



Introduction

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Chapter One Introduction

1.1 Introduction

The introduction of competency-based training (CBT) in the late 1980s was driven by a concern to improve the flexibility and adaptability of the Australian workforce in order to make it more globally competitive (Dawkins 1988). This initiative was linked to micro-economic reforms aimed at improving aspects of work practice in Australia's public and private sector enterprises (Dawkins & Holding 1987). It coincided with a move to reform vocational education provisions nationally. A key governmental goal for this reform that emerged at this time, and which persists, was for vocational education and training (VET) to assume a key role in developing a workforce capable of competing against imports, and of producing competitive goods and services that are exportable. CBT was selected by government as the means to secure these goals and it became linked with this reform movement. Significantly, behavioural approaches such as CBT have long been the preferred instructional model in Australia's vocational education systems. For instance, behavioural objectives, top-down models of curriculum development, and assessment against benchmarks have been used since the inception of Technical and Further Education (TAFE) in Australia (Stevenson 1989). However, with the training reform movement of the 1980's came a tightening of the formula for curriculum development and implementation. This was achieved through the development and endorsement of national standards, the use of regulated accreditation frameworks and assessment practice. In all, these reforms changed the ways that VET curriculum is developed and implemented, and students' performances assessed. For example, these reforms, while reflecting the already existing criterion-based approach, reduced the multiple levels of assessment that were typically used (eg. fail, pass, credit, distinction) to two levels of performance (competent/not competent).

Much of the reform activity was linked to key institutional arrangements in the late 1980s and early 1990s. This era saw the development of national competency standards, and moves towards national core curricula based on concerns for national uniformity and accountability. These national foci saw the emergence of key bodies such as the (now defunct) National Training Board (NTB), national curriculum committees (e.g., ACTRAC) and the establishment of the Australian National Training Authority (ANTA). It has been argued that such institutional arrangements required the use of CBT to manage and make instructional arrangements accountable to national regulation (Lundberg 1997). However, changes in institutional arrangements (e.g., the collapse of the accord) and government policy (e.g. the emergence of enterprise-based industrial agreements) are now contributing to the erosion of national industrial awards and the rise of highly specific national curriculum arrangements. Concerns have also been expressed that national prescriptions cannot effectively capture state, regional, local and enterprise requirements and needs. Consequently, some of the very arrangements associated with the introduction of CBT are now being transformed. It is therefore timely to determine whether CBT secured the goals that were expected of it. The findings from such an evaluation should provide guidance for directions of change into the next millennium.

Our project evaluates CBT in two states -- Victoria and Queensland -- in terms of the impact on the development and implementation of curriculum, judgements about students' knowledge, and its influence on the role of VET instructors. These concerns are addressed in the requirements of three separate but inter-linked sub-projects, which together comprise NREC Major Projects 4, 5 and 6, which are combined in this research. These projects reflect three interrelated areas of educational practice - curriculum development (project 4), assessment (project 5) and instruction (project 6). Integration of the projects has been achieved through a review of existing literature, followed by empirical work. This work

comprises gathering consolidated data of differing kinds from teachers, representatives of industry, enterprises, students and documents associated with aspects of CBT policy and practice. In each state, the focus is on the same two industries -- Metals and Hospitality. These industries were chosen because of their divergent natures. On the one hand, the Metals industry, which is predominantly trade-based, has been at the forefront of vocational education since its inception, while Hospitality – a service industry -- is a relatively new training field. By focusing on these diverse industries, it is hoped that a more comprehensive picture of the effects of CBT on vocational education will emerge as a result of our research. Data gathering and its analysis within these industries focuses on the investigation of (i) the educational worth of CBT and (ii) its influence on educational practice across the three subprojects dealing with curriculum development, assessment and teaching.

Data were gathered in both metropolitan and non-metropolitan sites in the two states to reflect diverse circumstances for the implementation and evaluation of this national initiative. In doing so, the importance of antecedent conditions was recognised, because of the changing circumstances surrounding the situation as it existed prior to CBT, and the circumstances and goals into which CBT was implemented. This analysis therefore seeks to understand contextual factors. For example, it maps the use of CBT and how that use differs across the two states. The different historical and contemporary developments in VET in Australian states and territories makes it important that such research is conducted in more than one state. Therefore, collecting data from two states was particularly useful in illustrating and examining the implementation of CBT policy. At that time, VET was predominately TAFE. Both Queensland and Victoria have had quite different experiences of vocational and post-compulsory education (e.g., in relation to the location of vocational education in separate secondary schools), and contemporary TAFE management is much more decentralised in Victoria than in Queensland. Moreover, although Victoria is more geographically compact, that state has a much larger population and diverse industrial base than Queensland. The reason for conducting the research in the two states, however, was not to make a direct comparison between them, but as broad exemplars of regional differences within Australian vocational education. These bases were examined against an emerging focus of VET as it closes on the year 2000, especially with respect to the first ten years of implementation of CBT, the emerging enterprise focus, the breadth of the VET sector, and increasingly market-based provisions of VET. This analysis is important for informing future VET policy and practice because it is necessary to understand both the circumstances of its introduction and the circumstances that VET is likely to be called upon to address in the near future. Fundamental to this analysis, therefore, is an evaluation of the utility of CBT in addressing, firstly, the knowledge required in the Australian workplaces at the commencement of the next century; secondly, its ability to address the needs of industry goals for a skilled workforce, and finally, its ability to satisfy enterprise requirements for skilful and adaptable employees.

