Chapter Four

CBT as a model of curriculum development

Stephen Billett

Abstract

Subproject #4 focused on the effects of CBT on curriculum. In all, seven major findings arose out of the empirical data collected. First, it was found that many respondents had some general difficulty in separating the influence of CBT from other influences. Some components of current curriculum practice are closely identifiable with CBT and provide a basis to make judgements about its worth. Other components are part of the 'CBT movement' and are associated with implementation and concerns about containment of costs and flexibility of access (e.g. self-paced activities, individualised learning arrangements). So in reaching conclusions about the impact and efficacy of CBT it is necessary to consider those factors most central to CBT, those associated with it and those that are not part of the 'CBT movement'.

Secondly, the two states studied had different bases for the uniform introduction of CBT. At that time different antecedent conditions existed between states and sectors. For example, an instructional system that is analogous to CBT was reported as being in use in the trade areas in Victoria since the early 1980s, while in Queensland, respondents reported little knowledge of CBT prior to its implementation in that state. Consequently, the transformations brought about by CBT for the two states and the two sectors were different. Overall, however, comparisons between teachers' activities prior to and after the implementation of CBT suggest that many teacher activities have not been changed by CBT.

Thirdly, it was found that changes to curriculum intents and content, and the introduction of the VET market, have fostered closer relationships between providers and enterprises. However, the findings on the quality of negotiations suggest they are rather one-sided, with a principal focus on the needs of enterprises.

Fourthly, the data suggest that greater uniformity has not been achieved through CBT. Beyond interpretative concerns, which refer to usage of materials and their interpretations, it was found that because industry standards vary from situation to situation, the prospect for uniformity is illusory. Moreover, there is no effort being made to determine uniformity of assessment through, for example, moderation processes, which are usually regarded as a means to secure reliability in assessment. Indeed, it is claimed that the level of contacts between vocational institutions has declined. Competition has encouraged this isolation. However, greater uniformity seems to have been achieved in assessment across both industries and both states.

Fifthly, these findings suggest that current vocational arrangements meet some enterprise needs in terms of the skills they require. Knowing about, and being able to meet enterprises' needs, as well as and those of individuals, is one of the most significant reasons why CBT is to be valued. But it is uncertain whether this satisfaction stems from CBT itself or associated initiatives.

Sixthly, there is evidence of CBT improving competitiveness, but mostly for enterprises, rather than individuals or industries as a whole. The curriculum processes that aided competitiveness have been categorised as work-based learning and improved access to training. It is also proposed that the market-based provisions have been useful in enhancing

competitiveness and that evidence of the efficacy of these arrangements is founded in enterprises continuing to employ apprentices and send them to the providers.

Finally, there is conflicting evidence concerning the ability of CBT to develop higher order outcomes and transfer through current curriculum practice. In terms of the development of higher order outcomes, the clearest pattern of evidence suggests that a series of instructional activities and unintended processes and factors engage students in problem-solving activities that are likely to secure the knowledge for adaptability. However, a smaller body of evidence suggests that there are limited positive outcomes. 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. However, the question remaining to be addressed further is the degree that these are the direct product of CBT or are they the product of other, associated processes. The potential for the CBT curriculum to deliver transfer is also evident. However, again, much of the basis of that transfer is not directly linked to CBT, but activities and experiences as the curriculum is enacted by teachers and experienced by students. Statements of evidence contesting transfer relate to the quality of training and the relevance of what has been learnt during the program.

4.1. Introduction

The government policy of achieving a nationally uniform provision of vocational education, able to secure a skilful and adaptable workforce, was to be realised through the implementation of a competency-based training system. As discussed in Chapter 2, it was intended that this initiative would have far-reaching implications for vocational education. These included how curriculum was to be enacted and what outcomes were to be valued. Drawing on discussions about the intended role of CBT as a means for reforming the vocational education system, this chapter analyses and makes deductions from that section of the data referring to the implications for curriculum. Data referring to the educational worth of CBT is also analysed and discussed from a curriculum perspective. This is done by identifying the outcomes of the implementation of CBT and how these outcomes meet the needs of industry, enterprises and those individuals who participate in vocational education. In doing so, principal concerns of Subproject #4, and its research question are addressed:

> *In what ways has the CBT as a 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)

This question directly contributes to the overall goal of the investigation, by identifying: (i) the consequences of the introduction of CBT for two industry sectors; (ii) CBT's impact on curriculum practice; and (iii) how CBT meets the needs of enterprises, industry and those involved in learning through vocational education. In doing so, this curriculum initiative and the associated procedures of the 'CBT movement' are assumed as being developed and implemented with particular intentions, as outlined in Chapter 2. These intentions necessarily

form the basis of its appraisal. Consequently, this chapter addresses issues associated with the impact of the implementation of CBT as a model of curriculum and the educational worth of this curriculum model. In short, the focus of this subproject is on:

(i)   to what degree has the introduction of CBT influenced curriculum practice and

(ii)   what evidence is there of the educational worth of CBT.

4.2   Appraising CBT as a model of curriculum

To appraise CBT as a model of curriculum, it is worthwhile briefly revisiting what comprises this model of curriculum. As proposed in Chapter 2, the CBT model of curriculum as it has been advanced in the decade of CBT, is 'technicist' (externally prescribed and behavioural in format) in orientation (Blachford 1986), and top-down in its implementation (Billett 1995). As depicted in Table4.1, in keeping with a technicist approach it is responsive to powerful external interests (government, industry), its goals are behavioural, its key focus is on objectives provided by others (government, industry), is psychological behaviourist, and its assessment requires congruence with objectives (Blachford 1986).

In order to appraise this model of curriculum there is a need to go beyond what is intended or planned (e.g. *the intended curriculum* - syllabus, goals for learning and outcomes, regulatory mechanisms). In addition, what happens when the curriculum is implemented (*the enacted curriculum*) by teachers and trainers and also what learners experienced as a result of its implementation (*the experienced curriculum*), needs to be considered. The differences between these views of curriculum are significant for this project as they articulate concerns outlined in the research question. That is, they refer to the concerns of government and their industry partners (intents), the concerns of those who have to implement and enact the curriculum (teachers and trainers) and the experiences which led to outcomes desired by those who participated in the programs and their sponsors. Upon the quality of these outcomes, judgements can be made about the efficacy of this model of curriculum.

In more detail, the *intended curriculum* is exactly that, what is intended by its sponsors and should happen as a result of the curriculum being implemented. These intentions are the goals set by policy, the aims for courses as well as detailed statements of intents (objectives) which are usually presented in the form of a syllabus and associated resource materials. Moreover, a number of regulatory measures were developed to maximise fidelity with the uniform implementation of a CBT curriculum. The intended curriculum also includes what teachers plan to do. The School-based curriculum development model (e.g. Skilbeck 1985) affords such discretion to teachers. Certainly, from the data here it seems that Hospitality teachers

were engaged in a college-based approach to curriculum development prior to the introduction of CBT. Indeed, many of the initial changes referred to below are about gaining control of the 'intended curriculum'; its aims, goals, objectives and content. It seems that there was transformation for both sectors with the control of the intended curriculum to be taken from teachers and TAFE systems and given to the industry advisory bodies in order to secure greater responsiveness to industry needs.

The *enacted curriculum* is what is actually implemented. This is determined by the resources available, the expertise of the teachers and trainers, their interpretation of what was intended, their values, and the range of situational factors such as student readiness that determine the experiences that students enjoy. The enacted curriculum also includes part of what is referred to as the 'hidden curriculum' - that which was not directly intended by teachers but happens nonetheless. For instance, the uncommitted trainer is likely to convey that lack of commitment to students. It is important to understand the 'enacted curriculum', as changes are likely to occur in what was intended during implementation. This is more likely to be the case when the intents are developed remote from, and without interaction with, those who will enact the curriculum (Billett 1995). In particular, this understanding will be useful in appraising the degree to which CBT influenced the practice of teachers. Certainly, there were attempts to control the enacted curriculum, with the development of resources and procedures that aimed to ensure that the intents were enacted with fidelity, particularly through standardised learning materials. However, even the most strenuous attempts at uniformity and fidelity in implementation are unlikely to be successful (Billett 1995, Print 1995). In translating what was intended into experiences for learners, the available resources, teacher beliefs and expertise, as well as student characteristics, are just some of the factors which will determine the degree to which what was intended could be, or is likely to be, implemented. Indeed this is evident in the data on uniformity reported below.

The *experienced curriculum* is what students experience. This, for some, is the only reasonable definition of curriculum, particularly with the broader acceptance of constructivist views. For instance, what was intended as a democratic group learning experience, might be implemented in a way that allows domination over the learner. The students' experience might reflect the manifestation of power in a group situation and the frustration of those whose ideas were marginalised. Consider the differences in learning experiences enjoyed by pre-vocational learners versus apprentices. Not only is what is enacted different, but the experiences will be constructed quite differently by each learner. Take also self-paced and independent learning opportunities, which may meet the needs of some, but not all learners. For some students, such experiences provide an opportunity to excel, but for others who are

less ready, these demands go beyond what they can achieve without assistance. Hence, outcomes of learning are likely to be a product of the curriculum each student experiences.

Together, these three dimensions of curriculum provide a basis for appraising CBT as a model of curriculum -- that is, what was intended, what happened when it was enacted, what sense students make of it, and hence what they learnt.

4.3.   Data Analysis – CBT as a model of curriculum

In keeping with what has been proposed above, the presentation, analysis of and deductions from the data in this chapter are organised under three bases for analysis. These are the degree to which the introduction of CBT has influenced curriculum practice, evidence of the educational worth of CBT and views about alternate options. These data are presented to response to three questions.

(i) *To what degree has the introduction of CBT influenced curriculum practice?*
This question is addressed with by reference to the data about antecedent conditions and procedures of implementation, also some referring to outcomes.

(ii) *What evidence is there of the educational worth of CBT?*
This question is addresses the educational worth of CBT with reference to data about processes, outcomes and futures.

(iii) *What alternative approaches should be considered?*
This question seeks to address how curriculum provisions for vocational education should best proceed to achieve goals associated with delivering to industry, enterprises and those who participate in vocational education the outcomes they desire.

4.4.   How the introduction of CBT influenced curriculum practice

Part One: Antecedents

4.4.1   Teachers' prior knowledge of CBT

In order to understand teachers' knowledge of CBT as an antecedent condition to its national implementation, they were asked, "What did you know of competency-based training before its national implementation" (AC4). The responses are presented in Table 4.2 (Appendix 1).

The responses from teachers suggest that many of them knew nothing or very little of CBT prior to its implementation in 1990. However, it is more likely that a response about little or no prior knowledge of CBT would be from Queensland than Victoria. Moreover, in terms of

knowledge of 'aims' and 'processes', the pattern indicated that those most knowledgeable would be from Victoria and in the Metals sector. The difference between states and sectors is most apparent in "knowledge of processes", whereas it was Metals teachers from Victoria who claimed not only knowledge about its processes, but were also able to offer criticisms of its implementation.

These findings are hardly surprising considering the early involvement of the Metals industry in the initial introduction of a national uniform approach to CBT reported in Chapter 2. Moreover, it is reported that Victoria had a modularised CBT-based curriculum in the trade areas in the early 1980s (Mealyea 1985). In addition, the national focus on CBT expertise centred on Melbourne (e.g. Richmond). Presumably, this is why a number of Victorian respondents reported that they 'thought they were already doing it'.

Beyond responses claiming a lack of knowledge, were those indicating knowledge about the intentions of CBT ('knowledge of aims'), rather than matters associated with its successful implementation. As some Queensland respondents noted, "the guides provided were not clear, people presenting did not seem too clear about it. Materials were not in CBT format (409): "we were simply told of the new syllabus and told to make it work" (430). "We knew very little, (but) later realised had been doing many aspects of CBT "(431). In recalling this situation, a Queensland Metals teacher stated there was "No consultation, no funding for resources, no planning to implement CBT and no input to its implementation" (434).

However, this confusion was not only noticeable in Queensland. A Metals teacher from Victoria stated "I think that a lot of us floundered with it at that initial stage. My perception at the time was that competency based, was that somebody actually attains to that particular skill until they find competency. And the competencies were clearly stated then. And probably too clearly stated; 'you will' and those sorts of terms, where there was some problems in the early stages of making statements like that, where, for arguments sake 'you will remove a universal joint and replace it and it will effectively run'. That's an easy statement, but how do you implement the damn thing" (901). The reliance on external sources in the Metals sector was also evident in Victoria. "A lot of it came through Richmond TAFE in those days, an enormous amount came through Richmond. Mainly because they were the better at it, it was because they had in those day the most resources, in terms of staffing and so on. Once the curriculum was developed, individual colleges developed the resources and that was done on a relatively good collective basis in those days, which was unusual. You don't see that happening now, everybody is doing it as a separate entity" (901).

4.4.2   Teachers' prior knowledge, in sum

In sum, the important finding here is that these data indicate difference in the antecedent conditions in the two industries and between the two states at the time of the national implementation of CBT. The reasons this finding is important are at least fourfold. Firstly, quite different bases of knowledge existed prior to its implementation. These differences encompassed ignorance of those who had had experience with implementing a similar system. Hence, the assumption about achieving uniform goals was premised on quite different bases in both states and industry sectors. Secondly, the 'top-down' means of organising curriculum was perhaps more familiar in the Metals sector than in Hospitality. Hence, the changes required across the sectors are likely to differ, with those transformations in the Hospitality sector being most profound. Thirdly, most of the initial trials and professional development support and materials were directed at the Metals sectors and its teachers, whose needs may have been quite different than those in other sectors. Fourthly, assumptions that uniformity of provisions could be realised by edict seem quite naïve given the differences in teachers' readiness for this initiative evident in the data. These concerns can be considered in terms of differences between the 'intended' and 'enacted' curriculum. If the process of implementation was machine like, devoid of questioning and interpretation or need for information then fidelity of intents would be realised. However, the difference bases of knowledge and values suggest that relationships between the 'intended' and 'enacted' are interpretative and likely to require negotiation.

