Chapter 7
Findings, conclusions and recommendations

7.1 Overview statement
In overview, this research project has used a consolidated body of data from subjects across two states in two industries in both metropolitan and non-metropolitan centres to determine if, and in what ways CBT has contributed to developing an adaptable and flexible workforce. Three separate lines of inquiry have been pursued in this project. These relate to (i) CBT as a model of curriculum development; (ii) assessment practice and (iii) the impact of CBT on instructors’ practice. These three separate but interrelated lines of inquiry (comprising NREC subprojects #4, #5 and #6) used the same body of data for its analyses and deductions. However, the use of particular items across the subprojects tended to differ. The findings from each of these separate inquiries are presented in Chapters 4, 5 and 6, respectively. This chapter seeks to consolidate the outcomes of these three lines of inquiry in responding to the overall research question for the project. The chapter commences with summary statements and overviews of findings from each of the three projects and then aggregates these deductions in providing a response to the central question. Following this, a set of proposals arising from the analyses and deductions are presented suggesting means to enhance the prospects for achieving an adaptable and skilful workforce in ways that address the needs of industry, enterprise and individual Australians.

To commence, in the next three sections the responses from each subproject to their research question are summarised.

7.2 Subproject #4 - Curriculum development and practice
The data relating to this subproject is presented, analysed and discussed fully in Chapter 4. Also, a series of deductions was advanced from this analysis. This section responds to the question set for the subproject by drawing on the analyses and deductions in Chapter 4. The question for this subproject is:

*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)*

The structuring of the response is to take each of these three client groups (industry, enterprises and individuals) separately and discuss in what ways CBT meets these needs before providing some overall discussion. Within the responses to each client group are statements about how their needs have been met and failed to be met.

7.2.1 Industry needs and the CBT model of curriculum
**Summary statements**
- Changes relating to the curriculum development processes directly responding to industry needs
- Changes in focus of curriculum development process from an ‘internal’ VET focus to one focussing upon industry/enterprise needs
- Teachers’ roles usurped by industry in the determination of intents and content (the intended curriculum)
- Institutionalisation of industry/enterprise involvement as a source of intents and content in the curriculum development processes
- Implementation of measures aimed at securing currency of teachers’ industry knowledge
- Evidence of adaptable industry outcomes secured by current VET provisions

**CBT not meeting needs of industry**
- Uniformity not achieved through the CBT model of curriculum, nor likely to be achieved
• Reliance on syllabus use and accreditation processes to manage industry responsiveness is flawed
• Enterprise needs not reflected in uniform industry standards
• Use of specific behavioural objectives and detailed standards are not associated with securing adaptability and flexibility.
• Instructional processes, activities and means of engaging students, rather than specified outcomes and industry standards were identified as the key means for developing in students robust industry knowledge.

In more detail the ways in which the CBT model of curriculum have met industry needs are as follows.

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 introduction of CBT brought with it a nationally uniform means of developing and organising curriculum documentation within VET. For examples, prior to its implementation, different bases for curriculum decision-making and organisation were being used in both sectors. In both Victoria and Queensland, the provisions of curriculum documentation and associated procedures for the Metals industry were centralised within the training system. However, in Hospitality, college-based curriculum provisions guided curriculum practice much more. For both industries there was a change to processes centralised outside of the training system under the auspices of national and state industry advice.

There is evidence that the development of the robust knowledge required for transfer within an industry sector has been secured largely through the existing curriculum provisions. The strongest evidence is found in the consequences of instructional activities (group learning, self-directed learning, teacher-guided instruction) and unintended processes (part time work in enterprises) and factors providing a basis for students to engage in problem-solving activities (project work). These are reported as being the kinds of experiences likely to secure the forms of knowledge which underpin adaptability, flexibility and transfer. The important finding here is that the kinds of experiences the students are engaging in seem likely to be a useful source of higher order outcomes of the kinds required for adaptability and flexibility. However, the question remaining to be addressed further is to the degree that these are the direct product of CBT or are they the product of other, albeit associated processes.

An outcome of industry involvement in the last decade has been to institutionalise the inclusion of industry as a source of needs in the curriculum development process. The introduction by ANTA of Training Packages has retained industry’s involvement in the development and maintenance of competency standards through the continued involvement of ITABs through the National Training Framework Committee (NTFC). However, the formation of the NTFC brings the accreditation of competency standards directly under the control of ANTA, yet maintains industry influence over the curriculum, particularly the ‘intended curriculum’. Training Packages comprise both endorsed and non-endorsed components. Endorsed components are the national competency standards and assessment guidelines as endorsed by the NTFC. Curriculum documents, such as syllabuses are
non-endorsed components and are not required to be endorsed by the NTFC. In essence, the role of training providers has been transformed from certifying the competency of students against learning outcomes stated in curriculum to certifying the ability of students to satisfy national competency standards using assessment guidelines which have been endorsed by the NTFC.

The question of how many providers are likely to continue to use curriculum documents as a basis for instruction. Also, it seems likely that the needs of individual enterprises will likely ultimately usurp national industry prescriptions (Billett & Hayes 1998).

Conversely, the ways that the CBT model of curriculum development has failed to meet industry needs are as follows.

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. As stated in the previous section, the impact of Training Packages on the use of syllabuses and ANTA’s intention to create uniform national competency standards which can be customised to the needs of individual enterprises is yet to be determined.

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.

Moreover, if some of the uniformity stated in industry standards was to be achieved, more than reliance on teachers’ adherence to curriculum documents would have been required. Moderation of assessment processes and outcomes, negotiation with and involvement of those who role it was to enact the curriculum (teachers) would also have been required.

Evidence of transfer across workplaces, in adapting to innovations and transferring basic skills across settings is provided as evidence of the efficacy of the current curriculum arrangements in securing transfer within industry. The first of these transfer outcomes is reported only in the Hospitality industry. Also, it is Hospitality industry/enterprise respondents who refer to transferring basic skills across the workplace. This may well be a part of employment of this industry more than any other factor. It is claimed that because work performance is contextualised, simple propositions about transfer need to be considered cautiously. However, as discussed above it seems that the securing of flexibility, adaptability and transfer has little to do with the central tenets of CBT, the specification of learning outcomes and the use of instruction and assessment processes that are focussed on these outcomes. Rather it is processes of instruction, engagement in activities and experiences found in the ‘experienced curriculum’ that are most likely to secure these outcomes.