In addition to these purely economic goals are social goals for vocational education associated with individual aspirations and the needs of communities. It is important that these needs are also recognised and evidence tabulated to account for the individuals as well as the organisations that were affected by the recent changes in vocational education.

In sum, the purpose of this project was to seek understanding of the contemporary and likely future requirements for VET curriculum development, assessment, and instruction, and compare these with the antecedent conditions that were present at the time of the inception of CBT. The antecedent factors are therefore examined in each of the three sub-projects (see Table 3 for a clear depiction of this integration). The processes used in curriculum development, implementation, assessment and instruction are also identified and evaluated, followed by an appraisal of the outcomes of the three areas of VET practice. Together, these three phases constitute the approach to evaluation devised by Stake (1976). A “futures” phase

was also adopted to point the way forward. Stake's three phases are depicted in the table below.

Table 1 - Antecedent conditions, processes and outcomes (Adapted from Stake, 1976)

Antecedent conditions (<i>What was the existing situation?</i>)	<ul style="list-style-type: none"> • Approaches to curriculum development used • Approaches to student assessment and outcomes? • Role of VET teachers
Process interventions (CBT) (<i>What processes were used?</i>)	<ul style="list-style-type: none"> • Processes and outcomes of CBT curriculum development • Assessment under CBT, its implementation and practice. • CBT implementation by VET teachers and trainers
Outcomes (<i>What has been achieved?</i>)	<ul style="list-style-type: none"> • Success of CBT in meeting the needs of enterprises, industries and students (economic and social goals) • Ability of CBA to furnish valid and reliable judgements. • The integration of CBT into VET instructors' practice

1.2. A decade of CBT

The move to implement a uniform system of Competency-Based Training (CBT) within Australian vocational education systems began in earnest in 1989 (Harris et al 1995). The implementation followed a policy-focused debate about a more skilful ("clever") country and associated government supported bi-partite deliberations between some employers and some unions, about reforms to this country's vocational education system (Dawkins & Holding 1987, Dawkins 1988). The policy debate focused on concerns about the nation's declining economic standing and proposed a set of interrelated policy initiatives which aimed at securing a more skilful and productive workforce. Hence a platform of policies aiming to reform workplace practices, to link remuneration increases to enhanced skilfulness and the reform of a vocational education system was developed. Baverstock (1996) suggests these reforms were responses to negative international appraisals of the nation's performance in the field of education and training. In the platform of reforms was an orthodoxy associated with perceptions of failure on the part of the education system and the need for greater responsiveness to industry. This orthodoxy was aligned to changes in views about economic orientations which emphasised the market and private good as a precursor or super-ordinate to the common good and which were adopted by a Federal Labor government. Indeed, overseas influences were seen to be important and it was a bi-partite overseas study tour that resulted in the publication of *Australia Reconstructed* which set up the basis of much of the reforms that followed. Many of these reforms have been supported by successive governments from both sides of politics.

In particular, the aim was to reform the nation's vocational education systems in order to develop a more flexible and adaptable workforce, that would be globally competitive. This goal required reform to workplace practices as well as the way skilled workers were prepared and assessed (Dawkins & Holding 1997). To remedy perceived deficiencies in the existing provision of vocational education courses, CBT was proposed as a vehicle which could: (i) quantify exactly what skills industry needs, (ii) address problems associated with time-serving vocational education and training arrangements (particularly those associated with entry-level training) and, (iii) permit the organisation and administration of vocational education to be closely linked to industry needs and, in particular, the reform of work practices referred to at the time as Award Restructuring (Dawkins 1988). This process included aligning vocational educational provisions with restructured industrial agreements, thereby placing vocational education in a subservient role to industrial relations reform. This trend has continued, most recently linking VET provisions with enterprise bargaining agreements. The decision in 1989 to implement a uniform national CBT approach to VET therefore was founded on the belief, by government and 'industry', that developing a skilled workforce through a centrally controlled and industry-mandated nationally uniform provision of VET ought to be the prime

