are all reasonably satisfied with the quality of current professional graduates.

Few professional organisations and few employers believe that graduates from current university programmes are inadequately prepared for entry into the workplace although many see room for change and improvement. Employers tend to focus on the need for improved generic skills related to the work environment.

The majority of academics believe that graduates are at least reasonably prepared for entry to the workplace, whether they are graduating from professional or from non-professional courses.

8.10.2 However, there was much less satisfaction with graduates' generic capacities, including oral and written communication skills, ability to work as a member of a team, and skills of analysis and problem solving. Thus, in terms of our model, what employers regard as lacking in graduates is not so much Level 2 capacities but Level 3 generic capacities. The comments of an employer of engineers were typical of many we heard:

Universities could place more emphasis perhaps on some of the less academic areas such as communication, working with people, teamwork... It would help I think if writing skills, and oral communication, and some of those more fundamental things that are required in any job were built into the engineering course.

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8.10.3 The comments made by employers interviewed in our study parallel the findings of a report of the Business-Higher Education Round Table (1992) which suggests a perception among the business community that graduates lack the ability to communicate ideas and to discuss and debate issues; are unable to relate, communicate and interact with others from different backgrounds and experience; lack training in logic; and are deficient in their ability to conceptualise projects from broad goals through to ultimate evaluation. According to that report, businesses consider the "short-term lack of productivity during the transition of the new graduate from university to workplace" as a cost to be avoided. The BHERT report also found differences in the ways in which employers and academics rank the desirable characteristics of university graduates, with academics attaching greatest importance to theoretical knowledge in the professional field, but employers attaching greatest importance to communication skills.

8.10.4 We would see the increasing concern of universities themselves recently to articulate and teach for such generic outcomes as being consistent with both the expressed need of employers and the identity on which university education is based. Both the concerns of employers and the recent actions by universities reflect our view that integration of all levels of our model is required for an undergraduate programme to lead to competence in its graduates.

8.11 What purposes will competency-based standards serve?

8.11.1 Our discussions with professional organisations developing competency standards made it clear that professions have a wide variety of reasons for undertaking the work they are doing to develop standards. Some professions see the standards as important in defining the nature of professional work and of the profession itself. Some told us that they would eventually have developed standards for these reasons, independently of external support and encouragement. Other professions saw standards as important in the processes of ongoing professional development. As reported in paragraph 8.2.9, almost all representatives of professional organisations we interviewed saw value in the development of competency standards for the profession itself:

Most professional organisations view the production of competency-based standards as being primarily for the profession itself - to help define the professional identity, to assist the establishment of career paths within the profession or to make explicit the standards which had always been important in the profession, but perhaps never fully articulated.
8.11.2 Professions were much less concerned with the potential impact of competency standards on university courses. Few described the possibility of influencing substantial change in university courses as a reason for their development of competency standards. Similarly, few professions had thought ahead to how the competencies they were identifying might form the basis of assessment procedures, and some were sceptical about their use for this purpose. Some professional organisations have subsequently addressed the issue of assessment but their work is not yet complete (see Gonczi et al, 1993).

8.11.3 Our discussions also revealed differences in the interpretation of "entry level" into a profession. In some cases, entry into the profession occurs immediately after graduation, and so competency standards were being developed to address the point of transition from university to professional practice. However, we reported in paragraph 8.2.10 that most saw entry level into the profession occurring some time after graduation, usually after a period of several years work experience:

There was considerable variation among, and sometimes within, professional organisations about what constitutes entry level to a profession. Some professions focus on the point of graduation while others regard activity after graduation in an approved workplace situation as necessary before entry to the profession is granted. This variation in perspective has also contributed to difficulties in communication.

8.11.4 It is also the case, as indicated in our summary at the beginning of this chapter (paragraph 8.2.11), that "Many academic courses already incorporate placement of students in the workplace with at least some assessment of their performance forming part of the programme."

8.11.5 Courses in teaching, nursing, engineering, accounting, medicine, for example, commonly incorporate varying amounts of supervised work experience. The level of experience with professional practice varies from one programme to another and also in the degree to which the nature and scope of the experience are prescribed. In many cases, as outlined in Chapter Four, the relation between the profession, the student and the university are of a kind that resembles the competency-based approach argued for by some. It is surprising therefore that this is generally not recognised by most university academics who, as we reported (in 8.2.12) "claim to have no knowledge or experience of a competency-based approach to education and training but nevertheless believe that it would have negative implications for higher education by making it too narrow and conformist."