4.4.3   Curriculum decision-making and structures

Metals in Queensland

Prior to the national implementation of CBT, much of the curriculum decision-making for the Metals industry in Queensland was embedded centrally in the state's training system, with "centrally-designed curriculum (being) handed down for teachers to follow"(431). Teachers' practice seemed accustomed to this arrangement as "it was common practice for teachers to rely on external notes from the Technical Correspondence School"(431). The teachers were therefore cast as implementers of decisions made elsewhere. "I had some involvement in the curriculum, but mostly my role was in the delivery of training" (418). The role that centralised prescriptions played in organising instruction within this sector extended to centrally organised assessment procedures. "Exams were also set centrally, so teachers used to go through past papers to know what to teach. Questions did not change dramatically over the years so it was possible to use the past exam papers to work out what to emphasise" (419). Consistent with the centralised approach to curriculum provisions, uniformity of provision and outcomes were desirable goals. However, the basis for uniformity was a product of decision-making within the training system, rather than from without. "As the content was

fixed by curriculum (department), all students did the same subject. Therefore, industry input did not change this process"(406).

However, the internal focus on decision-making was not always receptive to the demands of external sources. "Sometimes (there were) tensions between what teachers had been asked to teach and needs of local enterprises (419). Moreover, local industry representatives felt that their views were not heeded in a highly centralised and provider-driven approach to curriculum. Concern about this centralised approach was expressed by an employer who stated that, "That curriculum committee made some recommendations that were not taken into account when the process as finished. I remember feeling at the time that it was a waste of time".

The comments from other respondents support the view above about a centralised provision, based within the TAFE system. The curriculum officer at that time stated, "I wrote curriculum documents within state office …. Co-ordinated different curriculum development committees around the state" (422) and another industry representative noted their role in the "development of national core curriculum"(412). There was some evidence of course development being undertaken in the Metals sector outside of the system. However, these were in workplace-based non-trade courses (424).

There was, however, industry input through the TAFE system. "Industry had a lot of input back then ... any curriculum that were developed, were developed in association with industry by arranging representation"(418). However, "TAFE owned the curriculum because they were the responsible agency and none of the curriculum I have been associated with was ever released without industry involvement and approval"(418). Other less formal interactions were reported by enterprise respondents such as consultancies with industry, industry based students, part-time teachers from industry, and teachers working part-time in industry. "(H)owever, it was still pretty much provider driven"(422). These views are supported by teachers' claming that much of the contact was informal, based on teachers' conscientiousness (430). So it seems that, prior to the broad-based implementation of CBT, the Metals provision in Queensland was guided by an education system-based provision.

Hospitality in Queensland

In contrast, the Hospitality teachers' roles, their autonomy and the curriculum development processes represent a view of curriculum development best characterised as a college-based. However, their work was guided by some national documents (red book, black book, green book). Teachers stated that, "I developed programs"(411), "Little was developed in

Hospitality (432)","TAFE started going out and soliciting people like myself who had worked in different systems to put together new training programs" (432). Perhaps capturing the difference between sectors, one respondent stated that "Hospitality in Australia never had the tradition behind it as it does in Europe, so there was very little industry input at that stage. Moreover, "Hospitality wasn't seen as a real industry as it was in Europe" (412). In comparison to the Metals, input by teachers was permitted and valued "developed and delivered some training programs for a large hotel in Rocky" (411),"I was responsible for the design of curriculum"

At this time, it seems Hospitality teachers' practice was not welded to their syllabuses. It was stated that "teachers were given the subject topics and were allowed to develop their own lessons. Syllabuses were not very structured and teachers could follow their biases (e.g. one teacher spent 80% of a commodities subject just on eggs) (432). "Training providers dominated training" it was the providers that determined what was available to industry (412). "There was virtually no input from industry at this stage. Our curriculum was much vaguer and we had sole control over its contents"(411). However, others suggest that it was influenced to a certain degree by industry because of the consultative processes within industry, but it was more a matter of "we produce the syllabus for Queensland, here we are industry what do you think of that? …They endorsed the syllabus but didn't have that much input into it" (425). Others concurred that "Curriculum (was) TAFE driven, although the perception was given that industry had a large part to play.

Hospitality in Victoria
Teachers in the Hospitality sector in Victoria also played a key role in the development of syllabus – the intended curriculum. "We were in groups of subject specialists and that was from all TAFE colleges and we sat down together and thrashed out some ideas and there was a spokesperson for each table and we mapped it out that way" (904). The officer who had responsibility for Hospitality studies confirmed this view. "My role in curriculum was first of all to document the material and obviously you had to have subject expertise there so the teachers would be involved in inputting data and determining appropriate assessment methods etc. But they would be a selective few and my role then, having got the material up and accredited, was to then provide professional development in the system to teachers on the floor to implement it" (901). At this time, industry influence upon curriculum decision-making was through a number of formal and informal avenues. There was a formal industry advisory process, although its membership and influence were subject to views from within TAFE. "Well it (advice) was usually through an industry advisory group, and depending on how well selected … it may or may not influence what was in the curriculum"(900). These

groups were "usually [organised by] the Head of Department or Assistant Director who knew people in the industry and just nominated them. It was a network system" (900). There was also representation on college councils, "pre-CBT, (there were) fewer providers, therefore closer ties to college councils. William Angliss was the only provider up to 1983. Industry dealt with only one provider. Industry had representation on council. In 1980, Cooks committee (was) developed" (918).

So these formal mechanisms were the means by which industry could influence curriculum decision-making. However, the focus of and organisation of these forums were under the auspices and control of TAFE. Teachers' informal contacts also played a role in reflecting industry needs in the curriculum development. "TAFE teachers in the Hospitality/tourism sector were always employed with industry experience/background. Lots of liaison used to occur, (through) moonlighting in industry" (917). Therefore, as with the experiences above, the Hospitality provision seemed to be college-based, albeit with the provision of documentation provided at the state level, which itself was partially a product of input from selected teachers.

Metals in Victoria

It seems that prior to 1989, the Metals industry sector in Victoria had a tradition of a centrally based curriculum provision that furnished modular materials to the TAFE colleges. Nether the less, as noted above, some teachers reported having a high degree of autonomy, whereas others felt constrained to be faithful to what was stated in the syllabus. "My initial role as teacher was not influenced by industry. Industry influence increased with the advent of new political processes of education. Areas outside fitting and machining, such as construction, industry training had large industry input" (914). There was industry influence on curriculum provisions, however it seems that it made requests of the curriculum provision within the TAFE system rather than directed the provision. "…before it was external (State Training Board) and after National Metals and Engineering Curriculum (NMEC) (909), "Industry requested certain modules to compliment their training of apprentices/trainees" (911), "needs of industry did not necessarily reflect needs of TAFE department"(907). Later, this relationship changed. "Because the change to CBT was related to the award restructure and in the metal industry. TAFE and industry have had to develop a partnership approach" (912). "Industry wanted to restructure and abolish some demarcation. Also, they wanted more specialisation in their industry" (913).

In sum, the introduction of CBT brought with it a nationally uniform means of developing and organising curriculum documentation; the 'intended curriculum'. However, prior to its

implementation, different bases for curriculum decision-making and organisation were being used in both sectors. It seems that in both Victoria and Queensland that the provisions of curriculum documentation and associated procedures for the Metals industry were centralised within the training system. Hospitality, on the other hand, seemed to be guided much more by college-based curriculum provisions. Under the CBT movement, that circumstance was to change to one centralised outside of the training system under the auspices of industry advice.

4.4.4   Influences on teaching practice prior to CBT

In order to understand further the antecedent conditions associated with curriculum decision-making, teachers were asked, "To what degree did you enjoy freedom in what was taught and how it was taught"(AI10). The concern here is to identify who or what influenced their teaching practice. (This question is compared later to one that presents data on curriculum decision-making once CBT was implemented.) The responses to the first question are presented in Table 4.2 (Appendix 1). Some of the strongest statements come from Hospitality teachers in Queensland, who reported high levels of autonomy in determining what and how they taught. Hospitality teachers stated the following: "(the) teacher was king in such a climate (427) we had total freedom (423), basically you and your team determined what and how it was to be taught (423), areas to be taught were often interpreted differently by different teachers (426), but interpreted differently by individuals based on own experiences (428); enormous degree of freedom (432). However, some Metals teachers provided similar comments, for example, "Never felt bound by one delivery strategy and I saw the syllabus as a minimum (419), total freedom as far as I was concerned (418).

The responses indicating an involvement with 'Senior teachers and peers' was consistent across the two sectors. However, the subjects reporting that combinations of teachers, senior teachers and centralised bodies (e.g. curriculum branch) were more likely in the Metals sector. There is a patterning in the responses indicating that at this level of decision-making, Hospitality teachers were more likely to experience greater autonomy than their Metals counterparts. There are good reasons for this circumstance. Firstly, the Metals courses are regulated trade courses. "In a licensed trade it was necessary to maintain close contact with industry" (434). Secondly, the Metals courses had a long tradition within TAFE, unlike Hospitality. So again, there is evidence of different antecedent conditions prior to the introduction of CBT. Again, these differences appear to be cross-sectoral rather than state-based as identified above. Also it is note worthy that criticisms voiced by external interests, that teachers had too much autonomy are also being voiced by some of the teachers, in administrative roles (e.g. 432).

Responsiveness to the syllabus

Continuing the task of identifying antecedent conditions associated with curriculum decision-making, the teachers were asked "To what degree were you responsive to syllabus requirements (AI11). The concern here is to understand in more detail the decision-making process (and later for these data to be used to provide pre and post comparisons). This particular item refers to the role of syllabus in the curriculum process. As proposed in Chapter 2, much of the effort to secure a uniform curriculum provision in VET was through national curriculum documents containing nationally agreed outcomes. These outcomes were aligned to National competency standards. The syllabus was the manifestation of national standards and national curriculum deliberations – the 'intended curriculum'. Consequently, data about how teachers used the syllabus prior to and after the implementation of CBT aims to furnish indications of whether syllabus use is likely to achieve the intended outcomes. A summary of the responses is presented in Table 4.4 (Appendix 1).

The data indicates that prior to CBT, the syllabus was not uniformly seen as a guide to be followed faithfully by teachers. Some teachers claimed to have adhered faithfully to the syllabus stating the need to adhere to guidelines because of educational audits, inexperience and other concerns. The syllabus as a guide was a common motif. Rather than determining practice, it was adopted typically by these teachers as something with which they could be discretionary. The responses here seem to be balanced across states and sectors.

4.4.5   Antecedent conditions in overview

In overview, there were different antecedent conditions across both the states and industry sectors. The overview which follows presents there differences in two sections; the first discussing the prior knowledge of CBT and the second, the organisation of curriculum.

Prior knowledge of CBT

Different antecedent conditions existed between states and sectors in the prior knowledge of CBT by teachers. The Victorian teachers reported being far more knowledgeable CBT. A smaller component of Victorian teachers claimed they knew nothing of CBT, than their Queensland counterparts. The responses from the Victorian Metals teachers, in particular, indicated a greater knowledge of the implementation of CBT and were based on their knowledge about its implementation. So prior to its implementation, it seems that Victorians were more knowledgeable, in particular, about the goals and processes of CBT than in Queensland. Also teachers in the Metals sector seemed more knowledgeable than those in the Hospitality sector. This finding can be explained, at least in part, by there being a curriculum and instructional model (the Instructional Systems Model) which was introduced into the

trade areas in Victoria in the early 1980s (Mealyea 1985). This system is analogous to what comprises the current provision of CBT (e.g. modularised, resource-based curriculum provisions and a more learner-focussed approach to instruction). It seems that the Metals sector in Queensland was more closely aligned to central prescriptions. Also, this sector in both states led the introduction of CBT. As a result, awareness programs (e.g. "Training Restructured") were very much targeted at the Metals sector. The knowledge of CBT, prior to its implementation, was not uniform across states and sectors. Knowledge varied from claims of no knowledge at all, to those who had engaged in a provision of VET, which was quite similar to what was ultimately implemented nationally. Indeed, the emphasis on self-pacing which was a part of the Victorian trade provision has never been fully endorsed by all state or federal government as an integral part of CBT. Rather, where self-pacing has occurred it is more likely driven by resource-based factors and, in particular, beliefs about the cost-effectiveness of resource-based provisions.

As stated above, the importance of differences in knowledge about CBT are at least fourfold. Firstly, quite different bases of knowledge existed prior to its implementation. These differences encompassed ignorance of the initiative to those who had had experience with implementing a similar system. Secondly, the 'top-down' means of organising curriculum was perhaps more familiar in the Metals sector than in Hospitality. Thirdly, most of the initial trials and professional development support and materials was directed at the Metals sectors and its teachers. Their needs may have been quite different than those in other sectors. Fourthly, assumptions that uniformity of provisions could be realised by edict seem quite naïve given the differences in teachers' readiness for this initiative.