impetus for training. It was proposed by government and supported by its bi-partite collaborators that such a move would enhance the quality of the Australian vocational education system and, because of industry support, would see an increase in the commitment by enterprises to vocational education (Dawkins 1988, Harris et al 1995). In a move characterising the governmental use of mandation which was repeated elsewhere, the Federal Labor government invoked financial arrangements that resulted in tying funding for the states and territories to their compliance to nationally uniform prescriptions (Lundberg 1994). Hence, goals for increasing both the quantum and quality of vocational education were to be realised through the uniform adoption of CBT. However, since 1989, much has changed in policy settings, goals for microeconomic reform, governing political parties and the structure and organisation of the nation's vocational education systems. In sum, the institutional context into which CBT was to realise its goals has not been consistent or unidirectional in the last decade.

Consequently, an inquiry into the contribution of competency-based training and assessment to Australian VET has to go beyond comparing initial policy intents with outcomes. Rather, there is a need to also delineate the social, political and policy context into which CBT was introduced and how this context has been transformed since 1989. In evaluating the contribution of CBT to Australian VET, judgements need to account for the contextual and institutional factors, policy goals and curriculum practice that have developed and subsequently been transformed over the 'decade of CBT' (1989 - 1998). It is therefore necessary to determine in what ways new institutional frameworks have been established which shape the nature of curriculum and the work of instructors. Taking an institutional perspective, institutions are seen as sets of regulatory norms that give rise to patterns of action. In this way, institutions constitute the social infrastructure which orders the behaviour of relevant social actors (both individuals and groups) and organises relations among them (Research School of Social Sciences 1995). This lends itself to a consideration of the relationship between CBT and the changing social context into which it has to interact and, indeed, CBT's contribution to changing the norms of the culture.

Given the potential scope of this project it is important to establish initially some clear parameters for discussion. The overall question for the investigation is:

How useful has competency-based training been as a model of curriculum development, assessment and instruction in securing the governmental goal of developing an adaptable and flexible workforce?

The research question focuses on the whether the three areas of curriculum practice – curriculum development, assessment and teaching practice -- have secured the key economic goal of developing a skilful and adaptable workforce capable of responding to the requirements for Australia to be both import-competing and successful in exporting its goods and services. This question suggests a basis for evaluating the contribution of CBT that is consistent with what was proposed by its governmental sponsors. This outcome might be stated as - What evidence is there that CBT has contributed to the development of an Australian workforce which is adaptable and flexible? This statements in focusing on the utility of CBT (its educational worth) also includes consideration of its impact on the institutional practice within the vocational educational system(s) given their assigned role in securing this goal.

The focus of this investigation into the contribution of CBT is therefore found within three separate but interrelated areas of inquiry. These are:

- (i) the efficacy of CBT as a model of curriculum

- (ii) the utility, reliability and validity of a competency based system of assessment and
- (iii) the influence of CBT on instructors' practice.

These three foci comprise the three sub-projects (NREC Major projects #4, #5, #6), which together address the overall question. In achieving this, it is necessary to capture the changing institutional context into which CBT has been implemented and its impact on changing institutional rules. CBT's contribution to the development of skilfulness¹ is the overall concern of the project (as proposed in the central research question). However, the resolution of this question requires an appreciation of whether the implementation of CBT has changed institutional practice -- for instance, was a CBT system ever really realised? In sum, the investigation has to identify the influence of CBT upon three interrelated areas of curriculum practice in terms of its impact upon (a) changes in institutional practice as well as its (b) achievement of the educational goals for which it was proposed. These lines of inquiry are richly interrelated. Table 3 shows how these three strands of the project are linked.

The three associated sub questions are:

In what ways has the CBT model of curriculum been able to address the needs of industry and enterprises and the aspirations and needs of Australians in VET?
(Major Project 4)

How have competency based assessment practices been able to furnish information about individuals' achievements against benchmarks, thereby permitting judgements about student performance, credit and prior knowledge?
(Major Project 5)

How has the implementation of CBT influenced the practice of instructors in VET? (Major Project 6)

These questions consider whether the CBT approach to curriculum is able to address the needs of "industry" (which was its original intention - see Dawkins 1988), enterprises (with the emerging focus on particular workplace sites), and individuals who aim to realise their aspirations through vocational education.

¹ Skilfulness here is accepted in its broadest meaning which includes the development of capacities (conceptual, procedural and dispositional) required to engage in a vocation. Vocation here is also taken at its broadest meaning (e.g. being parent, a classical scholar or a plumber is practising a vocation). Activities of both of a routine and non-routine kind are included. Hence, they are transferable and desirable to individuals wishing to pursue their personal and career goals.