Bowden Masters Report
8.12 The future

8.12.1 It is our belief that in future relationships between universities and the professions and employer groups, there will be more informed debate about the interaction of professional practice with discipline-based knowledge and the way in which higher-order capacities and attitudes desired by all parties are developed through integration of the Levels, as described by our model.

8.12.2 An ideal outcome would involve universities and other relevant organisations working together to produce a more focussed integration of practice with discipline study and more explicit and successful attention being paid to the development of higher-order capacities. The nature of past relationships and the developments of recent years reported here cause us to be optimistic that such an outcome is attainable.
REFERENCES


Appendix A

Interview Schedule - Professional organisations

Current Practice

1 How does the profession currently contribute to university courses - curriculum and assessment?

2 How is entry of graduates into the profession currently regulated?

3 To what extent do you think current graduates are adequately prepared for working in the profession?

Development of Competency Standards

4 We have read the documentation (if there is any in the particular case) about your profession's involvement in developing competency standards. Can you describe briefly the process that has been used? What difficulties have been encountered?

5 What kind of competence are you identifying? Why this kind (these kinds)?

6 What benefits do you see from the setting of competency standards for your profession?

7 What would you do about applicants for membership who have no formal training?

8 What are the implications of competency-based standards for the relevant university course(s)?

9 Who will be responsible for deciding on eligibility for practice in your profession?

10 Who will assess performance levels of individuals relative to the competency-based standards you develop for your profession?

11 When would such assessment take place?

12 What links will there be between such assessment and the course assessment in universities?

Implications for higher education

13 What does a competency-based approach to university education mean to you?

14 What are the implications for your profession of the introduction of competency-based education?

15 In what ways have academics been involved in your profession's activities concerning competency-based standards?

16 How will they be involved in future?

17 Are there any irreconcilable differences between the approach your profession has taken to developing standards and the published NOOSR approach?

18 Specific questions peculiar to particular profession.
Appendix B

Initial questionnaire - heads of department and course co-ordinators
Survey of University Heads of Department and Course Co-ordinators

Before answering the following questions, you should choose a particular course (degree programme) in which students major in your discipline. Please focus your responses on that course.

Please return completed questionnaires in the envelopes provided to:

Lisa Ball
Research Assistant
ERADU
RMIT
GPO Box 2476V
Melbourne 3001
Phone: (03) 660 2510
Fax: (03) 639 0439

1 Please identify the subject area of the particular course you have chosen:

Accountancy
Architecture
Chemistry
Engineering
English
Fine Art
Mathematics
Nursing
Political Science
Teacher Education
Veterinary Science

2 What is the full title of the course you are focusing on?

3 To what extent do students gain experience in the workplace as part of the course?
4 What is the designation of your position?  
   Head of Department ☐  
   Course Coordinator ☐

5 Indicate your gender.  
   Female ☐  
   Male ☐

6 What does it mean to be a competent graduate from the course?

7 To what extent are graduates of your course prepared for work on entry to the workplace?  
   Please indicate the way(s) in which they are or are not prepared.
What are your views about the involvement in the design of curricula, teaching and assessment in higher education of the following groups:

(a) Practising Professionals

(b) Professional Associations

(c) Employers

(d) Other (please specify)
We want to find out what is known by academic staff about recent developments in what has been termed 'a competency-based approach to education and training'. If you know something about this approach, would you tell us what you think it involves? On the other hand, if you know little or nothing about it, please indicate this.

Given the way you understand a competency-based approach, what implications do you think it would have for higher education?

Do you have any personal experience of a competency-based approach? If so, please give details.

Thank you for your co-operation
Appendix C

Follow-up questionnaire - heads of department and course co-ordinators

DEET Study on Implications for Higher Education of a Competency-Based Approach to Education and Training

Survey of University Heads of Department and Course Co-ordinators

Second Questionnaire

*Before answering the following questions, please read the 'National Competency Standards Background Information' on the following page*

Please return completed questionnaires in the envelopes provided to:

Ms. Lisa Ball
Research Assistant
ERADU
RMIT
GPO Box 2476V
Melbourne 3001

Phone: (03) 660 2510
Fax: (03) 639 0439
National Competency Standards

Background Information

The current emphasis on micro-economic reform (industry restructuring, award restructuring, and restructuring of vocational education and training) in Australia seeks to improve the productivity and international competitiveness of the Australian workforce. A system of national competency standards is being developed as an element of this reform process.