Organisation of curriculum

In Queensland, prior to the uniform introduction of CBT, the vocational education provisions for the Metals industry were organised from within the state's training system. There was a central curriculum branch within the TAFE system, based in Brisbane that furnished syllabus documents. An examinations section distributed centrally developed and prescribed examinations to the state's TAFE colleges. In addition, there was also a section in Brisbane that allocated apprentices to colleges round the state. Therefore, much of the decision-making within the Metals sector was centralised and top-down within the state's training system. In contrast, it seems that although some national documentation existed for the Hospitality industry, there was less centralised prescription and teachers enjoyed greater discretion in designing their own programs and assessment. The Hospitality teachers' work in both Victoria and Queensland could be characterised as being college-based, whereas the Metals

teachers' work was more system-based. As noted above, in Victoria, trade courses were based on a system which was analogous to CBT known as the Instructional Systems Model.

In overview, there were differences in the antecedent conditions of the two sectors in Victoria and Queensland. These differences are explainable by the different stages of development and profile of the two sectors, not the least that the Metals industry largely focussed on legislated trade training procedures. The Metals trades had historically played an important role in the vocational education system, whereas at that time, the Hospitality industry was emerging as one to which the publicly funded provision of vocational education was being extended. The important outcome of these different pathways of development was that teachers' roles, the source of curriculum documentation and materials were quite different across the two industry sectors.

So there were (i) differences in the determination of curriculum decisions about courses (ii) differences in the autonomy of the teachers in implementing curriculum (e.g. Metals teachers guided by external notes and ISM, the Hospitality teachers using materials they had developed themselves or in expert groups to implement locally). This meant that teachers in each of the sectors had different roles prior to the advent of CBT. Taking Marland's (1978) categorises of teacher roles, it seems that in Hospitality, teachers were more likely to be engaged in roles as researchers and developers, than their counterparts in Metals (see Table 4.5 [Appendix 1]). These differences can be partially explained by the courses offered in the Metals being regulated trade courses and the Hospitality being an emerging area of interest that, although having a regulated trade (professional cookery) did not have the same degree of imposed centralised structures. However, consistent across both sectors was that the bulk of decision-making was being undertaken within the TAFE system (teachers in Hospitality, state system in Metals), rather than by industry. Informal links and newly appointed staff were stated as the means by which the industry voice was being articulated. Industry spokespersons noted that that industry influence was being enacted through decisions about the contents of curriculum documentation, particularly syllabus; the 'intended curriculum'. However, as suggested above, not all teachers were closely guided by these documents.

From these different bases, the next section outlines how and in what ways the introduction of CBT and its associated administrative arrangements (national curriculum documentation, accreditation and assessment frameworks) transformed arrangements for the intended curriculum in both sectors, thereby attempting to rendering them more uniform. It was intended that the transformation was to be towards a greater emphasis on decision-making

external to the vocational education system and colleges. The question is to what degree was this realised.

4.4.6   Curriculum provisions after CBT Implementation

This section draws upon data that inform about in what ways curriculum provisions were changed by the implementation of CBT. The components of this section are (i) changes to teachers' activities as a result of the implementation of CBT, (ii) the responsiveness of teachers to the CBT syllabus and other priorities; (iii) the transformation of teachers' practice; and (iv) the impact of the accreditation processes on teachers' work. Through an analyses of data that addresses these issues it is proposed to understand more about the way that CBT has transformed teachers' roles in the development and implementation of curriculum. The influences on the curriculum and teachers' activities, prior to the implementation of CBT set out above are used here as a basis for comparisons.

Changes to teachers' activities

In the focus groups, teachers were asked to respond to a list of teacher activities. This list was taken from documentation about teacher's roles as set out in a registration document (Board of Teacher Registration 1997). Teachers were asked to indicate whether these activities had changed prior to and after the implementation of CBT and also what was the change. Table 4.5 lists these teacher activities and the subjects' response. The activities are presented in the left-hand column. In the two columns to the right are responses indicating whether these activities were part of regular practice prior to and since the implementation of CBT. In the right hand column, the reasons for any differences in activities are presented. The activities are: Determining content for course; Lesson planning; Feedback to students; Individualising learning; Group work; Program Planning; Promoting independent learning; Keeping student records; Finding time to assess students' work; Reviewing curriculum; Monitoring learners' progress; Managing the learning environment; Monitoring and evaluating performance; Promoting students' acceptance of responsibility; and Involving students in self-evaluation

The following are brief descriptions and discussions of the responses to these activities.

Determining content for course

Almost unanimously those suggesting changes stated that there was less involvement with determining course content after CBT's implementation than had been the case prior. The exception was a subject who noted the greater demands brought about by individualising the curriculum (911). Those noting reduced involvement by teachers referred to a more restrictive provision, lack of control, concerns about audits, prescribed by national bodies. Of those who

said there was no change, the largest groups were Victorian Metals teachers (5), and Victorian Hospitality teachers (4).

Lesson planning

Of those who provided examples of changes in lesson planning, most claimed less was required (8) whereas two teachers stated more was required to manage individual students' programs. All those stating there was change were from the Metals sector. The responses about changes to lesson planning are of two kinds. References are made to national external modules whereas, the others refer to self-pacing and the individualised nature of curriculum in Metals. Depending on the perspective, individualised and self-paced curriculum arrangements has been claimed to replace formal lessons and hence their planning, or, conversely, require a higher degree of planning. So the key impact on planning in the Metals sector seems to be a product of individualised and self-paced instruction. Those stating there was 'no change' were from both sectors and states, with Hospitality being represented slightly more frequently.

Feedback to students

More responses indicated increases in the amount of feedback to students than those indicating it had reduced. Those stating there was a reduced requirement referred to non-graded assessment and that students' work has become more independent. These responses were from both sectors. Those claiming feedback has increased, referred to enhanced administrative requirements for assessment, more supplementary assessments, different levels of students' needs to be met and students' awareness of the right to receive detailed feedback. These subjects were wholly from the Metals sector. Those claiming there to be no change were representative of both sectors and states. Overall, the evidence suggests that there has been an increase in the demand for feedback to students, which has had most impact in the Metals sector. These changes are associated with administrative concerns as much as educational requirements. Indeed, the only reference to student involvement is to accommodate their growing expectation for feedback on their progress.

Individualising learning

Unanimously, those who stated there had been changes proposed that much more individualised learning was occurring after CBT, than before. The activities involved in this change included monitoring student progress, more students, self-paced programs and the need to meet student needs. Subjects claiming these changes were more likely to be from the Metals sector than Hospitality. Those who claimed 'no change' were representative of both sectors and states. Consequently, there is some evidence of an increase in individualised

learning that resulted in enhanced monitoring, working with more students and individualised programs for some teachers

Group work

It was claimed that either there was no change or the change had been to reduce the amount of group work. Those claiming 'no change' were representative of both sectors and states. However, those claiming changes were mainly from the Victorian Metals sector, almost universally stating that the shift to individualised instruction had reduced opportunities for group activities.

Program Planning

Almost universally, those reporting changes stated reduced teacher involvement in program planning. This was held as being the product of a lack of flexibility in industry determined programs and more difficult because of individualised and self-paced learning programs. These responses were representative of both states and sectors. Conversely, one subject claimed meeting enterprise needs meant more program planning.

Promoting independent learning

Most subjects claimed that there was little in the way of opportunities to promote independent learning which seems curious given the references elsewhere to self-directed learning. These responses were representative of both states and sectors. Of those who claimed changes had occurred predominately stated that more opportunities were now available. The sources of those opportunities were founded in independent study (e.g. research), additional monitoring, and access to materials for students to work with, the provision of individual pathways for learning, and the use of self-paced instruction. Again, these responses were representative of both sectors and states, although Victorian Metals were most strongly represented.

Keeping student records

Most commonly it was claimed that no change had occurred in the keeping student records. Those supporting this view were broadly representative. However, there were those claiming quite strongly that additional demands were demanded here. In particular, it was claimed that the requirements for recording and record keeping associated with student performance and their maintenance had become onerous. It was mainly Metals teachers who expressed concern about additional record keeping activities. One subject stated that electronic aids had eased this task.

Finding time to assess students' work

The commonest view across both sectors and states was that finding time for this activity had not changed, it was the same prior to and after CBT's implementation. Those who claimed changes noted an increase in the demand of assessment activities, an increased variety of assessment tasks and enhanced assessment related administrative activities. Given other demands, the limits of time were also reported. The respondents were representative of both sectors and states. So where there was reported change in managing to find time to assess students' work, the demands of assessment and administrative tasks were noted.

Reviewing curriculum

The responses to reviewing curriculum commonly were reported as being the same. However, some, claimed that they had not been involved before and were not now. Of those who stated a change had occurred it was that they were less involved now than prior to the implementation of CBT. The reasons advanced for the reduced involvement included an exclusion of teachers, lack of local content and a focus on user-pays.

Monitoring learners' progress

The commonest view across both sectors and states was that there was no change in the monitoring of learners' progress. It was the same prior to and after CBT's implementation. Those who dissented stated commonly that this activity had become more intense. Noting the requirements of audits, monitoring students' completion of all learning outcomes, and the focus on these outcomes, these subjects stated that monitoring students' activity had become more demanding. For these subjects, monitoring student performance was unanimously associated with outcomes, rather than their progress towards outcomes.

Managing the learning environment

In response to changes to managing the learning environment, the common view across both sectors and states was that the demands of this activity had not changed. It was the same prior to and after CBT's implementation. Of the four views dissenting, two proposing that a lack of resources inhibits this activity.

Monitoring and evaluating performance

The commonest view across both sectors and states that this activity had not changed, it was the same prior to and after the implementation of CBT. These respondents were representatives of both sectors and states. Only four subjects dissented from the common view. They all stated that there was more required in the monitoring of student performance now, with the demands of audits and adherence to national prescription.

Promoting students' acceptance of responsibility

The responses to this activity were quite diverse. A number of subjects claimed no changes had occurred in arrangements for promoting students' acceptance of their responsibility. These respondents were representatives of both sectors and states. However, there were contradictory views with some claiming that these activities had increased while others suggested they had decreased. Those claiming more opportunities were now available stated that there was less teacher availability, flexibility with what students learn, when they are assessed, and availability of resources which students can engage with independently. These concerns are focussed on opportunities for learning processes. Conversely, there are views stating that multiple opportunities for assessment reduces student responsibility. Another view questions the goals of educational processes under CBT stating that there is more difficulty questioning content relevance. So, the issues of increasing students' acceptance of responsibility are one of the few areas of considerable divergence of views.

Involving students in self-evaluation

The common view, across both sectors and states, is that involving students in self-evaluation has not changed prior to and after the implementation of CBT. These respondents were representatives of both sectors and states. Views claiming there have been changes are again divided, although most respondents claim that more opportunities are now available. These views relate to student control over the assessment process. Those views questioning increased opportunities suggest that the very basis of CBT assessment inhibits students' self-evaluation as the goals for what and how they are to learn are established elsewhere by others.

4.4.6   Changes to teachers' practice

Overall, there was reported continuity in many of teachers' activities prior to and since the implementation of CBT. However, there were changes. In overview, the data in Table 4.6 (Appendix 1) suggest that there was some consistency across sectors and also inconsistency. Across the sectors were the following:

(i) Changes in '*Determining content for course'* was viewed consistently across both sectors as being less a part of teachers work after CBT's implementation than before.

(ii) Changes to '*Individualising learning'* was seen to be a shift to a more individualised focus for curriculum arrangements which eroded opportunities for group activities in some ways and made greater demands upon teachers.

(iii) *Changes to Program Planning* were almost universally seen to be associated with reduced teacher involvement and an increased emphasis on externally determined programs.

(iv) Changes to *'Group work'* were to seen as a shift from group activities towards individual activities. These changes comprised a shift to individual pathways of learning, self-paced approaches to learning, customised programs, and resource-based approaches to instruction.

(v) Commonly it was claimed there was no change to *'Finding time to assess students' work'*, although some claimed that other activities encroached on this time. *'Monitoring and evaluating performance'* was also commonly viewed as not having changed post CBT.

(vi)*'Reviewing the curriculum'* was commonly held to be an activity where change resulted in less involvement. However, it was proposed quite widely that there was little involvement prior to CBT.

(vii) *'Keeping student records'* were viewed consistently across both sectors as now being more demanding.

(viii) *'Monitoring learners'* was commonly reported across both sectors as not having changed.

(ix) *'Promoting independent learning'* was commonly reported not to have changed. Those claiming it had, were Metals teachers.

(x) Changes to *'Lesson planning'* were reported as having a greater impact upon the Metals sector with more work required to accommodate individualised instruction.

(xi) *'Feedback to students'* was seen to have increased as reported by the Hospitality teachers, but even more so by Metals teachers

Overall, there is evidence of both continuity and change. Not all teachers' activities have been wholly transformed by the implementation of CBT. In particular, *Promoting independent learning, Keeping student records, Finding time to assess students' work, Reviewing the curriculum, Monitoring learners' progress, Managing the learning environment, Monitoring and evaluating performance and Involving students in self-evaluation* are reported not to have been transformed. Where changes have occurred it is associated with more *Individualised learning*, a reduction in opportunities for *Group activities*, a reduction in teacher involvement

in *Determining content* and *Planning vocational education programs*, and promoting *Students' acceptance of responsibility*. Increases in teachers' work have been associated with administrative tasks associated with Assessment and Monitoring activitie*s*.

The analysis here suggests that in keeping with narrowing of their roles, that teachers' work has become more focussed upon being Implementers and Adapters to use Marland's typology. It seems that roles associated with being Developers and Researchers are the ones that have been most weakened. The question remains as to what degree is this a mere change in teachers' roles as brought about by changes in institutional arrangements (Seddon 1997) or a more fundamental change. However, now new changes are occurring within VET that may once again see teachers engaging in a wider rage of role. This refers to the shift to enterprise-based arrangements which is now pressing teachers to customise curriculum to the needs of local enterprises. In particular, the advent of the Training Packages is seeing a shift in that direction (Billett & Hayes 1998). So this change may well see the latest in the transformations in the professional roles of educators as Seddon (1997) suggests.