Table 3 - Linking three strands of project

	Development and implementation of curriculum (Project #4)	Assessment procedures (Project #5)	Role of VET instructors (Project #6)
Phase A - Literature Review	Comparing other models Reviewing existing literature	Comparing CBA with other approaches to assessment	Identifying role of instructors in instructional programs
Phase B - Antecedent conditions <i>(What was the existing situation?)</i> <u>Empirical work in industry, enterprises and VET institutions</u>	Approaches to CD in use and their outcomes	Assessment approaches in use and their outcomes	Role of instructors and their consequences
Phase C - Processes <i>(What processes were used?)</i> <u>Empirical work in industry, enterprises and VET institutions</u>	Evaluation of development and implementation of CBT VET programs	Validity and reliability of assessment across industries	Staff development support for CBT implementation Quality of CBT implementation
Phase D - Outcomes <i>(What was achieved?)</i> <u>Empirical work in industry, enterprises and VET institutions</u>	Success in meeting the requirements and needs of enterprises, industries, instructors and students	Ability of CBA to make judgements about students performance, credit and prior knowledge in VET institutions and workplaces	Understanding of CBT by VET instructors Performance of CBT across settings and institutions
Phase E - Analysis and refinement <u>Advice from industry, enterprises and VET institutions</u>	Analysis of antecedents, processes and outcomes. Refining that analysis	Analysis of antecedents, processes and outcomes. Refining that analysis	Analysis of antecedents, processes and outcomes. Refining that analysis
Phase F - Finalising report	Writing report Integrating with findings, deductions and recommendations from #5 and #6	Writing report Integrating with findings, deductions and recommendations from #4 and #6	Writing report Integrating with findings, deductions and recommendations from #4 and #5

Industry is taken to be the voices who speak on behalf of, and advocate the interests of, an industry sector (e.g. members of ITABS, industry case loaders, curriculum officers). However, these voices often appear to have a different focus from those within enterprises (Billett & Hayes 1998). It is enterprises who actually employ, engage in productive or service tasks, and who may sponsor their employees' vocational education and training. The 'industry' perspective has concerns with the quantum of skilled workers and the quality of their preparation. These concerns include the provision of nationally-consistent courses able to develop the knowledge which permits those who are employed in industry sectors to respond to the demands of enterprises, but also to move across enterprises in that sector. Industry is concerned with the overall level of skilfulness required to maintain and develop a particular industry sector. Enterprises, however, want workers whose skilfulness is able to address their existing and emerging challenges (Carnevale 1995, Rowden 1995, 1997). Recent work has indicated that, currently, enterprises want two levels of customisation of VET programs to meet their particular needs – first they want the curriculum to be customised to their industry by creating a range of modules from which they can choose those which pertain to their workplace, and secondly they want the modules themselves to be made more workplace-specific. (Billett & Hayes 1998). Consequently, there are likely to be quite different outcomes required by particular enterprises and these are likely in some ways to be different from what 'industry' wants. Moreover, it seems the concerns of enterprises are now displacing those of industry in governmental priorities, with the new Training Packages aimed at satisfying enterprises' requests for customisation. The needs of individual Australians who participate in VET are now displaced in arrangements that focus on Industry and Enterprise needs. However, individual needs are now being viewed as more legitimate (Billett, et al, 1997). Individuals have personal and occupational goals and require knowledge, which is robust enough to permit them to find employment and secure those goals. Of these interests, the bi-partite 'industry' voice is the one that has been most co-opted by government to advance (and occasionally modify) its views, policy and the implementation of practices determined by these policies.

With all this in mind, the first sub-question is linked to curriculum development and has dimensions of institutional practice and educational worth. So the focus here is upon how curriculum practice shaped by CBT has been able to secure for individuals the knowledge required for flexible and adaptable performance.

The second question focuses on assessment. The ability of assessment practices under a competency-based system to identify, define and utilise appropriate benchmarks to advance reliable and valid judgements is of concern to students, employers, course accreditation bodies and the vocational education system more generally. In particular, the ability of assessment practice to assess and determine whether individuals have the knowledge required to be flexible and adaptable is pertinent to the overall governmental goals. The Employment and Skills Formation Council (1988) claimed it is possible to discern difference in the quality of performance through competency based assessment (CBA). Concerns about assessment inform several dimensions of the investigation, its educational worth, and influence on practice -- that is, the degree to which changes have occurred in assessment practices, and whether CBA can furnish valid and reliable judgements about individuals' learning of the vocational knowledge required for skilfulness.