7.2.2 Enterprise needs and the CBT model of curriculum

Summary statements

- Interaction between enterprises and providers developed 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) led to improved work performance

- Student competence and relevance to the workplace increased.
- Customisation to enterprise need

**CBT not meeting needs of enterprises**

- 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 that can deliver skillfulness, adaptability in the form of multi-skilling, instead this is furnished by associated and unassociated processes.
- Little evidence that CBT itself has improved competitiveness

**In more detail the ways that the CBT model of curriculum development has met enterprise needs are as follows.**

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.

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 mandates. 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
The efficacy of these arrangements could be found in enterprises continuing to employ apprentices and send them to the providers.

Conversely, the ways that the CBT model of curriculum development has failed to meet enterprise needs are as follows.

It is claimed that little or no evidence exists to link CBT with improved enterprise competitiveness. More specifically, because enterprise needs are so different there is little prospect of CBT being able to meet these needs whilst certification is premised upon centrally mandated curriculum documents. Instead, initiatives that have accompanied CBT, or were in place prior to its introduction, rather than CBT itself have brought about the outcome of meeting enterprise needs through closer associations and greater interactions between enterprises and providers of VET.

While meeting enterprise needs (content and objectives) has become a feature of curriculum practice, more than this is required. A greater consideration of the instructional processes and experiences is required to develop the knowledge needed for performance in these workplaces.

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, again 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.

Of these arrangements, many were in place prior to CBT. Probably the shift to self-pacing can be associated with the broader CBT movement. However, there is little here that suggests that CBT itself contributes to adaptability and transfer within enterprises, except in the provision and assessment of routine experiences and outcomes. While these are important and necessary for performance, on their own they are not adequate.

7.2.3 Individual needs and the CBT model of curriculum

Summary statements

CBT meeting needs of individuals
- 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 which has national standing

CBT not meeting needs of individuals
- 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

In more detail the ways that the CBT model of curriculum development has met individuals needs are as follows.
Currency of teachers’ knowledge is proposed as being important for providing content knowledge that is transferable to the workplace. In particular, in the Hospitality sector where the courses are more college-based the currency of teachers’ knowledge is particularly valued. Unlike the students in Metals courses who spend the majority of time in the workplace, Hospitality students are more dependent on their teachers’ expertise because their courses are college-based. 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, more than others, 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.

Conversely, the ways that the CBT model of curriculum development has failed to meet industry needs are as follows.

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. This was more prevalent in the Metals than Hospitality sectors. This requirement could be product of the differences in the course with the former being more work-based and the latter more college-based.

The quality of instructional experiences, particularly access to teachers, was claimed as indicative of how CBT had failed to meet individuals needs.

There is limited evidence that CBT itself has helped achieve more skillfulness in students. Instead, the kinds of experiences that seem to have secured these goals were associated with activities both intended as part of the broader CBT movement (self-paced and resource-based activities) and also that which existed as teaching practice prior to CBT (guided teacher – activities).

In sum, it seems that the current provisions of VET are meeting the needs of industry, enterprises and individuals in different ways. The mechanisms that have been used to source the intents and content for courses outside of the VET are claimed to be meeting the needs of enterprises and industry. Also the accreditation and registration processes are reported to be influencing curriculum practice in ways that are meeting these needs, and also those of individuals. These effects are held to be closely aligned to the CBT model of curriculum. This model focuses mainly on the ‘intended curriculum’ – what should happen and in some ways the ‘enacted curriculum’. However, what is intended is not always implemented with fidelity because of differences in interpretations, circumstances and perspectives. Importantly, it is beyond the ‘intended curriculum’ which is focus of CBT, where the likelihood of meeting the shared goal of skillfulness and adaptability is found. Consistently, it seems to be the quality of educational encounters that determine whether these goals are realized. In combination, it seems that group-activities,
individualised learning, resource-based activities, project work and teacher guided experiences as well as combinations of classroom and workplace–based experiences are likely to deliver outcomes associated with adaptability and flexibility.

For industry, this goal is important for the development of robust industry-based knowledge that is transferable across workplaces. For enterprises, these outcomes are important for the completion of both routine and novel tasks. That is, the ability to be multi-skilled and yet also responsive to new challenges in the workplace. For individuals, having knowledge which is adaptable, offers the prospect of them realising their personal and vocational goals, rather than being wedded to one employer.

Therefore, much of what has been the desired goal of government policy can be found in the processes that are used in determining educational intent and content (the intended curriculum). However, the processes of enacting the curriculum in the form of experiences and encounters from which learners develop the knowledge required for vocational performance are less directly influenced by CBT. It is concerns with process considerations such as the quality of these instructional activities and learning opportunities, more than measurable outcomes that has furnished the ‘experienced curriculum’ from which learners have derived their ability to be adaptable and skillful.

7.2.1 Subproject #5 – Assessment practice
This section summarises the findings from subproject 5, which addresses the following question:

_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)_

In Chapter 5, the results relating to this subproject are presented, analysed and discussed. The subproject addresses the question by taking skillfulness or expertise as the benchmark against which the results pertaining to student assessment are appraised. Skillfulness is accepted in its broadest meaning which includes the development of capacities (conceptual, procedural and dispositional) required to engage in a vocation. Flexibility and transferability are desirable in individuals wishing to pursue personal and career goals, as they are to the industry itself. Advances in cognitive learning theory and the nature of expertise have also contributed to a greater understanding of the development of expertise. As a result, it is clear that vocational education needs to prepare workers who are “able to generate and evaluate skilled performance as technical tasks become complex and as situations and processes change, reason and solve technical problems, be strategic, innovate and adapt” (Stevenson 1994:9). In the appraisal of the results from this project, it is argued that the more uniform assessment practices are in many ways detrimental to the very goals of the national reform agenda that the implementation of CBT was supposed to fulfill.