Also, in examining the factors that have brought about change in teachers' practice, they seem to be most closely associated with external arrangements those that have a public aspect (e.g. being responsive to demands for accreditation requirements and changes to assessment practices. Hence, those practices that demand attention to an external audience are those that the data suggest have been most transformed. This seems to suggest that teachers as autonomous practitioners have residual abilities to resist unwelcome changes. That is particularly the case when these practices are conducted in the privacy of the teachers' classroom. This of course is a two-way street. However, it reinforces the naivety that teachers' practice can be changed by external mandate alone.

4.4.7   Responsiveness to CBT syllabus and priorities

To gain further insights into changes brought about by the implementation of CBT, the teachers were asked about how changes in curriculum organisation effected their work. This was done in two ways. Firstly, teachers in the Focus groups were asked to respond to a Likert scale indicating "To what degree they were currently compelled to be responsive to syllabus requirements". Also they were asked "Are there difference between pre and post CBT priorities? (PC2). Responses are presented in Table 4.7 (Appendix 1). Below, the findings from this table are discussed. These augment the data from the industry interviews and teacher histories that are reported below this table.

In overview, reasons why subjects stated they needed to follow the syllabus 'faithfully' were associated with: (i) accountability measures including concerns about auditing; (ii) the articulation of clear learning outcomes in the documentation; and (iii) to meet the requirements of the range of available subjects. The responses claiming to be 'guided by it sometimes' are associated with: (i) a lack of resources to adhere faithfully; (ii) concerns about the quality of educational provisions with the curriculum provisions; and (iii) concerns about accountability and auditing. One subject claimed that they 'considered the syllabus occasionally and two subjects that nothing had changed'. Overall, the responses indicate that concerns about adherence to the syllabus are premised mainly on concerns to meet learning outcomes and about being audited.

When compared with Table 4.3, it seems that for these subjects there is, overall, no greater commitment to following the syllabus with fidelity than prior to the introduction of CBT. What has changed are the reasons why these teachers' practice is claimed to be influenced by the syllabus. These reasons are associated with accountability. This was a goal of the reform process. Two issues however, seem to arise here. Firstly, the reasons for focussing on the syllabus are not wholly associated with educational outcomes. They are about administrative procedures and practices and adherence to external demands about learning. Secondly, further data might inform about the degree to which claims about adherence to the syllabus are related to other matters associated with processes and outcomes.

Data were also gathered from interviews with industry and enterprise representatives, and through the teacher histories. Teachers were also asked "What changed the ways training needs were established in your industry? (PN1).

Hospitality (Queensland)

Changes in the Hospitality sector focussed on both the implementation of curriculum (the enacted curriculum) and the intended curriculum.

There was reported a shift towards greater uniformity in what was to be implemented. According to one teacher, "We were all teaching the same thing in different ways. CBT was a vehicle for standardisation, at least early on" (432). So there were changes in what was taught and the outcomes for students' learning. One of the contentious things during the implementation of CBT was the use of the term 'to industry standards' as an outcome. According to an industry representative, this led to confusion about these standards that were to be the basis for teaching and assessment. (i.e. "what the hell are industry standards?" I mean, are you talking about the Sheraton or who?(425)) This problem was seen as being

difficult to resolve, which is not surprising as the notion of industry is abstracted from actual practice. However, for others, things didn't change dramatically. "It still hasn't changed. I get the feeling that when new documents come out they're just massaging – changing names. I see people still teaching the same material they always have. What did change was the way we assessed". (423). This is consistent with what was proposed above. Also, the issue of heightened expectations of students is also raised here, "Having to communicate more and explain decisions that were not popular. Students wanted to know what they had achieved (412)".

There was a national focus on determining training needs (425) "they did a training needs survey on every possible skill needed within Hospitality. That was used as a basis for virtually everything. If you look at the one for cooking it got down to the skill of collecting and killing fish. A part of the needs analysis was a survey of exactly how many establishments actually carried out this particular skill. It was a massive survey and it was used for almost 8-10 years and was used as the basis for competency standards"(425). This survey denotes a change from the prior circumstance were the teachers claimed to be the key source of curriculum intent to the use of a national audit. This change in emphasis marks a clear shift from the college-based approach of the past.

The reason for making this change from the college based approach was seen as a "searching for means of getting a more standard product from all colleges" (432). It was seen as an approach to manage the TAFE system with "CBT introduced to achieve this rather than the use of inspectors" (432). Concerns about the basis for changing the intent and content of curriculum were also raised by the subject who had responsibility for its state-wide implementation. "There was a lot of mistrust. The training was identified by industry perceptions. Prior to CBT there was massive criticism of TAFE, but when CBT came in they started to say "we want TAFE to do the assessment because they're the only ones that haven't got an axe to grind" Why should I take assessment from that bloke down the road? (425). However, it has been proposed that as a result of these changes a "closer relationships developed between industry and providers (411).

From an employer perspective, there were significant changes. These referred to the 'experienced curriculum' for the learners, that is reduced time in college-based experiences, and assessment being undertaken in the workplace. "The big change is really the fact that you don't have to send them off to college with your workplace based assessment. For your smaller businesses you can't really afford to have your apprentices away for their blocks… That flexibility has made a large difference. If your apprentices show ability they are not

required to be away for such a long period of time. Our apprentices are formally assessed on site by TAFE trainers. (421)

Hospitality (Victoria)

In Victoria it seems as though the transformation was not as great as in Queensland, although the same concerns about assessment and outcomes were raised as issues.

A teacher commented "I think a lot of people thought that we were competency based anyway, particularly for the practical stuff. I think for those people who were teaching theory subjects, that they weren't too sure of how to formulate it into competency based assessment, whereas a practical subject is very easy to perform a competency-based task. I always thought that a practical subject was competency based, anyhow, because of the nature of the actual subject. I had my own desired outcome sheet, but that required a certain outcome that students had to achieve before they could pass the subject (904). The demands of other initiative were being experienced by teachers simultaneously, "…at the same time as we were introducing this new curriculum we were moving towards open access, flexible delivery approach - similar to the skills supermarket in Richmond were running. Therefore, the teachers had to be advised on how they could arrange their studies and timetable to accommodate people enrolling at any time. And going through them being assessed at then to be ready (900) …

The influence of external sources of curriculum content and intent were also evident. "… the main change was that industry now had a much bigger say in what should be done, what should be in there, everywhere in fact - at any stage of the event, …so I think the major change has been the link for people such as myself to ensure that the key power brokers in the industry have input to any curriculum development work and then in interpretation. By negotiating through Industry Training Boards we get representative people on those project development committees" (900).

Continuing, the curriculum officer for Hospitality suggested that the basis for curriculum intents and content changed as did teachers' involvement in their identification and selection. "Well, what has changed is now that the industry training board, we are talking national now, have to set a national competency standards, these effectively would encase what we would have done in a DACUM session or job analysis before. So our entire curriculum was based on these competency standards and the only time we would get involved in developing those is where there are no national competency standards to be used. We are not involved at all. We have become the receivers of the base on which curriculum is built, rather than the receivers of curriculum. We are not involved in developing standards, at all. So that bits been removed

from us. The only time we get involved in doing that is when it is local standards or community standards". (900)

What is proposed here for the Hospitality sector characterises much of what was presented earlier; that little changed in teachers' practice apart from those practices which were externally mandated. In particular, there has been a shift from a college-based curriculum provision to one that is determined by deliberations which are external to the colleges and the TAFE system. Teachers and providers of vocational education became 'receivers' of what was developed elsewhere. One consequence of this change was that the focus of what was taught and outcomes were not always clear. Changes to assessment, including justifying non-graded assessment to students also seemed to be influencing curriculum decision-making. The point here is that the intended curriculum was influential in so far as it mandated particular kinds of responses, (e.g. assessment practices, and adherence to standards, having to explain mandated assessment practices). However, much of what was implemented remained the same, except again where external demands intruded in particular ways.

Metals (Queensland)

From Queensland teachers' perspective, in the Metals sector change occurred, but not all aspects of teachers practice were transformed. It was "all the same, except that under CBT there are many more tries for assessment for each of the learning outcomes" (409), "same pre and post, except the depth of record keeping, assessment items and involvement in evaluation has been much greater since CBT. And, for what? In most cases to satisfy the auditing requirements which really have very little to do with education and training" (405) "modularisation, and uncertainty with assessment practices (what, when and how) changed what teachers' practice (431). It is also suggested by a teacher respondent, who has administrative responsibilities that students also did not necessarily welcome the introduction of CBT, "a greater number of students didn't want or had the ability to take on this form of learning" (434). So, the consistent theme about an increased emphasis on assessment and other activities associated with accountability were identified by teachers in the Metals sector.

The shift in relationships from industry getting what the training system wanted, to what 'industry' wanted, as well as the quality of that relationship are evident in the comments of an industry representative. "Industry peak bodies were the ones who made CBT curriculum, the national standards. Training personnel were just told what to do with it once it had been done, so there was very little relationship between industry and providers at that stage" (422). This view reinforces the idea of teachers as 'implementers' of curriculum developed elsewhere and by others.

However, it seems as reported elsewhere that relationships between providers and enterprises have changed since the introduction of CBT. For example, an enterprise respondent states, "We now have more contact with the college teachers. They now bring students down here and I show them through the place. Lads come down here for work experience that never happened before CBT. I have a fair bit more contact with the college teachers. They come out and talk to me a lot more. Following up on kids on work experience or whatever"(420). Also, capturing both the shift in the Metals sector from a system-driven curriculum response, to one which is responsive to industry and now involves greater interaction with enterprises, the following is proposed. "TAFE's role in curriculum development process declined, the loss of curriculum department, shift from the centre and a rise in the role of ITABs. However, some functions still involve TAFE because ITABs lack expertise" (418).

Key changes away from the previous focus on a TAFE system-led metal provision are also evident. Firstly, curriculum provisions were able to respond to local needs and "focused on the requirements of a local major infrastructure development and the enterprises that contracted to that development" (431). Secondly, according to an industry informant, education provisions "Responded to changes in industrial relations (award restructuring) reduction of classifications - new courses were developed to respond to changes in industrial agreements and efforts to make them more responsive to industry (419). Thirdly, the rising influence of the ITABS was evident in the intended curriculum. "The Metals and Engineering industry developed an ITAB, … which drove the changes that were subsequently to happen because of CBT. … They told us we had to get all our programs "modularised" into competency-based. We didn't consult anybody other than the peak industry bodies, who looked at all the curricula around Australia and found the common elements in it and then made that the standards." (422). So, in these ways there was a shift from a focus on decision-making within the TAFE system to the system being increasingly influenced by 'industry' and also local enterprises.

So, the key changes with Metals were modularisation, assessment and relationships with enterprises and industry. However, as mentioned above the implementation of CBT in Victoria also coincided with the introduction of a broadening base of self-paced delivery. To some this meant there was no change (902), whereas for another, "The main impact was the implementation of self paced delivery and rolling enrolments" (903). However, the task of addressing the goal of meeting directly enterprises' needs, is beyond the resources of the TAFE system. As a industry informant stated:

What CBT didn't address, and it was supposed to, was the fact that the curriculum was supposed to be in line with on the job training. Now that's impossible. I don't care what system you put in place, you cannot design a curriculum that allows a client to do a universal joint today, it would be tedious, the environment today here and then go out on the job and do the same sort of thing. The employer may not have that. So there was very little alignment between that and the CBT delivery. That was a real downer for it, because we didn't work, we had this great way to tell the employer what we should be doing, instead of saying to the employer, look, what do you really want; he's your apprentice, he's not mine. I would argue that it hasn't changed and it purely hasn't changed because nobody that I know of within the TAFE system, and we are not funded for it, has the capacity to go out to industry and say, what do you actually do in a workshop, when do you do it, how do you do it, what are structures, and then can we do this in conjunction with you. It just doesn't (901)

4.4.8   Impact of the accreditation processes

One of the initiatives most associated with the introduction of CBT was the establishment of a common accreditation process across the states and territories. Rather than convince those involved in vocational education of the merits of CBT, measures were adopted under the National Framework for the Recognition of Training (NFROT) that effectively mandated the implementation of CBT. Put simply, if the course documentation did not explicitly embrace CBT and its associated baggage (RPL, modularised units, and adherence to industry standards) the course would not be formally recognised in the state or territory. This meant no funding to offer the course, no recognised certification could be awarded and no government endorsement. Consequently, for courses to be offered, all state and territory governments, under an agreement with the federal government, mandated courses to be in a CBT format. An associated process, registration, was used to determine if the providers had the resources and would adhere to the requirements for CBT format set out in the accreditation documents. As with the use of uniform and detailed syllabuses, these processes were held to be bureaucratic measures to manage the implementation of a uniform provision of CBT.

To determine the consequences of the use of accreditation procedures, the teachers and industry representatives were asked about the effect of accreditation on curriculum practice. How did the processes of accreditation change your work? (PC3) Table 4.7 (Appendix 1) reports the main changes experienced by those involved in vocational education provisions as: the reporting activities, the registration procedures, the influence upon teaching practice, the

need for professional development, influence upon job satisfaction and those proposing no change had occurred. In more detail, the data pertaining to each category are as follows.