The third question addresses the degree to which the implementation of CBT has actually changed the practice of instructors within VET. It raises questions about the transformation of institutional practice and, in particular, in what ways externally mandated aspects of practice are likely to be adopted by both novice and experienced vocational instructors. It also

addresses whether CBT influenced practice in ways that are likely to develop the knowledge required for skilfulness.

In sum, these areas of interrelated inquiry require two levels of analysis:

- (i) to understand the changing institutional context for implementation of, and judgements about, CBT and,
- (ii) to determine whether CBT's contributions to curriculum practices are likely to result in adaptability; in other words its educational worth.

1.3. Structures and Procedures

This Report is structured into seven chapters. Chapter One has been concerned with outlining the context for the project and its policy analysis. Chapter Two provides an overview of the associated literature, focusing on both the expectations behind the initial implementation of CBT, and evaluations of that implementation over the past ten years or so. Chapter Three outlines the project's methodology, while Chapters Four, Five and Six cover the findings of the separate projects. Chapter Four is, therefore, a report of findings which focus on curriculum development, Chapter Five reports findings concerning assessment issues, and Chapter Six outlines the work completed in evaluating changes in teachers' practice. The findings and conclusions of these three chapters are then synthesised into key deductions and ways forward in Chapter Seven.

1.4. Overview of Findings --Summary

These findings may be summarised as follows:

Comparisons between regions and industries were complex because of

- Difficulties in separating CBT from other influences
- Different bases for the uniform introduction of CBT

Overall, it was found that, under CBT, there has been a tendency toward

- Fostering closer relationships with industry spokespersons or those in enterprises
- Achieving uniformity through CBT, although this process has not been as rapid or easy as expected
- CBT meeting enterprise needs; however it is unclear whether enterprise satisfaction stems from CBT itself or associated initiatives
- Evidence of improving competitiveness, especially in terms of enterprise needs for multi-skilled workers; however there is little evidence that CBT is responsible for the improvement
- Higher order outcomes and transfer through current curriculum practice are being achieved, but whether this is due to CBT is not certain.

1.5. Subprojects

1.5.1 Subproject #4 -- Curriculum processes

Industry needs and the CBT model of curriculum

The CBT model of curriculum secured some adherence to industry mandated procedures, particularly in the centrality of the industry voice in determining course content and intents (aims, goals and objectives), more uniform assessment practices and accreditation procedures that provided the means for externally derived demands to be implemented. Curriculum processes have become more responsive to industry needs, albeit at the cost of teacher autonomy. This responsiveness has been manifested through accreditation and registration processes. These processes have closely aligned curriculum intents, content and some teacher activities to industry needs. This is evident in the reduction of a role for teachers in the

development of curriculum intents and content, and measures aimed to maintain teachers' currency.

The evidence suggests that teachers' use of syllabus cannot be relied upon to deliver uniform outcomes because teachers' interpretation and utilisation of syllabuses are not the same. Importantly, much effort was expended in the development of uniform national syllabi across the VET sector to manage a standard implementation process. However, it was only in those areas that teachers felt the pressure of accountability was there most evidence of change. Perhaps the commonest reported change was in assessment practices where work demands and press for uniformity was most widely apparent.

However, the prospect of achieving uniformity in response to industry needs was always likely to be optimistic. There are different requirements of what comprises competency in different workplaces, different interpretations against standards, different levels of readiness of teachers and quite different circumstances for the implementation of curriculum and judgements about competency abound. In overview, the following were identified.

- Changes to curriculum development processes to directly respond to industry needs.
- Changes in outcomes of curriculum development process from an 'internal' VET focus to one focussing upon industry/enterprise needs.
- Usurping of teachers' roles by industry in the determination of intents and content (the intended curriculum).
- Institutionalisation of industry/enterprise involvement in curriculum development processes
- Implementation of measures to secure teachers' industry currency.
- Evidence of adaptable industry outcomes secured by current VET provisions.
- Uniformity not achieved through CBT model of curriculum, nor likely to be achieved.
- Reliance on syllabus use and accreditation processes to responsiveness flawed.
- Enterprise needs not reflected in uniform industry standards.
- Use of specific behavioural objectives and detail standards not associated with securing adaptability and flexibility.
- Instructional processes, activities and means of engaging students, rather than specified outcomes and industry standards identified as means for developing robust industry knowledge.

Enterprise needs and the CBT model of curriculum

Enterprise respondents claimed that multiskilling, student competence and relevance of courses had all been enhanced by CBT. Access to additional trainees and reduced time in colleges and in courses, were also reported. Closer interaction with enterprises has led to outcomes appreciated by all client groups (industry, enterprises and students). However, this outcome is not wholly a product of CBT. The customisation of curriculum to enterprise needs is now emerging as a key goal for vocational education provisions and is also a key feature of the implementation of Training Packages. However, although CBT has pressed for a consideration of external sources in the determination of intents, much of the emphasis on enterprises has arisen out of the shift to an enterprise focus and the implementation of market-based policies have caused providers to take account of enterprise needs.