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 4 and 6 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.

**Summary statements**
- _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.

Expert workplace performance involves deep conceptual understanding, well developed routine procedures and the ability to be flexible, creative and adaptable in the face of new endeavors, problems and change. It is argued that at least six factors are of critical importance in assessing expertise. These are having learners who are motivated, who have well developed routine skills, who have a deep understanding of what they are doing, who are capable of engagement in a variety of tasks in complex authentic settings and who can integrate their knowledge and skills to achieve adaptability. Each of the six factors is examined in turn (except that "Practice" and "Understanding" are taken together) in order to appraise assessment practices under CBT.

**Incentive**

The assessment issue that provoked the strongest response from students, teachers and industry representatives was that of the non-graded pass. The issue is coupled with motivation for learning and performance. Learning, especially for complex abilities as are involved in expertise, occurs more easily when learners are motivated. Of course, motivation is not always linked to grades. Nevertheless, assessment and reporting processes that provide incentives are powerful in promoting the development of expertise.

For the most part, teachers and employers were adamant that non-graded assessment was demotivating, especially for good students. Students also reported that non-grading was an issue, but were more evenly divided between its benefits and problems. On the question of future directions, a return to the graded system that encourages and rewards excellence was widely advocated. Other improvements suggested were that students be ranked according to how easily and quickly they achieved the competency. Thus, non-graded passes are seen as demotivating by many students (and especially better students), teachers and employers, whereas what is required for expertise are high incentives to commit to learning complex material.

**Practice and Understanding**

In the context of this study the knowledge of understanding is commonly referred to as theory or conceptual knowledge and the knowledge of skills as practice. Since both are spoken of together (often as contrasts) they are discussed together. Routine procedures, demonstrated as practiced skills, are required for expertise. They are acquired and developed towards automation through repeated application. Expertise, however, also relies on understanding. Knowledge of situations and of linkages between components provide the understanding of when and where practiced skills should be used and when known skills are inadequate for the job at hand.

With the emphasis on more easily specified technical requirements, less tangible aspects of assessment such as attitudes and 'common sense' get neglected. There has been a narrowing of learning which to a certain degree has become disaggregated:
There’s been a strong switch from “education” to “training” and a very strong focus on the workplace. The continuum of training hasn’t been addressed – we tend to atomise training under CBT (425).

Expertise with adaptability requires deep understanding and rich connections between theory and practice. In suggesting future directions for the development and assessment of expertise, less assessment and less paperwork would be a step in the right direction. While this would lower the level of detail in auditing and accountability, it would allow a broadening and deepening of assessment tasks and permit a re-emphasis on theory and its contribution to performance. It is doubtful whether the implementation of Training Packages will be able to meet this requirement.

**Authenticity**
A powerful idea underlying vocational training is that learning can be transferred from the setting in which it is learned to that in which it is needed to perform work. The ability to successfully perform in a variety of ways and settings, especially rich variable settings such as many authentic workplaces, provides evidence that an individual is adaptable. This ability can therefore be used as a basis for assessing expert performance.

As a result of the implementation of CBT, competency based assessment is more aligned with industry standards and more closely linked to "real life" situations of work. While workplace assessment is common, simulations and role plays (e.g. in a training restaurant) also provide an opportunity to practice in a safe environment. Yet there is a cautionary note, for the increase in standardisation of assessment works against the opportunities for trainees to be able to demonstrate their capacity to function under a variety of circumstances. As to the future, it is claimed that on-site delivery would improve assessment practices. Testing of specific tasks should be extended as part of a real job as it would occur in the workplace. Assessment is needed that is related as closely as possible to a task in the workplace so trainees can appreciate that a task is done for a real purpose and at a standard that industry demands and expects. Greater authenticity and variety of assessment settings provide opportunities to demonstrate (and develop) adaptability.

**Complexity**
The results provide direct evidence of the need for complex intellectual abilities such as those involved in fault diagnosis, creative design and problem solving. For example, in Hospitality the style of cuisine changes on a very regular cycle so people who have the skills to do both the old and the new and draw from the old to create tomorrow's new are needed to help a business grow.

The results provide evidence that such abilities are being developed and assessed in select areas. Yet the paucity of references in the data to the assessment of problem solving and creativity suggests that most trainers and students are not aware of the importance of such abilities and that assessment is not geared to examine them. 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 ability to integrate knowledge and skills from various sources is of importance for adaptability and expertise and assessment ought to test this ability. The results indicate that before CBT, the graded system of assessment was more holistic testing large chunks of work and encouraging integration and accumulation. This provided an encouragement for broad skilling and problem-solving. By contrast under CBT, assessment while more practical, made it difficult for students to research their own topics and did not provide enough integration of theory. There is a need for a more holistic approach to produce competent students who can bring a variety of skills and knowledge together.
On the question of how assessment practices ought to be changed, the general findings are that assessment needs to also assess multiple learning outcomes, be more global especially in the areas of supervision and interpersonal skills and ensure that previously acquired knowledge is integrated with new work, for example through final exams or projects. Other solutions raised were to test later or over a period of time to monitor increase of performance, rather than marking as a once off. Thus the partitioning and assessment of learning into small modules, as is now common under CBT, 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. It would appear that Training Packages have the potential to allow for a more integrated approach to assessment, however, the realisation of this potential will depend on how this initiative is implemented and cannot yet be appraised.

**Conclusions**

CBT brought pressures towards greater uniformity aligned with industry standards and a very substantial increase in testing, record keeping and auditing. Assessment became more workplace oriented but also more dominant and more focused on once-off performance of disaggregated skills. Six indicators of expertise were used in appraising the evidence. Incentive for students to perform well is lowered under a non-graded system. Practice is enhanced by the added emphasis on performance. However, broadening and deepening of assessment tasks with a re-emphasis on understanding of theory and its contribution to performance is needed for the development of expertise. Assessment in authentic settings such as simulated or actual work as happens more frequently under CBT is positive in terms of expertise. However the lack of emphasis on complex tasks such as problem solving and creativity and on the integration of knowledge and skills from differing sources is cause for concern if a more flexible and responsive workforce is to be achieved. Thus, for assessing expertise, while there are encouraging signs in terms of authenticity and practice, there are also some serious questions about assessment practices as they are now commonly implemented to provide for the kinds of flexibility and adaptability of the Australian workforce that will make it more globally competitive.