Reporting activities

The data reporting activities include reference to record keeping, monitoring and validating what has been done. Some saw this as purely an administrative task (teachers). CBT was seen also as improving the educational provision and making the system more responsive (enterprises). There seems to be little differences across the sectors or states, except that it was referred to more in Queensland than Victoria. From the teachers' perspective, these tasks were identified largely as being associated with accountability to external demands and of a kind not previously required. It indicated the external demands for the goals and means of vocational education programs to conform to set requirements that includes the implementation of associated curriculum initiatives (e.g. RPL, cross accreditation, assessment practices). So in sum, these activities were perceived to be means to become and maintain responsiveness to industry requirements, by both teachers and industry respondents. The question is whether such activities enhanced the quality of educational provisions.

Registration process

This process was viewed as a mainly unwelcome requirement to demonstrate credentials to teach and have the resources to do so as stipulated. Profiles of teachers, their qualifications and experiences, the infrastructure required for student experiences were at the centre of these requirements. Clearly, this was a challenge for a number of teachers and an administrative task for others. Much of this requirement arose from the broadening of the training market. For example, in Queensland, TAFE colleges were initially exempt from this process. However, with the advent of an open training system they were required to comply. The concerns here were represented evenly across states and sectors. So, whereas the accreditation process made demands about the curriculum processes to be adopted and maintained by those offering the courses, the registration process was about measures indicating an ability to provide the course as intended. So the key activities being subject to question were administrative tasks, and those associated with individuals' credentials to teach. The key consequence of this second concern can be found in the data below about professional development.

Teaching practice

Issues about the impact of the accreditation process on teaching are almost wholly negative. Those in the Metals sector in both states in particular advanced these issues. These changes extended to fundamental aspects of teaching practice, as its influence is reported to refer to

'what is taught', 'how it is taught' and 'how judgements about students are to be made'. The prescription of what has to be taught (minimising content, selected content) and its workplace focus, set up conditions for what can legitimately be taught. Equally, how teaching is to proceed (modular formats, fragmentation of units, reduced group work, different kinds of students, becoming more of a facilitator) is a product of what is prescribed in the accreditation procedures. These prescriptions are largely held to be unwelcome by the teacher. The changes to assessment practices and making judgements about students' prior knowledge were also prescribed and not welcomed. Prescriptions that undercut teachers' discretion (albeit for good or bad reasons) were of concern to a number of teachers. Hence, when the intentions are detailed they are to attempt to make teachers mere implementers. What is suggested earlier and elsewhere is that teachers are unlikely to be faithful implementers of ideas that they contest. More to this, the use of unwelcome external prescription may make aspects of the teachers' practice illegitimate. Again, the question is whether these prescriptions are warranted to improve the quality of educational provisions.

Professional development

Arising from the registration process, some respondents reported many teachers were being pressed to improve their credentials. Two areas of concern are evident in the data that pressed these teachers to take action. These are (i) currency of vocational skills, (ii) level of qualification. That is, the external demands of the registration process pressed teachers into engaging in professional development activities. Significantly, according to the data, for many teachers in the vocational education system this meant augmenting their work experience or technical qualifications, whereas for those in industry it meant accessing basic instructional skills. So, the registration processes, as a quality measure, demanded teachers are current and qualified in both content and pedagogy. However, it is fair to say that the requirements for pedagogy were at a lower priority than those relating to currency of vocational knowledge. For instance, beyond having at least one member of staff qualified to teach was often a requirement for registration, there was no mandated requirement that all teachers in TAFE and private providers had to be registered teachers. It is unlikely that a provider would have been registered if only one member of the teaching team had appropriate vocational qualifications and experience. One curious factor in these data is that in Queensland it was only Hospitality teachers who raised concerns about the currency of their knowledge. This seems at odds with earlier comments about the currency of their skills guiding the pre-CBT curriculum development processes.

In sum most changes were reported to be associated with the processes of becoming a registered provider of courses and than in meeting the requirements carried by this

registration. These activities however, went beyond mere administrative tasks as they influenced the nature of teachers' work, as also indicated in the previous section. Moreover, one of the outcomes according to an enterprise respondent was that teachers now had greater interactions with employers.

4.4.9   Transformations to teachers' practice as a result of the implementation of CBT

In sum, the impact of the implementation of CBT in the key areas of the enacted curriculum appears to be as follows. Comparison between the data in Table 4.5 and 4.6 and also between Tables 4.3 and 4.6 reveal little quantum change in the way that these teachers were guided by the syllabus before and after the implementation of CBT. Consistent with the earlier analyses, the degree of change in practice was dependent upon how external interests manifested themselves. For example, where there were external requirements that teachers had to respond to there was evidence of action (e.g. current work experience). Yet where there was no mechanism to press for change little difference is evident (e.g. the utilisation of the syllabus prior to and after the 'uniform' implementation of CBT). So despite the effort expended in the development of uniform syllabi across the VET sector, only in those areas that teachers felt the pressure of accountability was there most evidence of change. Perhaps the commonest reported area of change was in assessment. Other changes associated with individualised curriculum and the shift to self-pacing seems to be particularly evident in the Metals sector.

So, in curriculum practice and decision-making, where teachers were able to exercise their discretion change appeared minimal. However, where external demands directly influenced what teachers' activities this made an impact on their practice, essentially covering what is taught and how it is taught. They were precluded from gathering information about courses, which was externally organised. Also, because of external demands, some subjects stated that 'additional record keeping', 'monitoring learners' progress', 'monitoring and evaluating students' responsibility' were required to be undertaken. Views about these changes to practice were typically viewed negatively, even when they could be construed as having a positive impact on students' learning. One concern was that these demands took time away from other matters. So while there is evidence that the imposition of CBT had an impact upon teachers' work, there is little to suggest that this was perceived positively or focussed teachers' more upon activities that are associated with student learning.

Analyses of the data suggest changes differed across the two sectors, possibly because of different antecedents. In the Hospitality sector, it seems the shift was from a college-based focus to one based on national prescriptions that were founded on a national industry skills analysis. In the Metals sector, the shift was from a system-based approach to curriculum

decision-making to one found outside the system in industry advisory processes. Both shifts were based on prescriptions being founded on nationally-based processes (skills analysis - industrial changes) and managed by industry-based committees. So the outcome for both sectors was a shift to more uniform and national approach to curriculum decision-making. The main outcome for teachers seems to be linked to the management of the educational system - and gaining responsiveness from the educational system.

Where change has occurred it was associated with a more Individualised approach to learning, a reduction in opportunities for group activities, a reduction in teacher involvement in determining content and planning vocational education programs, and promoting students' acceptance of responsibility. Increases in work are associated with administrative tasks such as enhanced requirements for reporting within assessment and monitoring activities. Therefore, in keeping with narrowing down the range of roles that teachers undertake, teachers' roles have become more focussed upon being Implementers and Adapters using Marland's typology. It seems that roles associated with being Developers and Researchers are the ones that have been eroded. This has raised question of whether a de-professionalisation of teachers has occurred or is this part of the evolution of teachers' roles (e.g. Seddon 1997). While teachers have rights in the curriculum development process so do others. Is being responsive to changing societal demands an acceptable basis to transform parts of teachers' roles, as has been proposed through government reforms? Here it is probably important to separate the issues of 'scape-goating' of teachers as the problem within vocational education, and, as such, responsible for perceived deficiencies and issues of being responsive to the needs of other interests (e.g. government, industry, students, enterprises). The next section seeks to determine how the decade of CBT has been responsive to these interests. From that, it is possible to arrive at conclusions about the worth of the reforms that provided both continuity and change for vocational education institutions and practitioners.

4.5. Evidence of the educational worth of CBT
Part B: Outcomes
The presentation of the data about the educational worth of CBT is divided into three sections, dealing with outcomes associated with: (i) industry links; (ii) realising enterprise and industry goals; and (iii) learning outcomes of students. The 'Industry links and outcomes' section presents and discusses the data that inform about the productivity of relationships between

industry and providers (0S2), the worth of these interactions (OK16) and whether the government goal of uniformity has been realised (OS4). The section headed 'realising enterprise and industry goals' presents and discusses the data on ways in which industry/enterprise goals have been met (OC7) and, specifically, whether CBT has improved competitiveness (OC6). The section on 'learning outcomes of students' presents and discusses the data on whether curriculum experiences are likely to generate higher order outcomes in students (OK15) and evidence of permitting transfer (OK18). A particular focus in these sections is on seeking evidence to support claims advanced by respondents. However, before commencing discussion in these three sections, some views about the overall efficacy of CBT are presented and discussed.

4.5.1   Overall views about the perceived efficacy of CBT

Industry and enterprise respondents and those teachers who furnished personal histories responded to the item "What evidence is there that CBT has changed VET practices for the better or worse? (OS1) The data from these sources are presented in Table 4.8 and accompanying Tables 4.9 and 4.10 (both in Appendix 1), which present data on the benefits of CBT and concerns about it, respectively.

Those respondents supporting the view that CBT has changed VET for the better are presented first. The views most commonly advanced claimed that the move to CBT has increased on-the-job experiences, the advent of workplace assessment, greater accountability and structures in the curriculum documentation which focus tightly on industry needs. Respondents claiming that CBT had changed VET for the worse, advanced concerns associated with a lack of student motivation, failure to acknowledge excellence, the danger of expediency in workplace practice and concerns that the private provision of VET might be undermined by the reduced periods of off-job time.

From Table 4.9, some overall statements of evidence of the efficacy of CBT are presented. From this it is possible to identify proposed benefits and concerns. In Table 4.10 (Appendix 1), the benefits are particularly seen to reside with enterprises and industry. The adherence to industry standards, accountability measures associated with responsiveness and concerns about cost-effective provisions, relevance to their particular needs, the industry focus of the curriculum content, the amount of time apprentices are away from the workplace dominate. Little is made of the quality of learning apart from the reference to individualised instruction. Outcomes are very much focussed on enterprise needs with the exception being a reference to portability.

The concerns presented in Table 4.11 are due only in part to an outcome-focussed approach to curriculum provisions. What is held as improving the educational worth, is associated with matters of integrating curriculum between on and off job experiences, having intents and content which are relevant at the enterprise level, self-paced/flexible approached to learning, individualised instruction and, for some the reduced time in the off-job provision. These initial views are now augmented by more detailed accounts from the range of informants.

4.5.2   The worth of relationships between providers of training and demands of clients

A key goal for improving the quality of vocational education provisions was to establish closer links between providers of VET and industry, in the first instance, and, more recently, enterprises. This goal aimed to make vocational education more responsive; to address demand-side requirements to use contemporary terminology. As noted above, there were existing arrangements for relationships between providers of vocational education courses and industry prior to CBT. However, the common claim was that these relationships were ineffective and that TAFE, in particular, was more concerned with supply-side than demand-side considerations. As stated in Chapter 2, it was proposed that closer links and an industry-led vocational education system would improve the quality of curriculum provisions. To this end, networks of industry advisory committees were established for each industry sector and national competency standards were developed which were aligned to the industrial requirements of the workplace. So from a governmental perspective, an industry-led VET system and one that had strong links between providers and clients (industry and enterprises) was a key goal for the curriculum development and enactment process. Consequently, in this section, the achievement of these goals is discussed using the data. Three bodies of data are discussed below. Those addressing the productivity of these relationships, those about worth of interactions arising from these relationships and those about whether uniformity of outcomes was achieved as intended under the industry standards regime.

In order to understand the quality of the relationships between providers and client groups, all categories of subjects were asked "In what ways are the new relationships among industry, training personnel and trainees productive or unproductive?(OS2)" The responses are presented in Table 4.12 (Appendix 1). In the left-hand column of this table, responses categorised into factors that have been proposed as either being 'productive' or 'non-productive'. To the right are columns used to aggregate respondents identifiable with these responses. These columns, from the left present the responses of Industry /Enterprises, Teachers/trainers and Students. Each of these groups of respondents is further divided into those from the Hospitality and Metals sectors.

Productive factors

The strongest pattern, and one across all groups of respondents, is that greater interaction is now occurring between VET providers and industry clients. In descending order of frequency of responses other factors are as follows. Industry and teachers propose that employers' needs are now being met. It is claimed, mainly from students but also their teachers, that student development, their career paths, and learning needs are being met through these closer relationships. Students also claimed that the expertise of their teachers is enhanced by these interactions. Teachers and students also supported the use of industry-determined benchmarks and outcomes. Non-specifically, it was claimed by a number of respondents that vocational education is more productive as a result of these interactions. Reference is also made to the workplace as a component of students' learning.

Non-productive factors

The list here is broader and responses less frequent. The most common response was from students claiming that the content of courses was not relevant to their work. The next most frequent comment claimed that little genuine interaction actually took place. Students and Metals' teachers also proposed this concern about the quality of interactions. A small number of respondents from the industry, teacher and student groups stated that the relationships underpinning the curriculum were failing to meet the needs of students. Other responses were from industry and teachers referring to the continued confusion over what CBT is and its changing manifestations. Also, a small group of students and one teacher referred to the lack of motivation brought about by non-graded passes.

From the data in Table 4.13 (Appendix 1), it is possible to conclude that interactions between providers and clients of vocational education programs have increased. Moreover, those interactions are held to have resulted in increased understandings about goals for vocational education. This finding is supported by the data above in the sections of procedures influencing practice. Accompanying this are far more comments supportive of the outcomes of these interactions than those suggesting they are not productive. The responses indicating industry/enterprise and students' needs are being met as a result of these outcomes is useful as they are supported by the client groups most effected as well as others. So the pattern in these data indicate that enhanced interactions have been realised and these have, in the main, been positive. However, concerns are advanced by some about the genuineness of interactions, thereby questioning their relevance.