Meeting enterprise needs has been through responsiveness to external mandations. Outcomes has included improvements to teachers' currency, understanding the requirements of enterprises, through improved access to VET provisions and work-based components of vocational education programs. These outcomes are largely the product of curriculum processes that have an external focus and attempts to secure compliance through the use of accreditation procedures.

In terms of securing the skillfulness and adaptability (and particularly the multi-skilling) desired by enterprises, the analyses suggest that it is the kinds of activities that the learners engage in the both the workplace and the classroom which are likely to deliver these outcomes. Interestingly, this finding supports the sorts of arrangements that have traditionally been found in the apprenticeship system. Consistently, it has been reported that a combination of experiences (e.g. project work, group activities, teacher-guided activities and self-managed activities) are those which secure the knowledge required for adaptability and skillfulness. However, it may well be the combination of the experiences that is at the core of the utility of these arrangements. Hence, the quality of the 'enacted curriculum', something managed best by teachers is likely to be central to the quality of learning and the prospect of securing the outcomes desired by industry, enterprise and individuals.

The focus of curriculum process on relevance in terms of particular enterprise needs is proposed as being central to views on the effectiveness of CBT in realising competitiveness. It seems that market-based provisions have been useful in enhancing competitiveness. Also evidence of the efficacy of these arrangements could be found in enterprises continuing to employ apprentices and send them to the providers. A combination of experiences in the classroom and workplace (e.g. project work, group activities, teacher-guided activities and self-managed activities) are those which secure the knowledge required for adaptability and skillfulness. However, it may well be the combination of experiences that is at the core of the utility of these arrangements. For instance, not all learners were able to manage the demands provided by self—managed activities. Also concerns about the inadequacy of teacher support were reported in both the quantitative and qualitative data. Hence, the quality of the enacted curriculum, something managed best by teachers is likely to be central to the quality of learning and the prospect of securing the outcomes desired by industry, enterprise and individuals. In sum, the key findings were.

- Interaction between enterprises and providers develop understanding of enterprise need
- Responsiveness to external mandation (teachers' currency, improved access, work-based learning).
- Outcome of instructional activities in classroom and workplace (e.g. project work, group activities, teacher-guided activities and self-managed activities).
- Student competence and relevance to the workplace.
- Customisation to enterprise need.
- Need for greater consideration of the learning experiences which will deliver competitiveness and multi-skilling.
- With the exception of sourcing intents and content externally, CBT itself not delivered the majority of enterprise needs.
- CBT has not itself provided an approach to instruction which can deliver skillfulness, adaptability in the form of multi-skilling.
- Little evidence that CBT itself has improved competitiveness.

Individual needs and the CBT model of curriculum

Currency of teachers' knowledge is proposed as being important for providing content knowledge that is transferable to the workplace. Measures in the accreditation arrangements which demand currency of teachers' knowledge were reported as pressing teachers into enhancing their skills and being useful in meeting students' needs. This outcome appears to be a product of shifting curriculum decision-making from an internal to a more external focus of concern. Opportunities for individualised learning were provided through the use of self-paced approaches to instruction.

Students claim the ability to apply basic skills and principles across different workplaces furnished evidence of transferable outcomes. Hospitality students, in particular, supported this outcome. Students' ability to transfer knowledge learnt in the classroom to the workplace and

developing further skills building on what has previously been learnt, was also proposed by students. In consideration of process, students claim that transfer is underpinned by understanding and that understanding has been secured through engagement in vocational education programs. Also it is claimed that workplace learning experiences assist the transfer of knowledge.

However, not all learners reported being able to manage the demands provided by self—managed activities and concerns about the inadequacy of teacher support were reported in both the quantitative and qualitative data. Hence, the quality of the enacted curriculum, which we assert is something managed best by teachers is likely to be central to the quality of learning and the prospect of securing outcomes desired by industry, enterprise and individuals.

There were repeated claims, although not specified, that content of courses was not relevant to workplace activities. In sum, the findings were as follows.

- Currency of teachers' knowledge.
- Relevance of courses and outcomes.
- Ability to transfer basic knowledge from classroom to the workplace.
- Opportunities for individualised learning.
- Interactions between providers and enterprises.
- Certification.
- Lack of relevance in course content.
- Difficulties with resource-based, self-paced learning when teacher support is lacking.
- Dissatisfaction with quality of teaching/learning experiences.
- Limited evidence that CBT has resulted in skillfulness.