In 1989, the Ministers responsible for vocational education and training agreed to move towards a competency-based training system for the vocational training sector, applicable to all industries; the National Training Board (NTB) was established. The NTB, in consultation with industry, endorses national competency standards for occupational classifications in industry or enterprise awards or agreements, against the eight competency levels of the Australian Standards Framework (ASF). NTB activities are primarily directed to the first six levels of the ASF, that is, up to technical and paraprofessional classifications.

Also in 1989, the National Office of Overseas Skills Recognition (NOOSR) was established to improve the skills recognition process for overseas trained professionals by encouraging professions to develop and then use competency standards rather than qualifications, as a basis for assessment. These standards were later seen to have implications for registration procedures for local professionals. Consequently, nineteen professions are currently engaged in developing national competency standards at ASF Levels 7 & 8 (professional levels), with NOOSR support. These include Accounting, Architecture, Engineering, Veterinary Science, Nursing and Teaching.

Competency has been defined by the NTB as follows:

"A competency comprises the specification of knowledge and skill, and the application of that knowledge and skill, within an occupation or industry level to the standard of performance required in employment .... The concept of competency focuses on what is expected of an employee in the workplace rather than on the learning process; it embodies the ability to transfer and apply skills and knowledge to new situations and environments. This is a broad concept of competency in that all aspects of work performance, and not only narrow task skills are included".

In developing standards professions bring together practitioners to identify occupational roles and functions, and express these in the format developed by the National Training Board. The approach adopted involves a comprehensive analysis of attributes which underlie competent performance in the workplace, namely knowledge, skills and attitudes. The standards development process involves consultation with all key players involved, and includes input from the higher education sector.

Once in place, the standards are expected to influence professional entry requirements and assist in identifying professional development needs and defining the role of the professions to the wider community. National competency standards are also regarded as a means of providing greater flexibility in career pathways by assisting the transfer of skills both within an occupation and between related occupations.

It is intended that standards will be reviewed regularly by the professions to ensure they reflect the latest developments in workplace practice.

Competency standards may have a role in informing the existing process of dialogue between the professions and higher education. Within the higher education sector a number of educators are reassessing their curricula and assessment methodologies in response to the national competency standards being developed by their profession. This approach could be referred to as a competency-based approach to education and training in that competency standards are used to inform design of curricula. Such an approach is likely to place significant emphasis on a person's ability to demonstrate a range of attributes in employment related outcomes.
Question 1. Do you think that National Competency Standards developed within the professions in the way described above, would have a role in the design of curricula, teaching and assessment in relevant higher education courses? Please explain why/why not.

Question 2. If a competency-based approach were implemented in higher education, what difference do you think it would make as to whether graduates are fully prepared for the workplace?
Question 3. The statements listed below represent issues raised by various stakeholders during the past twelve months. Consider each issue in turn and circle one symbol (-, 0, or +) for each statement to indicate whether you think that the development of a competency-based approach to education and training, as described on page 2, will have significant adverse implications (-), no implications (0), or significant positive implications (+) for higher education in terms of that issue.

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Please indicate, by circling the relevant symbol (-, 0, or +), what implications you think a competency-based approach to education and training would have for...

a) The autonomy of academics in the design and control of curricula, teaching and assessment.

b) The development of generic transferable competencies such as problem solving skills, mathematical skills and communication skills

c) The range of goals pursued in university undergraduate courses.

d) The role of university professional education in producing graduates who will question and help develop current professional practice.

e) The development of new areas of professional practice as the changing environment within professions is addressed.

f) The recognition of skills and qualifications gained outside higher education through credit transfer and recognition of prior learning, both within and between courses, and at initial entry.

g) The development of performance-based assessment systems in higher education

Implications

- O +

Please see overleaf for question 4.
Question 4. Please provide comments on any or all of the issues listed on the previous page. Please write your comments next to the appropriate letter.

a)

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Thank you for your co-operation
Appendix D