4.5.3   Interactions between industry and instructors in promoting skilfulness

Interactions between providers and clients are held to render greater understandings about how vocational education provisions should be best progressed in ways that meet the needs of client groups and providers (Billett & Hayes 1998). In particular, in the emerging enterprise focus in vocational education, the needs of enterprises and their requirements for skilfulness are clearly articulated. Employers, industry respondents and teachers providing histories were asked, "What interactions between industry and instructors are valuable in promoting the skilfulness in trainees? (OK16). Table 4.13 (Appendix 1) presents the data provided by this question, categorised under headings which denote the kind of negotiation.

In this table, the most frequent interactions are negotiations between providers and enterprises. Through these interactions greater understanding of enterprise need is claimed to be realised. Yet, the comments themselves suggest one-sided negotiations that are concerned with providers knowing all about enterprises' needs, and, in some cases, to make enterprise training effective. There is no mention of learning to improve the provisions, except in terms of meeting enterprise needs. Interactions through industry placements and employers' understanding of teachers are also stated as being one-sided. Even the definition of successful teachers is countenanced in ways that are wholly associated with specific enterprise outcomes. Again, the findings here are similar to those in Billett and Hayes (1998), with enterprise needs dominating the relationship, goals and procedures. There is little in the way of reciprocity in relationships that might lead to mature associations between providers and enterprises. While this might be considered a naïve goal, the requirement to address learners' needs is not. These have been shown to be overlooked in an enterprise-focussed approach.

4.5.4   Realisation of uniformity through CBT

One of the earlier goals for CBT was to achieve uniformity in the processes and outcomes of the nation's vocational education system. As discussed in Chapter 2, the key concern by government was to make this system responsive to industry needs through the provision of national competency standards. It was these standards that provided the key intents upon which curriculum was to be developed, enacted and evaluated. Putting aside, for the moment, the worth of the uniformity view, in order to determine whether such an outcome had been achieved, Industry, Enterprise and Teachers respondents were asked, "In what ways has greater uniformity of training been achieved?" (OS4). Table 4.14 (Appendix 1) presents summaries of data elicited from this item. These data are categorised into those indicating the means by which uniformity might be realised and those stating that this goal is not being achieved. The former are further categorised into (i) the use of designated competencies; (ii) national curriculum documents; (iii) driven by users; (iv) clear outcomes. The data stating that uniformity is not being achieved are ordered in categories about (i) no guarantee of

uniformity; (ii) no uniformity; and (iii) not desirable; and (iv) no contact with other providers. Below this table in Exhibit 4.13a and 4.13b, are more detailed illustrative responses.

Exhibition 4.14a - Not achieving uniformity

We use module workbooks developed in other states. On one occasion, subject NM026, I rang an institute in Melbourne to find out where to obtain the material for a practical exercise. The response was just because we wrote it doesn't mean we are using it. (430)

Within the hiatus of change we've been going through over the last five or six years, it's not possible. We've done our bit to promote the growth of private providers, but most of them are truly shocking as providers go. It's not that hard to get accredited as a provider. (429) – enterprise

It is a hard enough job to achieve uniformity within one college, let alone across a system that has allowed numerous providers (private) of varying quality. (427)

It hasn't been achieved. Unless you put in a moderation system and check what's going on, how can you say it's uniform? Like yes, the curriculum might be more uniform in terms of definition of standards and performance and content. OK, that's defined clearly, but you're going to be subject to individuality unless you go and do a moderation process. Every person who delivers xyz has to get together and look at the assessment instruments, the results you're producing, the content and use that in moderation to see whether you've got variations of highs and lows and then feed that back so all players involved get that information and can, if they agree with it, follow it or adopt it. But that's not going to happen because who's going to spend the money. (418).

At the beginning, yes. However the training and assessment methods have varied to such an extent, that students select colleges to attend where it is easier to pass or become competent. There has been little funding provided to allow groups to get together to discuss these issues (434).

This question assumes that uniformity was not achieved before CBT. We are not sure that this is the case and are unsure that there is any evidence to support the notion that greater uniformity has been achieved. We would also question the assumption that uniformity is what is required. We believe that training should respond to the needs in each enterprise/context, although demonstrated competencies can be shown to address standards. (919)

Exhibition 4.14b - Achieving uniformity

To some degree - as it is now national, but the module books printed in each state use different resource material, and so place a different emphasis (408).

Using competency as the base you get far more transferability of skills. But with that, you also need to

have some enterprise specific training to meet the context of the workplace. A good competency provides the basis for uniform outcomes that can then be contextualised to a specific enterprise outcome (412).

Views about the achievement of uniformity are very much within the 'intended curriculum' and are found in statements about what is proposed, by their sponsors, to happen when the curriculum is enacted. In Table 4.14, under the category of 'Use of designated competencies' these data refer to prescriptive outcomes, the use of uniform standards and industry-focused assessment. Under the category 'National curriculum documents', reference is made to the existence of uniform documents, tests and modules. All of the data about how uniformity is to be achieved refers to the intended curriculum. Conversely, most of the concerns relate to the 'enacted curriculum', - its implementation.

With reference to uniformity not being achieved, these data are ordered into categories of: (i) no guarantee of uniformity; (ii) no uniformity; and (iii) not desirable. The data categorised under 'no guarantee' includes reference to different interpretations by individuals, different applications of vocational knowledge, uniformity of outcomes not being measured, different emphasis with curriculum materials and that it is only as good as the individuals using the materials. Under 'no uniformity' it is claimed that moderation would be required, but is not happening. Indeed, it is claimed that there is little interaction with others, that uniformity is impossible to achieve, curriculum is constantly changing and that diversity of students means there will always be differences which make achieving uniformity very difficult. Under the category 'not desirable' it is proposed that the needs of enterprises differ and people will resist being directed. These responses refer to what happens when or as a result of the curriculum being implemented. These data highlight the difference between curriculum as intents against curriculum as something that has to be enacted and experienced. Much of governmental efforts focussed on achieving outcomes through processes that sought to mandate individuals (teachers and students' behaviour). However, teachers' interpretations, interactions and responses are unlikely to be uniform.

The rationale for believing uniformity is achievable is embedded in behavioural views that propose individuals will respond to stimuli in a predictable way. Other views suggest that individuals make sense in a highly interpretative way. Hence, the curriculum that is enacted by teachers and experienced by students cannot be prescribed and pre-specified. Beyond these interpretative concerns which refer to usage of materials and their interpretations are other conditions which question the likelihood of achieving uniformity. Firstly, what comprises industry standards vary from situation to situation. What is acceptable in one workplace, may

not be in another etc etc. So, from the data here, not only is the prospect for uniformity held to be illusory, it may not even be desirable. Secondly, change is constant and unlikely to be unidirectional or uniform. Hence, achieving uniformity could only be momentary, if it could be achieved at all. Thirdly, as reported by these subjects, there is no effort being made to determine uniformity through means such as moderation, which is often used to achieve reliability in assessment. Indeed, it is claimed that the level of contacts among vocational institutions has declined as a result of the market-based approach of VET.

In sum, the evidence provided by the subjects, suggests that uniformity has not been achieved, is not likely to be achieved because such a goal is probably illusory and the required moderation processes that might seek to achieve the goal of uniformity do not exist. The evidence earlier about fidelity in the use of syllabus supports the findings here that to rely upon the use of syllabus and published standards to mediate achieving uniformity is probably quite naïve.

4.5.5   Meeting enterprise and industry goals

A key reason for the reforms within Australian vocational education and, in particular, the introduction of CBT was to make it more responsive, firstly to industry needs, and more recently enterprise needs. The goal was to be responsive to uniform industry standards developed through tri-partite industry processes. However, by now the need has shifted to reflect not only the requirements of industrial awards but the needs of the enterprises who engage in productive activity, employ and have need of skilled workers. Therefore, all classes of respondents were asked, "What evidence supports the claim that enterprise/industry goals have been met?" (OC7) to determine whether and in what ways the introduction of CBT has been able to meet these needs. A synthesis of responses is presented in Table 4.15 (Appendix 1). This table is divided into two sections. The first identifies factors indicating how CBT has met these goals; the second identifies factors claiming CBT has not met these goals. The factors for both sections are listed in the left column of the table. To the right of this column are respondents from Industry/Enterprises, Teachers/Trainers and Students. These subjects are further identified as being from the Hospitality or Metals sectors.

The responses to CBT contributing to Industry and Enterprise needs are divided into three subcategories of evidence: (i) outcomes; (ii) curriculum process; and (iii) curriculum arrangements. Those factors indicating CBT has not contributed to are less easily categorised as they are light on evidence statements. They are presented below.

4.5.6   The contribution of CBT in realising enterprise and industry goals

Outcomes

The commonest claim in this section, and one made by all classes of respondents is that CBT has delivered the skills enterprises require. Further, students, in particular, claim that they are now multi-skilled. Teachers propose student competence is high under CBT. Students claim, in a non-specific way, that there is evidence that CBT has realised the goals of enterprises and industry. These respondents propose evidence of CBT furnishing enterprises with the skills they need, producing competent and multi-skilled students. These factors draw support from other classes of respondents. These then are the outcomes claimed as evidence.

Curriculum processes

Curriculum processes here refer to evidence of how the curriculum processes under CBT have realised enterprise and industry goals. Teachers and representatives from industry and enterprises claim that CBT is responsive to enterprise need including being customised to these needs. Teacher, industry respondents and a student respondent claim that CBT is also responsive to industry standards. Components of workplace learning were identified by teachers and students as realising goals of responsiveness in their courses. Students note what has been reported elsewhere, that CBT provides opportunities for individual work. So in sum, responsiveness to industry standards, customised to enterprise needs and providing opportunities for individual learning have predominated in the findings on curriculum processes reported as realising industry and enterprise goals.

Curriculum arrangements

Curriculum arrangements refer to organisational factors. Industry and teacher representatives claim that CBT has resulted in the availability of additional trainees. A teacher respondent states in each case that that CBT has brought about greater choice in providers and the training itself takes less time. Teachers and industry respondents claim that enterprises' goals must be being met because of their continued use of their provisions. So in sum, choice in provision, additional trainees and reduced time are proposed as means by which the organisation of curriculum is reported as having met industry and enterprise goals.

The responses from Industry/enterprise respondents are associated with meeting the skill needs of enterprises and having arrangements in place to customise and also be responsive to enterprises.

Failure of CBT to realise enterprise and industry goals

The most overwhelming response, for both sections, was from students, in particular, but also from teachers and industry respondents that there is little or no evidence that CBT has met the industry and enterprise goals. These responses are from, in order of magnitude from Metals students, Hospitality students, Metals teachers, Hospitality teachers and a Metals industry representative. Unfortunately, these respondents failed to furnish any evidence to support their claims. Evidence claiming CBT has failed to meet enterprise and industry goals is associated with (i) employer dissatisfaction; (ii) employer confusion; diversity of needs; (iii) lack of relevance; (iv) difficulty of courses; and (v) theoretical knowledge not being learnt.

In sum, the findings here suggest evidence that the current vocational arrangements are meeting enterprises needs in terms of the skills they require. Knowing about and being able to meet enterprises' needs and those of individuals are held as some of the most significant reasons why CBT is to be valued. But it is uncertain whether this satisfaction stems from CBT itself or associated initiatives. Interactions with enterprises and individualised curriculum arrangements are not directly a product of CBT. For instance, there is no reference to enterprise specific competencies being seen as the means for enterprise outcomes. Rather, it appears, as stated elsewhere that the kinds of experiences provided in vocational education currently are likely to develop skilfulness are not attributable to CBT.

Exhibition 4.15a Needs of industry and enterprise are being met

I think the current skills training meets my needs in most cases, but today they (apprentices) seem less responsible than in my day. Some are really good if you direct them - but I wouldn't be game to send some of them on a job by themselves. They can weld and do things OK, but they can't think for themselves or make decisions. (420) – enterprise view

They are being met, in terms of being able to organise what they want and how they want it, especially with private providers. We find with our training in the workplace that the employer has more input into what is being taught, and this makes them happy, and the trainees happy. They're not learning a whole lot of irrelevant stuff. 422 – enterprise (customisation)

Where a complimentary relationship can be found between players, industry and enterprise needs can be met. (920)

Response from industry has been well received in the training of new apprentices and some of the awards and achievement of students to gain higher positions within their companies, eg.

Formed a responsible position, drawing office CAD CAM (906)

Exhibition 4.15b Goals of enterprises and industry are not being met

They are not being met. I have employers ringing me asking what Js and Ms stand for – asking me why when they send an employee to college why they are not able to interpret the results they get back. (432).

Economically they seem to be being met (i.e. less time for apprentices to be away from work). However, statistics that electrical accidents and fatalities have increased markedly - 1988, 423 accidents and 6 dead, 1998, 948 accidents and 22 dead. Employers' feedback seems to be that students can't apply what they are supposed to have learnt (434)

Maybe the needs of industry generally and at the low end are being met, but the needs of the individual who wants a career in cookery are not. The training system trains to a minimum standard which is well below the requirements of the high end of the market. So trainees are restricted in their career path. (923)

Depends on the company - the autonomy given to the teacher, the support offered by management and union, their belief in the power of learning to assist workplace change. The introduction of the National Training Framework is evidence that enterprise needs have not been met sufficiently. (920)

Not much to do with CBT. Can we meet the needs of industry as industry changes - this can only be determined on an individual basis and no system will satisfy all. (912).

Not sure that there is any evidence. The changes in the automotive industry have been important. For example, the range of work we do has changed over the years, we don't overhaul fuel pumps or automatic transmissions because this is done by specialist workshops. But all apprentices do these things at trade school.(902)

4.5.7   Evidence of CBT improving competitiveness

A goal for vocational education over the last decade has been to make industry (and more recently enterprises) more competitive. In particular, CBT was proposed as a means to secure this outcome as part of the move towards securing a skilled Australia, a clever country and for enterprises here to become both import competing and successful with exporting goods and services. In order to gain insights into the efficacy of CBT in achieving these goals, industry, enterprise respondents and teachers were asked, "What evidence is there that changed training practices are developing skills that improve competitiveness?" (OC6) It is also anticipated that this data will furnish additional evidence about how CBT is meeting enterprise needs.