1.5.2 Subproject #5 – Assessment practice

Since assessment (and the results and credentials which arise from it) is a prime motivator of staff and student activity, its control is also a powerful manager of change. The CBT movement has placed great emphasis on changing assessment practices to make them more uniform nationally and to ensure that these practices conform more rigidly with perceived industry needs as defined in competency standards. Despite this move for conformity, Chapters Four and Six of this report demonstrate that curriculum design and teachers' practices retain a degree of diversity. While practices differ, the issues which surround assessment under CBT show a greater degree of uniformity across industries and states than for curriculum development or teaching. The findings for this subproject can be summarised as follows:

- *Incentive* - Non-graded passes are seen as demotivating by many students (and especially better students), teachers and employers, whereas what is required to develop expertise are high incentives to commit to learning.
- *Practice and Understanding* - There has been a de-emphasis on theory and a re-emphasis on practice in assessment. This has increased opportunities for the development of routine skills but limited opportunities to reapply and extend those skills in combination with theoretical concepts. Less tangible aspects of assessment such as attitudes and 'common sense' also tend to be neglected.
- *Authenticity* - The focus of assessment is on demonstrated competence in action and is more closely linked to "real life" situations of work and more focused on specific workforce needs.
- *Complexity* – There is little evidence in the data of assessment of problem solving and creative abilities. Clearly this is of concern for workplaces which are under more or less

constant change and where new products, new practices and new technology are being introduced at an increasing rate.

- *Integration* – The partitioning and assessment of learning into small modules is unlikely to bring about integration of knowledge that is required for expertise. More holistic, global and integrating assessment which accumulates within and across modules is called for.

1.5.3 Subproject #6 -- CBT and teachers' practice

CBT has had a profound effect on the practice of instructors, but the effect in many cases has been indirect rather than direct. Moreover, one's assessment of the impact of CBT is dependent on how one sees the role of instructors. An important finding in this respect, in relation to the sample of TAFE and non-TAFE instructors who were interviewed for this project or who took part in focus groups, is that respondents tended to regard themselves as 'teachers' not 'instructors'. Such self-labelling is important to participants, they claimed, because the label 'instructor' implies a narrower role and range of professional duties than does the term 'teacher'. To them, the term instruction means face-to-face teaching and monitoring of students. Teaching is something that is much more complex and involves a wide sweep of activities that require the exercise of professional judgements and engagement with students, colleagues and stakeholders. Indeed, the distinction made between these two terms in many ways summarises the range of concerns that many participants, including some industry representatives and curriculum personnel, express about the impact of CBT on the role and practice of teachers. The range of concerns is summarised as follows:

Changes to instruction

- Lack of input of educators into curriculum and assessment design.
- CBT encourages the measurement of specific aspects of learning which can be seen, in some respects, as disconnected from teachers' relatively holistic conception of teaching.
- CBT is often perceived as something akin to an administrative technology – a framework for VET delivery in purely behavioural terms, leading to inappropriate restrictions in teaching practice.

Teachers' role

- CBT is associated with the production of specific knowledge (in the form of facts and know-how) and specific behaviours. However, respondents strongly held that outcomes of teaching and learning ought to be viewed in terms of 'process outcomes'.
- Teachers felt that the most important aspect of teaching and learning ought to be the development in students of the capacity to learn how to learn throughout their careers and their lives. Promoting such capacity was seen as the work of teachers not instructors.
- Changes in teachers' practice are viewed in terms of degree, rather than kind.

Teaching methods

- Shifts from college-based, face-to-face teaching guided by the curriculum to an increased emphasis on assessment.
- Diversification of teaching methods.
- An expansion of workplace delivery and assessment.
- Increased responsiveness.
- A shift away from teacher-centred instruction.
- An increased need for student support.
- Less importance placed on the need for teachers to use their professional judgement limiting the range of teaching practices teachers use and the nature of their relationship with students in particular.

Impact on students/trainees

- Restriction of the relationship between teachers and students
- Limited conceptions of the role of the teacher, resulting in different learning outcomes under CBT.
- Different and less personal social and educational formation of students.
- too much emphasis on self-pacing and text-based materials distanced students from their teachers.

Impact on teachers' work

- Intense pressure on teachers to deal with change.
- Increase in sessional and contract employment has led to decline in common understandings about good practice in teaching and standards of performance.
- Teachers felt that their special skills do not lie just in their vocational knowledge but in their skills and relationships as teachers.