7.2.2 Subproject #6 CBT and teachers’ practice

The data relating to this subproject is presented, analysed and discussed in Chapter 6. Also, a series of deductions are advanced from this analysis. This section responds to the question set for the subproject by drawing on the analyses and deduction in Chapter 6. The question for this subproject is:

**How has the implementation of CBT influenced the practice of instructors in VET?**

*(Major Project 6)*

**Summary statements**

- The implementation of CBT has had a profound effect on the teachers’ identity and practice
- Concerns about usurping teachers’ identity with that of instructors, which is seen as a narrower form of educational practice
- Concerns that CBT has narrowed teachers’ roles
- CBT perceived by teachers to be an administrative technology more than an approach to learning
- Reform of the teaching labour process included a shift away from teacher centred approach and an increased need for student support, changed relationships between teaching and assessment, and shifts in relationships with students and other interest groups
- This reform has profoundly effected the nature of teachers’ work.

**Transformations in teachers’ roles and identities**

CBT, we conclude, 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-labeling 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.

Although generally supportive of the notion of competencies, and of greater engagement between providers of VET and industry, teachers in the main were concerned that the character of the CBT-based model of curriculum, assessment and pedagogy that characterises current VET instruction has been designed without the input of educators. In relation to assessment in particular, the prevailing view is that 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. From the broad perspective of educators, CBT is perceived to promote a focus on the learner as knower and doer in relation to a specified range of skills and knowledge, or competencies.

While important differences in perception about teachers and ways of teaching emerged in the data between individuals, Victoria and Queensland, Metals and Hospitality, TAFE and non-TAFE, there was strong consensus on certain aspects of the teacher’s role. Most strongly asserted was the view that teaching is not just about the production of fixed outcomes, yet CBT was associated with the production of specific knowledge (in the form of facts and know-how) and specific behaviours. Respondents spoke instead about outcomes of teaching and learning in terms that could be described as ‘process outcomes’. Usually, the most important aspect of teaching and learning that was emphasised was the part teachers should be playing in developing in students 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.

**CBT as an administrative technology**

The effect of CBT on instructors is also complicated because its implementation is clearly associated with funding cuts in TAFE and with intensive price competition across both public and private providers. For this reason CBT is often perceived as something akin to an administrative technology – a framework for VET delivery which restricts the full repertoire of teachers’ work to the aspects that are most likely to promote tangible, measurable outcomes in terms of what students can demonstrate they can do in behavioural terms. Indeed, perhaps the strongest message to be drawn from the data generated across all three sub-projects is that teachers, and other commentators on VET, are skeptical about CBT’s implied reduction in the role of the teacher, and of limitations on what might legitimately be regarded as appropriate teaching practice.

**Reform of the teaching labour process**

The teacher histories and focus groups confirm that the introduction of CBT resulted in both change and continuity in the instructor’s role. It seems that teachers experienced the combination of continuity and change not as a revolution in vocational teaching but as specific changes in their practice. Their new practice, they say, differed in degree rather than kind from previous practice. This is not to say that there have not been direct effects on the patterns of teaching practice. Such effects include 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; and an increased need for student support.
However, when teachers spoke about such specific changes and commented on their effects on their work and their occupation, they insisted that the specific changes add up to a profound revision of the character of their work. CBT has shifted certain work practices, such as assessment, in ways that have some clear continuities with prior vocational education assessment practices. Yet, what have also changed are the relationships between curriculum, assessment and teaching. This indicates that, as well as shifting teaching practices, CBT has contributed to shifts in the relationships and emphases between teaching and other aspects of teachers’ work, and between teachers’ relationships with students and other agencies, particularly industry. In other words, even though some teachers refer to a range of continuities in the details of their day-to-day work, it is clear that the context in which they work has experienced profound change and that the way in which their work is conceptualised, by them and others, has changed accordingly. The critical point is that the overt and easily-identifiable changes in teaching practices and relationships add up to more comprehensive and intangible set of reforms in the teaching labour process.

The element of teachers’ work prior to CBT that was emphasised by respondents was the notion of professional judgement. This notion was connected with a sense of teacher culture in which teaching practice was said to be guided and enacted by the teacher’s holistic sense of what needed to be done, a sense of professional responsibilities deriving from their occupation as both teachers and persons with commitments to Metals or Hospitality industries, and a repertoire of training experience. CBT, it seems, has had effects on limiting the range of teaching practices teachers use and the nature of their relationship with students in particular. The key finding in this respect is that, although teaching practices have changed as a result of CBT, there have been more significant but less obvious changes in the relationship between instruction and other aspects of teachers’ work.

Restriction of the relationship between teachers and students, and limited conceptions of the role of the teacher, are likely to result not only in different learning outcomes under CBT but also in a different and less personal social and educational formation of students. The CBT-based training process, as one put it, ‘produces different kinds of people’. This point is important when related to the reduction of support for students within the VET system that was mentioned by a number of respondents. In particular, it was felt that too much emphasis on self-pacing and text-based materials distanced students from their teachers. Moreover, it was felt, competent performance could never be guaranteed and, in any case, the development of well-rounded tradespersons required contextualised learning and teacher engagement.

**Reshaping teachers’ labour**

The intensification of teachers’ work that has been brought about, according to respondents, as a result of funding cuts, competitive pressures and the need to generate income, has put pressure on teachers to deal with change. Shifts in employment conditions have also contributed to change. A substantial increase in sessional and contract employment has increased the range of people involved in teaching and assessment. Such diversity has necessitated reforms because common understandings about good practice in teaching and standards of performance that had previously been established in relatively small and stable groups of teachers could no longer be maintained. This issue of sessional and contract employment illustrates concerns teachers have about the flexibilising effects of CBT on their work.