Table 4.16 (Appendix 1) presents a synthesis of the responses to this item. The table is divided into two sections. The top section presents categories of responses indicating evidence that competitiveness has improved under CBT. The lower section presents responses claiming that competitiveness has not improved under CBT.

As with Table 4.15, responses to CBT contributing to competitiveness are divided into three subcategories of evidence: (i) outcomes; (ii) curriculum process; and (iii) curriculum arrangements. The factors indicating CBT has not contributed are less readily categorised.

CBT's contribution to achieving competitiveness

(i)   <u>outcomes</u>

Evidence in the form of outcomes claiming enterprise needs are being met include, multi-skilling, student competence and enhanced relevance. In this section, the most common response is that enterprise needs have been met in ways that facilitates their competitiveness. Both teachers and enterprise/industry respondents provided these responses. Statements claiming that multi-skilling, enhanced relevance and student competence had contributed to enterprise competitiveness were from teachers. So it is claimed through these statements, that individuals' abilities such as multi-skilling, as well as curriculum processes than met enterprise needs were held to result in greater competitiveness. The detail of responses here suggests that as well as addressing the needs of enterprises through learning processes, that taking account of particular enterprise needs resulted in enhanced relevance in the outcomes.

(ii)   <u>curriculum processes</u>

Curriculum processes here refer to evidence of how the curriculum processes under CBT have achieved competitiveness. It is proposed that work-based learning and improved access to training have assisted enterprises' competitiveness. These factors again focus on the ability for curriculum provisions to be relevant to enterprise needs. So, again, the issue of curriculum processes that focus on relevance in terms of particular enterprise needs are central to views on how CBT has been effective.

(iii)   <u>curriculum arrangements</u>

Curriculum arrangements refer to organisational factors. Here, two sets of factors are advanced; choice in provider and repeat business. It is proposed that the market-based provisions have been useful in enhancing competitiveness and that evidence of the efficacy of these arrangements is found in enterprises continuing to employ apprentices and send them to the providers.

So, in sum, again it seems that the ability of training arrangements to meet enterprise needs in terms of curriculum provisions and student learning is the key means by which competitiveness has been realised.

Evidence that competitiveness has not been met
Only two responses here reflect more than single respondent concerns. Firstly, it is claimed that there is little or no evidence to make connections between CBT and improved competition. This view is stated mainly by teachers, although one industry respondent also advanced this view. Secondly, beyond this are claims that because enterprise needs are so different there is little prospect of being able to meet everyone's needs. Other responses refer to training not being important (e.g. individuals' attitudes more important than training). Evidence was furnished that the inadequacies of the teaching and assessment processes under CBT can be linked to a decline in standards of occupational health and safety.

It is claimed, therefore, that there is not sufficient evidence to advance claims that CBT has aided competitiveness. More precise claims of evidence relate to the diversity of needs and the decline in work safety.

In sum, in terms of outcomes, the most common response is that enterprise needs have been met in ways that facilitates their competitiveness. It is claimed that multi-skilling, enhanced relevance and student competence had contributed to enterprise competitiveness. The curriculum processes that aided competitiveness have been categorised as work-based learning and improved access to training. These factors again focus on the ability of curriculum provisions to be relevant to enterprise needs. The relevance of curriculum process in terms of particular enterprise needs is central to views on the effectiveness of CBT in realising competitiveness. It is also proposed that the market-based provisions have been useful in enhancing competitiveness and that evidence of the efficacy of these arrangements is founded in enterprises continuing to employ apprentices and send them to the providers. Conversely, it is claimed that little or no evidence exists to link CBT with improved competition. More specifically, it is claimed that because enterprise needs are so different there is little prospect of it being able to meet those needs. Others claim that in terms of competitiveness, individuals' attitudes are more important than training. Also, the inadequacies of the teaching and assessment processes under in CBT were linked to a decline in workplace safety.

The clearest finding here is that meeting enterprise needs in ways which furnish workers who are multi-skilled in that environment are prized most. Interactions that secure these

arrangements are also valued. The very specific focus on competitiveness here is one centred on enterprise need, rather than at the personal or industry level.

4.5.8   Higher order outcomes for students through current curriculum practice

One of the oft-stated goals for the reform of the VET system is to make the Australian workforce more responsive and adaptable; a smart workforce. These requirements are based on individuals having the kinds of knowledge that will permit them to be adaptable and flexible. Consequently, determining how CBT has furnished the kinds of experiences likely to develop the knowledge required for adaptability is a key indicators. Extensive research within cognitive psychology suggests that the desired outcomes are dependent upon the degree by which learners have been able to engage in combinations of routine and, in particular non-routine problem solving. Experiences in the enacted curriculum that provide opportunities for independent and collaborative problem-solving are valued particularly for this purpose. As a consequence, Industry, Enterprise and teacher respondents were asked "In what ways are trainees able to solve problems on their own or collaboratively? (OK15). The data presented in Table 4.17 (Appendix 1) presents data categorised the responses into responses referring to factors associated with process and then those associated with outcome. As with other tables, these factors are listed in the left column, next to this the responses pertaining to Enterprise/Industry, the next Teachers and on the right a column that provides instances of the factors.

Exhibition 4.17a – Evidence of higher order outcomes being achieved

They can solve problems but not necessarily because of CBT, because CBT was usually broken down into its component parts, so you did quality, communication, OH&S, then you did mechanical components, engineering science or whatever. You could wrap all those up and put them into a project and actually design those outcomes … in essence can't be assessed unless they're assessed through that holistic approach. When you take training from a holistic point of view, you just can't assess individual pieces of information. You have to assess the whole activity. The trainee has to have the underpinning knowledge to be able to perform the task or skill. The technical understanding has to be there, and he has to have demonstrated the technical understanding by the fact that he's done the job well. (429) – Metals industry respondent

There is now a provision in courses for students to collaborate or co-operate with one another. But given the atomistic nature of CBT it's more oriented towards individual skills. (425)

4.5.9 Processes of independent and collaborative problem-solving

The responses to how processes of collaborative and independent problem solving have been accommodated in the curriculum provisions are closely associated to the 'enacted' and 'experienced curriculum'. The 'enacted curriculum' refers to instructional practice and approach of the teachers, whereas the implementation refers to both 'enacted' and 'experienced curriculum' through informal experiences, learning in the workplace and students' dispositions towards their engagement in those activities.

Instructional approaches and strategies (Enacted curriculum)

The approaches to instruction used by teachers comprise the process responses to the development of higher order kinds of knowledge in students. The opportunity for problem-solving in group activities, project work, self-managed instruction, interactions and being taught problem-solving strategies are proposed as the means for developing knowledge through problem-solving activities. Below, detail is provided of how these activities press learners into goal-directed activities both in groups and individually. It is the kinds of thinking and acting proposed here which are believed to be central to developing the knowledge required for adaptability. In offering criticisms, subjects again focussed on the instructional approaches suggesting that rote learning (not normally associated with development of higher order procedures) as well there being too much support for individual problem-solving to be effective. It was also claimed that there were not enough resources for these problem-solving activities to continue and that learners were isolated thereby inhibiting their ability to work collaboratively.

Implementation – (Enacted and experienced curriculum)

Other factors associated with problem-solving by students were associated with implementation referring to both the 'enacted' and 'experienced curriculum' through informal experiences, learning in the workplace and students' dispositions. The responses here suggest that unintended process during instruction and workplace experiences are sources of students' engagement in problem solving. In addition, students' dispositions will determine how they engage in these knowledge-building processes.

Outcomes of problem-solving

The responses in Table 4.16 to outcomes are readily categorisable into those claiming negative outcomes and those claiming evidence of improved performance. The former was more frequent than the latter. However, in overall terms, across the table the evidence for positive outcomes was far stronger.

Negative outcomes or no change

Those reporting negative outcomes refer to 'no change', 'limited ability to problem-solve', 'got worse', 'no evidence', and 'outcomes too narrow'. These statements can be further divided into those that suggest there is no change and those claiming that the changes that have occurred are not desirable. The only statements of evidence are those that claim that an ability to problem-solve has not been developed and where it exists it is quite weak.

Evidence of positive outcomes

Two statements of positive outcomes are available, both from industry respondents who claim that now learners do not seem to need as much help and that they are better able to work collaboratively.

In sum, the strongest body of evidence is that a series of instructional activities and unintended processes and factors provide a basis for students to engage in problem-solving activities of the kind that are likely to secure the forms of knowledge which underpin adaptability. A lesser body of views, mostly without statements of evidence, suggest limited evidence of the positive outcomes, although contradicting this, some evidence is advanced by industry respondents. 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. 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.

Having taken account of the responses of industry and teachers, Table 4.18 (Appendix 1) presents the responses from students to the same question. The students' responses in Table 4.18 are presented in the same way as those in Table 4.17. The process factors are presented and discussed before the outcomes.

Processes of independent and collaborative problem-solving

In ways similar to the industry/enterprises and teacher responses, students referred to activities within the enacted curriculum comprising engagement in the course and instructional strategies as well as those that incorporated experiences that were not intended as part of the enacted curriculum.

(i) Instructional approaches and engaging in the course (Enacted curriculum*)*

Two clusters of factors are categorisable here. Firstly, those referring to instruction (group-problem-solving, self-managed learning, guidance by experts) and secondly, those referring to the experiences provided through engagement in course (e.g. experiences, activities,

procedures). These then comprise experiences that pressed learners into problem solving as part of the enacted curriculum

(ii) <u>Implementation</u> – (Enacted and experienced curriculum)
There were also reported opportunities that were not directly a part of the enactment of what was intended. These opportunities arose when these individuals were engaged in workplace activities, just by learners undertaking tasks, their approaches to tasks and the application of what they had learnt in the college to a workplace situation. Much of these opportunities can be seen as what the students learnt as a product of engagement in the enacted curriculum – the 'experienced curriculum'.

Outcomes of problem-solving
The responses in Table 4.17 to outcomes are readily categorisable into those claiming negative outcomes and those claiming evidence of improved performance. Again, as with the responses in Table 4.16, the pattern here is a division into between those stating there is no evidence to those calling upon quite specific evidence to support their claims that there are positive outcomes.

(i) <u>Negative outcomes or no change</u>
Those reporting negative outcomes commonly state that that processes of CBT failed to engender independent and collaborative thinking, yet fail to furnish evidence. Those that do, refer to inadequate preparation and that preparation being too narrow and impractical. Other responses refer to lack of opportunity.

(ii) <u>Evidence of positive outcomes</u>
Two kinds of statements of positive outcomes are evident. These are (i) those claiming how knowledge can be acquired as a result of experiences in the course and, (ii) a strong set of responses stating that understanding had been developed as a result of participation in training programs. So, it seems that these subjects were able to make links with outcomes of the kind that permit engagement in independent and group problem solving.

In sum, students claim that the kinds of learning experiences they access as part of the curriculum provide the kind of opportunities required to engage in higher order thinking. These include, group-problem-solving, self-managed learning and guidance by experts. Also, related experiences and activities such as those in the workplace are seen to assist with this process. The significant point here is that most of the factors are not central to CBT. Instead,

they reflect practice that was either common prior to CBT or are an indirect outcome of the implementation of CBT.

4.5.10   Evidence of transfer

Associated with the goals of adaptability and flexibility is the ability to transfer knowledge from one circumstance to another. This is fundamental to the worth of any educational initiative. If individuals lack the ability to transfer they will have difficulty dealing with new situations and applying what they learnt in different circumstances. Furthermore, one of the transfer acts many learning in vocational education has to secure is that from the classroom to the workplace. Consequently, it is important to understand the degree by which vocational education curriculum provisions can secure transfer, firstly from the circumstances where knowledge is learnt to target circumstances (e.g. classroom to the workplace), but also from situation to situation in vocational practice.

Consequently, all subjects were asked about the ability of students, prepared under the current CBT arrangements within vocational education, to transfer knowledge. They were asked "What evidence is there that trainees are able to transfer knowledge and skills to new situations" (OK18). Tables 4.19 and 4.20 (both in Appendix 1) present syntheses of the data. Table 4.19 presents the responses from Enterprise/Industry informants whereas Table 4.20 provides those of students. The format is similar for both tables. They are divided into sections reporting data presenting evidence that transfer occurs and ones that offers responses contesting transfer.

In Table 4.19, the evidence supporting the transfer of knowledge is of two kinds; outcomes and process factors.

(i) Evidence of transfer - outcomes

Three kinds of transfer are reported here; 'across workplaces', adaptation to innovations and 'transferring basic skills across settings'. Evidence is provided of students being able to apply their knowledge to different workplace settings; being able to adapt to new technology and demands in the workplace; and having the ability to apply basic principles in different ways in different contexts. 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. However, this may well be a part of employment of this industry more than any other factor,.

(ii) Evidence of transfer – process

Only two individuals' responses here report that as work practice has become more standard, the transfer task is eased. The other process factor refers to the quality of individuals' determining transfer.

(iii) Contesting transfer

Four factors are offered as evidence that current VET provisions do not assist transfer. These are about goals for transfer, an assessment issue premised on individual factors and the lack of evidence. Metals Enterprise/Industry Representatives furnish much of this evidence. It is claimed that as work performance is contextualised. Hence, expectations about transfer may be unreasonable. Individual factors are mentioned here also as a factor in transfer. A Metals respondent raises the view that transfer is an issue of assessment.