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**KEY:**  
Eng = Engineering  
Nur = Nursing  
Acc = Accounting  
Arch = Architecture  
Teach = Teaching  
Vet = Veterinary  
Math = Mathematics  
Chem = Chemistry  
Eng. = English  
Science = Fine Art  
Pol. = Politics  

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Appendix E

Employer organisations surveyed

Accounting:

Esso Australia
National AB
KPMG Peat Marwick
Novamax Technology
Graeme L. Smith & Co.
Lawry Smith & Partners
Melbourne City Council
Local ASB

Engineering:

Ford Motor Co.
Gutteridge et al.
ICI Engineering
Kinhill Engineers
CSIRO
VicRoads
Shire of Melton
Urban Land Authority

Nursing:

Cabrini Hospital
St. Vincent's Private Hospital
Australia Hospital Care Group
Mitcham Private Hospital
Vaucluse Hospital
Alfred Hospital
Royal Women's Hospital
Maroondah Hospital
Nhill Public Hospital

Teaching:

Association of Independent Schools of Victoria
Catholic Education Office
Camberwell Girls School
St. Mary's Primary School
Department of Secondary Education
Teacher Registration Board
North Melbourne Primary School
University High School
Appendix F

Interview schedule - employers

(Statements in italics are guides to the interviewer)

1. Brief description of interviewee, organisation and section
   a. experience with curricula/ teaching in HE
   b. organisation type - private/ public - size - national/ multinational
   c. status of interviewee - general manager/ division head (most senior representative of professional discipline)/ section head (selects and supervises recruited graduates working in professional capacity)
   d. discipline associated with work of organisation and section
   e. male/ female

2. What does it mean to be a competent professional in your organisation/ section? (professional/ graduate successfully employed about 3 years)
   • probe: seek notions of type of competence- general, discipline specific descriptions, examples
   • what are you looking for when you recruit experienced professionals?

3. To what extent do you think your graduate recruits are adequately prepared for work as professionals in your organisation/ section?
   • probe: strengths/ weaknesses

4. What do you understand by a competency-based approach to education at university level?

5. What do you think might be the implications of the introduction of competency-based approaches to higher education for your organisation/ section in terms of graduate recruitment?
   • strengths/ concerns
   • probe: in relation to answer given to Q3 (is higher education adequate preparation for work?).
   • probe: compare current situation (which may not be associated with competency-based approaches) to that intended with implementation of competency-based approaches to higher education
   • probe: take up the issue of equity if mentioned

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6. How do you see national competency standards affecting the preparation of curriculum and the teaching in higher education?
   • probe: and relate to answers to Q5
   • what difference will it/ might it make?

7. What are your views of the involvement of
   a. professional bodies
   b. practising professionals
   c. employers
   in higher education

8. Do you see the introduction of competency-based approach to higher education as having wider implications for your organisation/section?
   • probe: issues which may be raised include: further training for employees, industrial relations, future flexibility
Appendix G

Universities & professional organisations represented at capital city discussion sessions

**Universities Represented at Discussions:**

- University of Adelaide
- University of South Australia
- Flinders University of South Australia
- Griffith University
- Queensland University of Technology
- University of Central Queensland
- University of Southern Queensland
- University of Queensland
- Australian National University
- University of Canberra
- University of Tasmania
- Deakin University
- La Trobe University
- Monash University
- Royal Melbourne Institute of Technology
- University of Melbourne
- Victoria University of Technology
- Curtin University of Technology
- Edith Cowan University
- Murdoch University
- University of Western Australia
- Australian Catholic University
- Macquarie University
- University of New England
- University of Newcastle
- University of New South Wales
- University of Sydney
- University of Technology Sydney
- University of Western Sydney

**Professional Bodies Represented at Discussions:**

- Nurses Board SA
- Architects Accreditation Council of Australia
- Australian Society of Certified Practising Accountants
- Australian Institute of Agricultural Scientists
- Law Council of Australia
- Australian Veterinary Association
- Australian Optometrical Association
- Pharmaceutical Society of Australia
- Australian Dental Association
- The Australian Physiotherapy Association
- Institute of Engineers Australia
- National Project on the Quality of Teaching and Learning
- Australian Association of Occupational Therapists
- Australian Association of Speech and Hearing
- Institute of Surveyors of Australia Inc.
- Australian Institute of Medical Scientists
- Australian Psychological Society
- Australian Council of Professions
- NSW Council of Professions