Within CBT policy, sessional teachers are valued because they have up-to-date industry experience and introduce considerable staffing flexibility. But teachers regard teaching an occupation with its own skill base, which is rooted in capacities to induct students into expansive learning and to enable them to learn how to learn. The point is that the social capital of training is the human capital of vocational education teachers, whose special skills do not lie just in their vocational knowledge but in their skills and relationships as teachers. Teachers are distinctively skilled, through their training, experience, and professional norms and culture, in relating to students. They encourage learning and enhance students’ opportunities to learn. Such
skills add significant value to learning experiences of students and determine their learning productivity.

Vocational education is not a simple process of transmitting information or skills but a complex process that develops individuals’ and, indeed, an occupation’s capacities to act in various environments. It is asserted that vocational education should teach people how to be members of social as well as industry environments. Teachers, we conclude, must both directly and indirectly have a stake in the ongoing development of CBT, rather than simply reacting to CBT as it is imposed on them, if the best educational outcomes of the CBT policy are to be realised. In an important sense, while CBT undoubtedly has had and will continue to have effects on teachers, teachers must also have effects on CBT.

In the next section, the findings from the three subprojects are brought together to offer a response to the overall research question.

7.3 CBT and the development of a flexible and adaptable workforce

This section seeks to consolidate the findings of the three subprojects reported above. It does this by seeking both common and distinctive findings from these projects. The overall question for the project 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?

In order to respond to this question those factors that are most likely to secure the governmental goal of developing an adaptable and flexible workforce as discussed first, before judgements about the actual contribution of CBT are provided.

One of the difficulties with this project has been that, despite the best efforts of researchers and subjects, clear evidence to support the subjects’ views was not always forthcoming. For example, many students made statements about the worth of CBT and current VET provisions yet did not furnish evidence or instances to support their cases. In response, in each of the subprojects the researchers have gone to considerable efforts to ground their analyses in actual instances and other forms of evidence. From these analyses deductions have been advanced and summarised above. Here, these analyses and deductions are brought together to provide some overall conclusions about the efficacy of CBT in securing an adaptable and flexible workforce. This is the commonly agreed goal for vocational education; that it should be concerned with developing these attributes in individuals. This goal has benefits for the individuals themselves in assisting them realise their personal and vocational goals, the enterprises who need these skills to deploy staff widely in and have expectations that they will be able to manage routine as well as novel tasks, and industry that expects workers will be able to adapt to change and move from one enterprise to another.

As argued in Chapter 2, adaptability and flexibility is associated with the possession of the knowledge required for performance within a domain of practice (e.g. a particular vocation). This knowledge comprises developing the routinised and more consciously applicable strategic procedures, basic factual and richly interlinked conceptual knowledge, and dispositions associated with vocational practice. However, domains of knowledge are not detached from actual practice. So, for instance, there can be no confidence that knowledge developed in one context will be transferable to another unless the understanding (richly interlinked knowledge), strategic procedures and the privileging of that knowledge (what is valued) can account for the different circumstances of its deployment.

Hence, in terms of adaptability and flexibility the goals for curriculum, assessment and teachers’ work includes identifying the kinds of knowledge that is required and the experiences for students to develop this knowledge, find the means for furnishing experiences that develop this knowledge and make judgements about students’ attainment of that knowledge. The discussion in the three
sections above has focussed on these activities. Taken under these three headings, the means by which the current VET arrangements are meeting these needs are discussed next. This is followed by deliberations about CBT’s role in these activities. The reason this approach has been adopted is as follows. Developing flexibility and adaptability (the clever country, skillfulness) has been key task given to vocational education. As noted it has benefits for individuals, enterprises and industry. CBT was introduced to realise a more flexible and adaptable workforce. Consequently by commencing with this overall policy goals it not only provides a basis to discuss the contribution of CBT but also advance views about what adjustments are required in curriculum development, assessment procedures and teacher’ practice.

In sum, the statements below comprise deductions from the data.

**Identifying the knowledge required and experiences for students to develop this knowledge**

The data analyses suggest that:

(i) Determination of intents and content involving industry/enterprises assists making the goals for and content of courses relevant. This identification of knowledge used in work places and in what combinations that knowledge is deployed (e.g. what arrays of skills comprises a tradeworker, and how this manifested in different enterprises).

(ii) Currency of teachers’ knowledge of the requirements for the workplace assists develop transferable knowledge through a fostering of the requirements for applications other than those in the college settings. Through understanding the range of circumstances where knowledge is applied provides a basis for assisting students’ development of variations in the use of vocational knowledge (e.g. different kinds of service required in different kinds of hospitality enterprises).

(iii) Experience in the workplace is important for developing knowledge applicable to workplace settings. Developing understanding and procedures are associated with workplace performance. In particular, the development of routine skills is unlikely to secured through colleges where the activities tend to be non-routine experiences. The importance of integrated programs or part-time work is in proceduralising and developing associations within understanding.

(iv) Instructional approaches which in combination provides access to problem-solving, the reinforcement of knowledge, working with others yet access to knowledge which learners will not discover themselves (e.g. group learning, self-directed learning, teacher guided activities) are required to develop the forms of knowledge required for adaptability and flexibility.

(v) Project work, self-directed learning and combinations of on and off job experiences most likely to develop these forms of knowledge which permit transfer, hence adaptability and flexibility.

**Providing appropriate experiences that develop this knowledge**

The analyses of the data suggests that:

(i) Teachers’ involvement in organising appropriate kinds of experiences is essential in order to determine how best these experiences should be organised for a given group or individual.

(ii) Currency of knowledge about the kinds of target settings are required to develop appropriate experiences for students.

(iii) Direct engagement with students in order to understanding their needs and organise experiences and guidance appropriate to their level of development. That is, providing guidance to maximise their learning through working within their Zone of Proximal Development – the extent that they will be able to develop with close guidance of a more expert other.
(iv) Broad role for the teacher to identify and determine needs at the situational level and respond to those needs.