1.6. Recommendations for Practice

These project findings suggest the following recommendations:

1.6.1 Curriculum

Recommendations for revision of curriculum practice can be categorised into three kinds:

- (a) *The intended curriculum* – The sole use of behavioral objectives presents inadequate vocational education goals. Therefore, process and value objectives ought to be considered alongside behavioral objectives. Where matters of performance are routine and observable, then behavioral objectives may suffice. However, non-observable phenomena such as procedures and understanding may not be easily measurable in the same way. Complex forms of thinking and acting require the use of process objectives to emphasise the centrality of learning activities in developing the knowledge required for adaptability and transfer.

While there is a need to continue sourcing curriculum intents from external sources such as enterprises and industry, input from teachers and other individuals is likely to be useful in providing appropriate experiences. Teachers need to have a role in developing curriculum as well as in implementing programs in order for deliberations to be informed by professional practice.

- (b) *The enacted curriculum* – Modification to accreditation and registration processes could be useful in pressing for a consideration of process factors, particularly those required for developing adaptability and skilfulness. Accreditation processes could specify the kinds of experiences required for engaging learners in the kinds of thinking and acting which are likely to lead to outcomes associated with performance; e.g., problem solving activities of routine and non-routine kinds, integrated workplace and classroom experiences, guided learning to secure understanding, and higher orders of procedural knowledge and groups activities embedded in vocational activities. Moreover, accreditation and registration processes should specify how learners' readiness to engage in self-directed activities can be appraised and monitored, as well the level of guidance required for those who are not ready for autonomous problem solving.
- (c) *The experienced curriculum* – Accreditation and registration procedures might also benefit by focussing on how engagement in activities and appropriate levels of support can be understood. In addition, a heightened emphasis on making links between classroom and workplace would also be useful.

1.6.2 Teachers' Practice

The key recommendations for teachers' practice are about providing the bases for teachers to deliver to students the kinds of opportunities, experiences and guidance that will lead to developing their adaptability and skilfulness:

- (a) *Broadening teachers' role* – teachers need to be more than implementers. They need to be engaged as adapters, developers and researchers. Teachers need to have more discretion within the enacted curriculum to allow them to act upon their judgements of the best integration of routine and non-routine experiences and the best combination of independent, group and teacher-led experiences. This deeper involvement will allow teachers to better determine and respond to individuals' needs, and to guide them in developing their adaptability and skilfulness.
- (b) *Deepening teachers' role* – The valuing of pedagogic expertise needs to be acknowledged hand-in-hand with vocational knowledge. The developing of complex forms of knowledge is not straightforward. Teachers have to possess appropriate expertise – for example, the contemporary roles of teachers as guides for the construction of learners' knowledge requires different kinds of expertise to that required for didactic instructional strategies. Moreover, teachers need to have understanding of the applications of combinations of experiences within different learning environments – thus a greater emphasis on pedagogic principles and practices is needed.
- (c) *Developing teachers' knowledge* – Broader and deeper roles for teachers require more attention to the professional practice side of teachers' work. This means that professional preparation for vocational educators should be both thorough and comprehensive, and that professional development emphasise pedagogic as well as vocational aspects of practice.

1.6.3 Assessment practice

Changes to assessment procedures are required to develop and maintain reliability and validity:

- (a) *Validity* – for assessment to be valid, we need to consider the forms of knowledge to be assessed, the circumstances in which performance actually occurs, and the importance of assessing understanding as well as practice and dispositional attributes. In short, validity needs to be considered in terms of benchmarks upon which judgements about students' abilities to be flexible and adaptable can be made. It is therefore recommended that benchmarks other than behavioural objectives be considered and that there be more negotiation about the detail of those benchmarks in circumstances where an understanding of the situational factors can also be included.
- (b) *Reliability* – Measures of reliability were largely overlooked in the first decade of CBT, apart from the use of standards and outcome statements. With greater diversity of applications, measures of reliability need to consider the standing of judgements about student performance and the standing of certification within vocational education. While there may be differences in the detailing of intents against which assessment will be made, approaches such as moderation will need to be considered in order to assist reliability. Again, professionally prepared educators are able to provide these kinds of outcomes.
- (c) *Incentive* – data from Subproject #5 suggest that the issue of incentive is at the core of individuals' learning. Thus, non-graded passes may remove a key incentive for learners. The kinds of knowledge required to develop flexibility and adaptability require effort on the part of the learner. Removing incentives in the form of graded passes may remove an incentive for engagement in the difficult and demanding act of learning these forms of knowledge. It is therefore recommended that graded assessment be introduced to provide an important incentive for learners.

In overview, the range of experiences, activities and support provided mostly by teachers, and comprising existing instructional and curriculum practice, is most likely to be instrumental in the development of flexibility and adaptability. CBT and the reform movement have overlooked many of these contributions. However, the findings in this project show that they are the kinds of arrangements that need to be strengthened and prioritised in future

arrangements. Some of these are identified in the data analyses in Chapters Four through to Six.