The evidence here suggests that transfer does occur, albeit reported more in the Hospitality sector than elsewhere. However, the fact that students are able to work across different kinds of workplaces is indicative of their ability to transfer knowledge. Somehow students are learning knowledge that is transferable. This could be associated with the activities and opportunities provided across Hospitality enterprises as a form of enacted curriculum. So it remains for further deliberation before suggesting whether on its own CBT does or does not facilitate transfer.

> CBT has nothing to do with transferring knowledge and skill. CBT is just an assessment process, not a learning strategy. Skills will always be demonstrated under specific conditions and these conditions may or may not circumscribe the transferability of that skill, but it depends on a lot more than whether the training is competency-based or not. (429)

The responses from students are found in Table 4.20, which has the same set of headings as those in the previous table. In Table 4.20, the evidence supporting the transfer of knowledge is of two kinds; outcomes and process factors. There are a number of subjects who claimed transfer to be occurring, yet offered no evidence.

(iv)Evidence of transfer - outcomes

There are three categories of data suggesting transfer outcomes are being achieved. Firstly, the ability to apply basic skills and principles across different workplaces, something supported more by Hospitality students than others. Secondly, transferring knowledge learnt in the classroom to the workplace. Thirdly, developing further skills have been realised as

building on what has previously been learnt. So the evidence about transfer is provided by individuals who have themselves engaged in the transfer tasks.

(v) Evidence of transfer – process

The process factors are proposed by the students as being twofold; having understanding and learning in the workplace. Firstly, it is held that transfer is underpinned by understanding and that understanding has been secured through engagement in vocational education programs. That is transfer has been achieved as an outcome of participation in training programs. Three respondents also suggest that workplace learning experiences assist the transfer of knowledge. This data may well relate to the application of the knowledge in another circumstance.

(vi) Contesting transfer

By far the most common response was that there is no evidence to suggest that transfer has occurred. This view was held particularly frequently within the Metals sector. Again, the lack of evidence is disappointing here. The other statements of evidence contesting transfer, relates to the quality of training and statements questioning the relevance of what has been learnt during the program. So again the dilemma when dealing with these data is of determining between statements without instances or evidence against those offering some statements of evidence of transfer. Certainly, there is a good deal of consistency between the findings in Tables 4.19 and 4.20 particularly in the areas of identifying where transfer is occurring. The students have advanced that understanding and transfer has been gained through the vocational education programs.

In sum, transfer across workplaces, adapting to innovations and transferring basic skills across settings is provided as evidence of the efficacy of the CBT curriculum in securing transfer. 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. However, this may well be a part of employment of this industry more than any other factor. As it is claimed that work performance is contextualised, simple propositions about transfer need to be considered cautiously. Hence, high expectations about transfer between the school room and the workplace may be unreasonable. Individual factors are mentioned here also as factor in the transfer of knowledge.

Students claim the ability to apply basic skills and principles across different workplaces are evidence of transfer outcome. 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. These outcomes are all about transfer as a product of having to engage in transfer tasks. 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 suggested that workplace learning experiences assist the transfer of knowledge. Statements of evidence contesting transfer, relate to the quality of training and those questioning the relevance of what has been learnt during these programs.

In all, there is agreement between the views of teachers and students in particular that it is the kinds of experiences that students engage in that are likely to determine transfer. There are experiences which are included as part of the 'enacted curriculum' (group problem-solving, independent work, project work, expert guidance) and there are others that are part of the experienced curriculum which are often associated with work-based experiences. So it seems that the activities within the instructional process, that teachers organise, and the 'experienced curriculum' which comprises the totality of the curriculum experience are key determinants in the development of transferable knowledge.

4.6   Alternatives

In this final section, data is presented and discussed which suggests alternatives to the current curriculum practices within VET. The purpose of seeking these alternatives is two-fold. Firstly, to identify patterns of responses which are reactions to the current arrangements and, secondly, to fashion views about approaches for the future. Two area of interest are discussed here; (i) alternatives to instruction and (ii) curriculum development processes.

4.6.1 Alternative approaches to instruction

In order to determine how best curriculum practice in the area of instruction should proceed, teachers and enterprises and industry respondents were asked, "How would you change instruction to best develop student learning? The responses are presented in Table 4.21 (Appendix 1).

The responses that are provided most frequently refer to the provision of experiences for students that will help them learn. These include understanding the needs of students, selecting instructional strategies most appropriate to their needs and what has to be taught and also the provision interactive and workplace experiences. These responses are of a similar kind to those advanced in the sections above about securing adaptability and transfer. Only four respondents suggested there was no need for change. Responses categorisable under 'use of appropriate strategies' refer to selection of strategies most suitable, the need for both 'knowledge that' and 'knowledge how' to be addressed. The approaches to instruction

suggested here really emphasised experiences that engage the learner in goal-directed activities (problem-solving, practical activities, project work etc) – the 'experienced curriculum'. Therefore, enhanced engagement and activities are proposed by the subjects as means to improve instruction. These suggestions are synonymous with the kinds of experiences and guidance that is suggested in the literature for developing knowledge required for both routine and non-routine tasks. They are also consistent with the data earlier that identified factors associated with developing robust knowledge. Within the data are requests to change from particularly a reliance on modularised materials and self-paced approaches that are bereft of adequate support from teachers. The second most frequent category of responses proposes a shift to place the students at the centre of the curriculum deliberations. Assumptions about students' learning are the consistent theme here, not what they wish to learn. In placing the focus of curriculum deliberations on industry and enterprise and seeking efficacy in provisions, perhaps the needs of the key client group has been discarded.

So there is strong focus on a shift to process concerns in these responses. The responses here favour alternatives that engage students in active learning tasks, with arrangements for both individuals and peer-based activities, supported, however, by adequate teacher input. These are consistent with what was proposed in earlier sections dealing with the development of robust knowledge.

In sum, the responses here suggest that the quality of curriculum implementation, more than statements of outcomes, offer the basis for improved provisions within vocational education. Taking the view that the core of CBT is associated with the use of prescribed outcomes and instructional, assessment and accreditation processes that are shaped by those outcomes, it is proposed that this focus is insufficient. Rather, the subjects emphasise processes of educational practice as a means to best realise quality educational outcomes. Understanding students' needs, selecting the most appropriate strategies, the provisions of activities that engage learners in problem-solving tasks and the provision of guidance by teachers are the proposed as being central to learning the knowledge required for the workplace. Therefore, there has been consistency in a range of responses concerned with process considerations that are likely to secure the outcomes sought by industry, enterprises and students. It is these outcomes which are advanced as key policy goals. However, contrary to a policy framework that privileges outcomes, the response here is concerned with processes.

4.6.2   Alternate approaches to curriculum development

Alternative approaches to the development of curriculum were also elicited from teachers and enterprise and industry respondents. They were asked, "How should curriculum be best developed for your industry/enterprise? The responses are presented and discussed below. Table 4.22 (Appendix 1). The alternatives suggested by the respondents are in the left column. The next two columns identify respondents from enterprise and industry in the first and teachers in the second. These columns are each divided into those representing Hospitality and Metals. The column on the right provides instances of the subjects' responses.

The responses suggest wider roles for teachers, a more collaborative approach to curriculum development, and a focus upon enterprise provisions. The responses emphasise involvement by a number of different kinds of 'stakeholders'. However, for a considerable number of the respondents this involvement was to be collaborative. Hence, the analysis suggests that the 'top-down' approach has not been sustained. Rather, it seems that the 'development of enterprises needs', the determination of industry needs' are to be associated with a broader involvement by teachers. The proposed process is one premised on collaboration among a number of interests to determine how the specific needs of enterprises can be represented through intents and needs which have some durability across the industry sector(s) where the knowledge is likely to be applied. In addition, consideration for securing this knowledge, which can be provided best by teachers is necessary in order to consider how the goals and needs of students can best be mediated in curriculum development processes. So the development of the 'intended curriculum' cannot be the sole domain of just one voice. It needs to be outcomes of a collaborative process that takes account of national industry needs, the particular requirements of enterprises where vocational practice is enacted and those of the learners who participate in these courses. There is also the need for consideration of the development of knowledge which is robust enough to transfer within the industry context, be adaptable to enterprise needs and fulfil individuals' vocational aspirations.

The data on the implementation curriculum is supportive of what is advocated in previous sections. That is, there has to be a clear consideration for what is implemented in terms of teacher involvement, adequate resourcing and understanding students needs. This is quite different to the view of enacting curriculum premised on pre-specified curriculum intents determined by industry. Instead what is being proposed is one concerned with determining students needs (researching) and developing the most appropriate responses (developing and modifying). It will also likely demand a wider range of teachers skills than those required under the CBT model which valued mere implementation over other concerns.

Summary

In sum, the data presented in this chapter suggests that CBT as a model of curriculum development has had in some ways profound effects upon the 'intended' and 'enacted' curriculum, whereas in other areas its impact has been quite minimal. However, there remains the problem of distinguishing between CBT itself and the broader CBT movement, and their respective influence upon curriculum. Taking the delineation of CBT and the broader CBT movement that was advanced in Chapter 2, the following are summary statements drawn from the findings in this chapter.

4.7   Separating CBT from the CBT movement

The core elements of CBT as a model of curriculum are the identification of competency statements, their linkage to curriculum processes and, in particular, manifestation in statements within curriculum documents about the outcomes of engagement in vocational education programs. This includes determining need from industry/enterprises for the 'intended curriculum' and the accreditation processes which are used in an attempt to manage the 'enacted curriculum'. The broader CBT movement includes the evolving platform of reforms with which CBT has become associated. These included the drive towards self-pacing and resource-based approaches and the marketisation of VET. What is repeated throughout the discussion on the analysis of the data in this chapter is that in many ways it was elements of the broader CBT agenda and even factors pre-dating CBT that continue to secure the kinds of outcomes desired for an adaptable workforce. These largely include the kinds of experiences students of vocational education have in the classroom and workplace, the interactions between providers and enterprises and the enhanced access brought about through a more open VET market. Of those factors central to CBT, the accreditation processes can be seen to have impacted on curriculum practice in ways such as enhancements to teachers' currency and the press for them to be responsive to external needs. There is little evidence, however, that having tightly and highly prescriptive outcomes enhanced curriculum practice, in either identifying enterprise needs, guiding instruction or furnishing valid assessment. It did however, see greater uniformity with some aspects of teacher practice, in particular assessment.

4.7.1 Transforming teachers' practice

CBT has transformed some parts of teachers' practice. In particular, those components that are public or have an interface with external agencies or institutions are most likely to have been transformed. So for instance, the range of activities that teachers were permitted to engage in were reduced initially, thereby curtailing key parts of their practice (e.g. determining curriculum intents and content). Also mandated assessment practices and

accreditation demands placed external pressures on teachers. Certainly, as part of the broader CBT movement, the moves towards variants of the self-paced approach to vocational education were enacted which changed the nature of the 'enacted curriculum'. However, other components of teachers' work remain relatively unaffected. In particular, the kinds of activities in Hospitality courses which engaged students in group activities which are similar to those they would encounter in the workplace.

4.7.2   Links between providers and enterprises

Recent changes to the context in which VET is enacted which include the shift to an enterprise-focus and the marketisation of VET has seen greater interactions between provider and enterprises. The shift from an internal college-based approach to determining intents and content was initially to an external 'industry-based' focus. But now the shift is to enterprise needs, with increased interactions between providers and enterprises. It seems that all client groups (e.g. students, enterprises, and industry) have welcomed these interactions and their outcomes, when they are reported as occurring. These intentions seem to provide clearer goals and priorities for VET programs as well as maintaining the relevance of provisions. However, these interactions make demands on both enterprises and providers in terms of the determination of particular intents and developing an intimate knowledge of the enterprises' requirements.

4.7.3   Uniformity in provision

Overall, it seems that uniformity in terms of the outcomes of vocational education programs, was an unlikely goal that has not been realised. Differences in antecedent circumstances, the lack of a comprehensive process of professional development for teachers, the array of situational factors in each setting and the differing needs of enterprises, rendered uniformity problematic and unachievable. Of the areas of curriculum practice, it seems that assessment practice is the one where uniformity was realised in adherence to assessment processes. However, even here, the lack of moderation processes or mechanisms aimed at securing reliability were absent. Indeed, it was stated that the reduced interactions between TAFE providers arising from competition policy have eroded the possibility of reliability.

4.7.4   Improved competitiveness

Central to improved competitiveness was held to be improved access to VET programs, work-based components, and more recently greater interactions with enterprises and determination of their need. Significantly, these are held to be the product of curriculum processes being transformed by the marketisation of VET, rather than CBT itself. Although it is fair to note that the shift to external sources of intents and content was a product of CBT, much of the

reported bases for VET making enterprises more competitive are associated with market-based provisions.

4.7.5   Adaptability and transfer

Central to the governmental concerns, which prompted the introduction of CBT, was the need for adaptability and skilfulness in the Australian workforce. What the data here has shown is that the most likely basis for these to be secured can be found in the kinds of experiences that students access in both the classroom and the workplace. 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 skilfulness. However, it may well be the combination that is at the core of the utility of these arrangements. 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, 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.

Again, of these experiences, many were in place prior to CBT. Others, for example the shift to self-pacing, can be associated with the broader CBT movement. However, there is little here to suggests that CBT itself contributes to adaptability and transfer, 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.

In Chapter 7 these findings are briefly revisited and from them recommendations for progress advanced. It seems that some combination of means that value the external input into intents and content, but also value an approach which emphasises the processes of enacting curriculum to provide experiences that can secure the outcomes required by enterprises, industry and individuals is required.