(v) Valuing a strong student focus in organising appropriate experiences, tailoring arrangements to the needs of learner, providing support and guidance underpinned by currency of knowledge

*Making judgements about students’ attainment of the knowledge required for flexibility and adaptability*

The data analyses suggest that:

(i) The need for performance measures to reflected the complexity, depth, routineness and non-routineness of the vocational activities being assessed.

(ii) Need to assess ability to engage in non-routine activities, more than just routine activities.

(iii) Assessment accounting for situational factors, with validity found in application. For instance, on the job assessment likely to be useful to indicate validity in terms of authenticity.

(iv) Dispositional factors (values, attitudes) need to be assessed as these qualities underpin the likelihood of outcomes.

(v) Multiple learning outcomes need to be assessed as this reflects requirements for work practice (e.g. project work as the basis for assessment)

These are summary statements about the development of adaptability and flexibility drawn from the data analyses and presented in ways consistent with the orientations outlined in Chapter 2. In order to understand CBT’s role in the development of adaptability and flexibility, in the next section, relationships between what has been advanced and CBT is discussed first. Then relationships between the findings above and the broader CBT movement are discussed, and after that, practice that is separate from these two considerations.

**CBT and the development of flexibility and adaptability**

It is proposed in Chapter 2, that the core of CBT comprises competency standards, prescriptive syllabi, modularised materials, assessment against competency standards and procedures which aligned competency standards with curriculum documents and certification of courses. This has been the case up until the implementation of Training Packages arrangements which marginalise curriculum documents as a mandated aspects of CBT. The character and scope of this view is drawn from what government proposed at the time of the implementation of CBT.

As foreshadowed above and in chapters earlier, there is little evidence of linkages between CBT itself, as defined by its sponsors, and the development of a skillful and adaptable workforce. Most of the factors identified in the previous section refer to factors associated with the broader movement for reform of vocational education and those which were existed prior to CBT and remain unaffected by it.

**CBT’s contribution**

What can be stated from the above is that the development on national industry standards shifted the focus of determining intent and content from within the vocational education system to more directly seek external sources. This process may have helped commence a process that sought greater relevance and currency in content and intents. A consideration for a broader set of sources has been instutionalised and formalised in a way that may not have existed before. Although other qualities may have been lost in the formation of the ‘intended curriculum’ and these include local input and the insights of educators. Other contributions include the press brought about by the
accreditation and registration processes for courses to be implemented in accordance with external
demands and the arrangements which attempted to maintain teachers’ industry currency. Of
course it more complicated than these quick generalisations permit, but it would wrong to assume
that all teachers’ practices were wholly motivated by student concerns and these measures may
have in some ways provided a basis for enhancing the relevance of courses and clearer
understandings of goals for learning which assist transfer. Also, in an unrelated form (but one
sometimes associated with flexibility) students enjoyed access to national uniform certification
which may assist portability and advancement.

Conceptually, the key antagonism, between CBT and its development of adaptability and
flexibility is its focus on outcomes, rather then process. This antagonism manifests itself in
different ways. These are as follows: (i) the orientation of the standards being wholly based upon
performance that was supposed to be measurable, distanced them from the very processes of
thinking and acting which make these performances possible and which can most sensibly inform
about future performance; (ii) the development of detailed national standards made the intents of
education remote from the circumstances in which performance was to be judged, that is it denied
the different requirements of performance wrought by situational factors; (iii) the development of
these standards was disengaged from the individuals who would have to teach and assess against
those standards; (iv) the means by which these standards were imposed upon the training system
and their clients was associated with mandation rather than processes consistent with developing
individuals’ commitment to them; (v) the importance of approaches to instruction likely to secure
skillfulness were down played and (vi) the validity of mandated assessment processes is
jeopardized by their failure to assess the qualities associated with adaptability and flexibility.

Put simply, the orientation to developing the intents for education denied the thinking and acting
which determined performance, the national focus and the means of implementation also
profoundly misrepresented the complexity of vocational knowledge, its situatedness, the teaching
and assessment of that knowledge and the basis by which individuals commit themselves to their
practice.

So in sum, there is little evidence either in the data gathered and analysed for this study or the
broader body of knowledge that CBT itself has contributed much to the development of flexibility
and adaptability. More likely some of the components of the broader CBT or reform movement
may have far more than CBT itself as is discussed in the next section. However, beyond that in the
following section, the clearest evidence suggests that the governmental goals of adaptability and
flexibility were most likely to be secured by teaching practices, experiences and arrangements that
had little to do with CBT, and in some cases were in spite of it.

What is unclear, however, are other effects such as enterprise participation because they felt the
industry focus was strong.

The broader reform movement and the development of flexibility and adaptability

The broader reform movement refers to a raft of associated procedures aimed at securing the
reform of and responsiveness from the nation’s vocational education system. The parameters of
this movement constantly changed through the decade of CBT. For instance, at it inception CBT
was only to be applied to trade courses (Watson 1991), later encompassing all courses in TAFE,
then the broader field of VET and, in particular, more recently the shift towards an enterprise
focus. Associated with this movement from its inception was a relationship between self-pacing
and CBT. Also, the move to a training market has seen a shift in provisions that seek to address
more directly the needs of local circumstances, individuals and enterprises (Billett & Hayes 1998).

Contribution of the reform process

Whereas industry accreditation pressed for currency of skills, the shift to interactions with
enterprises is now reported to have led to a greater understanding of the goals for learning and the
needs of these enterprises. These understandings are important to assist the development of
knowledge that is applicable in at least one target circumstance. For instance, what the much
prized multi-skilling means can only be determined at the local level through an understanding of the range of activities being enacted in a particular workplace. So it seems, that this identification of enterprise needs being addressed through interactions brought about, at least in part, by market reforms.

Associated to this, is the reported enhanced relevance of programs through the provision of authentic experiences through workplace activities that have increased as opportunities to participate in programs which integrate workplace and classroom experiences have increased. And, it should be noted that workplace training and assessment has been promoted by VET policy for some years now. These experiences assist providing access to the goals for vocational practice and opportunities to engage in activities likely to secure this knowledge. As noted above, one attribute of workplaces is the opportunity to engage in problem-solving in authentic environments, to draw upon the contributions of those environments in the development of applicable and richly-linked knowledge. Also, workplaces provide combinations of routine and non-routine experiences. It is these experience, in combination, that are so important in the development of robust knowledge through a process of construction and reinforcement. Typically, classroom experiences are more likely to provide non-routine experiences that may not furnish opportunities to proceduralise and richly interlink knowledge.

Yet, the broader reform or CBT movement did bring about changes in experiences that students engaged in the classroom. These included including self-paced learning and text based learning arrangements that may have pressed learners into the kinds of thinking and acting most likely to develop the knowledge required for adaptability and flexibility. This approach did not suit all learners. However, those who were ‘ready’ enough to engage suggested enjoying the benefits this approach to learning provided. Equally, there were many references to individualised learning that were aimed to meet individuals’ needs. Overall, some of the outcomes of the broader reform movement appear to focus on students in ways that furnish and support opportunities for them to develop the knowledge required for flexibility and adaptability.

Lately, it seems there has been a broadening of teachers’ role to accommodate some of the demands of the market-based arrangements and to address enterprise needs. This broadened role may offer the prospect of enhanced discretion in understanding needs, determining intents and content for courses and providing the kinds of experiences that students need to learn the knowledge for the workplace. However, such optimism must be countered by concerns about reductions in funding which are reported to have curtailed these experiences and teachers availability and the required duration of programs.

On another focus, by enhancing the prospects for enterprise needs to be met, there it could be expected that greater participation will result and a broader and increased participation in VET will result by enterprises. However, unfortunately, there is little evidence to suggest that these provisions have enhanced either the quantum or quality of enterprise participation in VET.

So more than through CBT itself, the broader reform movement has resulted in changes that, it is suggested, have assisted the development of adaptability and flexibility. Yet, beyond these changes, much of the existing practices within VET are likely to have secured the kinds of outcomes required for flexibility and adaptability as discussed in the next section.

Factors other than those associated with the development of CBT
In overview, a range of experiences, activities and support, many provided by teachers and which comprises existing instructional and curriculum practice are likely to be instrumental in the development of flexibility and adaptability. CBT and the broader reform movement have overlooked many of these contributions. However, as the findings in this project have shown 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.
Firstly, teachers work in addressing learners’ needs and tailoring curriculum experiences and direct instruction to particular groups of learners’ needs is an enduring quality of teachers’ work. This work appears to make a difference. For instance, in the data reporting concerns about self-paced and resource-based approaches were references to mediation by teachers of these experiences to make them accessible and possible to be engaged by students. So while these approaches to instruction press students into independent, yet guided learning, for those not ready, or for whom the transfer task is too difficult, the teacher can play an important mediating role.

The full potency of integrated learning experiences can be realised by teachers making links and building on the contributions which both sets of experiences provide. In this study, particularly in the responses from Hospitality students, the teachers’ knowledge of the workplace environments was held to be useful in integrated these experiences. It is finding means to develop understanding about the different kinds of knowledge application that is likely to be important for the development of transferable knowledge.

Group work experiences provided in VET institutions were also held to be useful in engaging students in simulate activities of the kind they would encounter in the workplace. Again, in the Hospitality sector the practical group work (e.g. kitchen and restaurant work) furnished these opportunities and assisted developing attributes of performance that are claimed to be most important in the contemporary workplace (e.g. Key competencies). Significantly, it was claimed that reductions in funding have inhibited the frequency of these kinds of experiences.

Teacher guided experiences in the classroom remain an important basis for learning with students engaged in activities that construct their knowledge guided by a more expert other (teacher). Knowledge is socially sourced and constructed and the close guidance of the teachers remains an important contribution to knowledge building as exemplified in the data within this project. A concern from students was that access to teachers was not as high as they needed. In the quantitative data, it has been shown that the perceived level of support were lower in TAFE environment than in other environments such as schools.

The expertise of teachers, their skills in furnishing experiences and knowledge of their vocational domain were held to be important in providing the kind of guidance and experiences that are likely to assist students develop understanding and skills that are transferable.

Instructional practice such as project work, self-paced learning, problem-solving tasks, practical activities are also held to secure the kinds of outcomes that are associated with learners engaging knowledge and constructing it and which is likely to provide a strong basis for transfer.

These activities were commonly practiced in vocational education prior to the national uniform implementation of CBT. Some of these activities have been intensified by the broader reform movement. Yet, it is upon the kinds of foundations of involving teachers in determining the intents and content for courses (in conjunction with others), the ability for appropriate experiences and guidance to be provided for learners that reside the best opportunity for developing flexibility and adaptability. Considerations of process concerns for identifying and developing the kinds of knowledge required for vocational performance need to be central to curriculum development and instruction and the focus of assessment practices. It is these considerations rather than pre-specified outcomes, a lack of emphasis on the learning process and behavioural objectives as a basis for assessment that is required if vocational education is to secure the outcomes successive governments have demanded of it.

However, in advocating these views it is important to acknowledge that not all teachers’ have either the ability or interest in providing the kinds of experiences discussed above. The de-emphasis of professional preparation and practice and the reduction of the role of teachers is likely to inhibit the prospect of the requirements outlined above being realised. However, the quality of
experience and guidance in VET sets the clearest goals for the development of adaptability and flexibility in those who participate in VET.

Taking this theme and those advanced above, the next and final section sets out some alternative approaches for the management and organisation of VET which draw on the analysis and synthesis advanced in this chapter.

7.4 Recommendations/proposals
Recommendations for the future are found under three headings associated with the separate areas of inquiry.

Curriculum
The recommendations advanced for curriculum are those proposed in the form of revised considerations for accreditation and registration procedures. These revisions focus on what should be included in the form of considerations of the ‘intended’, ‘enacted’ and ‘experienced’ curriculum for programs within VET. In overview, it is proposed that the kinds of educational intents used in vocational education need to be changed as should the means by which they are determined. In terms of the enacted curriculum, it is held that the focus should be on the quality of experiences provided for the learners.

*Intended curriculum: the kinds and quality of intents and content*

The use of behavioral objectives has been a long tradition in vocational education that predates the current emphasis on CBT. However, there are objectives that relate to process and considerations of values as well as those of the behavioral types. Given what has been advanced above, it seems that the sole use of behavioral objectives presents inadequate vocational education goals. It seems that combinations of process and outcome focussed objectives need to be considered. Where matters of performance are routine and observable, then behavioral objectives may suffice. However, when dealing with non-observable phenomena such as procedures and understanding different kinds of outcomes need to be sought more than those that claim to be highly measurable. As has long been recognised (e.g. Hogben 1970), behavioral objectives are useful for the observable and superficial they are not useful for more complex forms of thinking and acting. For example, process objectives could be used to emphasis the centrality of learning activities in developing the knowledge required for adaptability and transfer. So the choice of educational intents needs to shift from being solely behavioral to those which can account for the complexity of the knowledge which is the goal for vocational education programs.

More negotiation is required at the local level, in the identification of these objectives. One suggestion has been made that to achieve both goals of national consistency yet meet local needs that Industry might propose the aims and goals whereas the negotiation of detailed statements of intent (objectives) can be made at the local level. Hence, national goals of uniformity can advanced as well as those about addressing the needs of local students, enterprises and communities (see Billett & Hayes 1998). Therefore, the degree of specificity of educational intents and content which are developed in circumstances remote from those in which the programs are to be enacted.

Hence, while there is a need to continue to focus on sourcing curriculum intents from external sources (e.g. enterprises and industry), those from individuals as well as teacher input is likely to be useful in providing appropriate experiences. Teachers need to have role in development of the curriculum as well as the implementation of programs in order for deliberations to be informed by professional practice.

*Enacted curriculum: the quality of experiences for learners.*

Modification to accreditation and registration processes could be useful in pressing for a consideration of process factors and, in particular, the kinds of experiences that in combination have been identified in this study as being associated with developing adaptability and
skillfulness. That is, the accreditation processes could specify the kinds of experiences required for engaging learners in the thinking and acting which are likely to lead to outcomes associated with performance. These might include engagement in 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. If accreditation and registration arrangements have to mandate anything it should be these kinds of requirements. Moreover, accreditation and registration processes should specify how learners’ readiness to engage in self-directed activities can be appraised and monitored and the guidance required for those who are not ready for autonomous problem-solving.

Experienced curriculum: engaging the learners.
Accreditation and registration procedures might also like to focus on how engagement in activities and appropriate levels of support can be understood. In addition, some heightened emphasis on making links between classroom and workplace should occur.

Teachers’ practice
The key recommendations advanced for teachers’ practice are about providing the bases for teachers to deliver to students the kinds of opportunities, experiences and guidance that will permit them to best secure the outcomes associated with adaptability and flexibility. These ideas are classified under broadening the role of teachers, deepening the role and developing teachers’ practice.

Broadening the role
Teachers’ roles necessarily have to extend beyond that of being implementers which has characterised much of their intended role in the decade of CBT. Instead they need to be engaged as adapters, developers and researchers. Teachers need to have more discretion of the enacted curriculum in order to determine the array of routine and non-routine experiences, the best integration of experiences as well as combinations of independent, group and teacher-led experiences. Through this broader involvement will they be best able to determine needs, respond to those needs and provide experiences and guidance likely to develop in learners the kinds of knowledge required for adaptability and flexibility.

Deepening the role
The valuing of pedagogic expertise, that is an emphasis of instruction and learning needs to be acknowledged hand-in-hand with vocational knowledge. The development of the forms of knowledge that have been discussed above are not straight forward. Teachers have to possess the appropriate expertise to furnish these experiences and evaluate their impact, refine and improve. For instance, teachers as guides for the construction of learners’ knowledge is favoured in contemporary views rather than deploying didactic instructional strategies. The former requires different kinds of expertise than the latter. Moreover, as learners in VET are participating in a wide range of environments it is necessary for teachers to have an understanding about the applications of combinations of experiences in those environments to secure the stated goals. So a greater emphasis on pedagogic principles and practice needs to be engendered within VET teachers.

Developing teachers’ knowledge
The broader and deeper role suggested above requires that the professional practice side of teachers’ work are given due attention. In particular, this means that professional preparation for vocational educators should be both thorough and comprehensive. Moreover, that professional develop, maintaining currency and extending knowledge should emphasise pedagogic as much as vocational aspects of practice.
Assessment practice
If assessment in vocational education is to be both valid and reliable, changes are required to secure these important attributes. Hence, the recommendations on assessment are classified in terms of validity and reliability.

Validity
For assessment to be valid the bases for assessment (e.g. objectives) need to consider the forms of knowledge which are to be assessed, circumstances in which performance actually occurs, the need to assess understanding as well as practice and dispositional attributes which are important for practice. Matters of complexity, authenticity, and integration need to be considered. In short, validity needs to be considered in the benchmarks upon which judgements about students ability to flexible and adaptable in their vocational domain can be made. Hence, it is recommended that benchmarks of kinds other than behavioral objectives be considered and that there be more negotiation about the basis of the detail of those benchmarks in circumstances where an understanding of the situational factors can also be included.

Reliability
Measures to assist reliability was largely overlooked in the decade of CBT, apart from the use of standards and outcome statements. Now with the greater diversity of applications measures for reliability need to be considered to maintain the standing of judgements about student performance and the standing of certification with vocational education. So 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.

Incentive
As discussed in Chapter 5 and above, the issue of incentive is at the core of individuals’ learning. Non-graded passes may remove a key source of incentive for learners. The kinds of knowledge that individuals will need to learn to be flexible and adaptable are of the kind that 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. Hence, it is proposed that some form of graded assessment which recognises the skills required to be adaptable and flexible be re-introduced to provide important incentives for learners.

7.5 Concluding comments