COMPETENCY-BASED TRAINING AND BEYOND: RESEARCH AND PRACTICE IN VET

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The purpose of this paper is to explore some implications for policy and practice of findings from a national research project evaluating the contribution of competency-based training (CBT) to outcomes in vocational education and training (VET). This exploration will include analysis of the co-implications of research and practice (eg. the role of practitioner-researchers).

The argument is made that CBT, contrary to its image in the public policy literature, is not a singular and universal model of VET. Rather it embeds a series of radically different decisions or options with regard to notions of competency and the use of competencies or competency standards. These decisions or options, once enacted, give rise to transformed models of VET. The further argument is made that these models need not be seen as alternatives. Rather, it appears that they interact - support and/or challenge one another, as well as support and/or challenge CBT. The conclusion is drawn that while all of these models have a place in the process of competence development, as well as their particular strengths and weaknesses, models that maintain the tension between a focus on the outcomes of education and training and a focus on processes of educating and training, rather than resolve this tension in favour of outcomes, are most appropriate in VET.

Introduction

Competency-based training (CBT) is now firmly established within vocational education and training (VET) in Australia. It is characterised by pre-specified training and assessment outcomes, together with their expression in competency-based standards on which training programs are based. Yet, Smith (1997, p.69) reported that, despite the extensive use of CBT in courses of study, little empirical research on its deployment in industry and individual enterprises, or its consequences for the many stakeholders involved, had been undertaken in Australia prior to this time. Harris (1996) also noted an increasing need for evaluative studies that went beyond investigating the degree to which competency-based programs were successful in achieving their stated aims and objectives.

In 1998, therefore, we undertook a research project, funded through the National Centre for Vocational Education Research, entitled 'Evaluating the contribution of competency-based training'. We wanted to investigate the extent to which competency-based training (CBT) was meeting the requirements of various stakeholders, for example, industry, employers, training personnel and workers, in the many diverse enterprises existing throughout Australia. We also wanted to understand its contribution to knowledge-making and to vocational learning and working life. To what extent was training becoming standardised within particular industries and what types of knowledge were being privileged and marginalised within such training? What forms of pedagogy were being employed? And to what extent were training personnel engaged in knowledge-
making themselves – modifying CBT in the interests of workers, industry and enterprises? Thus, to what extent was 'research' being incorporated into the work of VET practitioners and of what did this consist?

The study was designed in two main parts: an extensive telephone survey of training managers throughout Australia and eight detailed case-studies of competency-based training in practice. In both parts, the aim was to study enterprises representing as great a diversity as possible in relation to size, location and industry sector.

In this paper, firstly, the data collection and evaluation methods employed in the study are briefly outlined. This is then followed by (i) illustrations from the telephone interview responses of ways in which training personnel appeared to be diverging from and/or contesting the standard CBT curriculum, and (ii) detailed accounts of the work of VET practitioners in specific enterprises. Lastly some implications for policy and the education of VET practitioners are explored. It is argued that, while standardisation of curriculum and pedagogy through CBT is considerable across all industry sectors, in some enterprises, models which are quite different from the 'standard' form are being developed and employed. This development involves training personnel in becoming 'practitioner-researchers', engaging in 'action research' within their enterprises (albeit often informally) and in using CBT standards in a variety of ways. Opportunities to engage in such work, however, are limited and dependent on a number of factors, including the nature of the existing industry culture and the support and encouragement of key enterprise personnel, given the role of training in promoting an enterprise vision.

Data collection and methods
For the telephone survey, one hundred and ninety-five (195) company training managers (or equivalent personnel) were each interviewed by telephone for approximately twenty minutes. The companies contacted were located in both metropolitan and regional areas of Australia and were selected largely from the four major industry sectors of Manufacturing, Services, Construction and Agriculture, Forestry and Fishing. Companies varied according to size (small – 1-19 employees; medium – 20–99 employees; large – over 99 employees) and a balanced sampling by size of establishment, location, State/Territory and industry was attempted and, for the most part, achieved. Almost all companies sampled had been using competency-based training for at least one year. Information and opinions were gathered using an interview protocol consisting of open-ended questions relating to the purposes of CBT, its uses and effectiveness in each enterprise, any issues arising from the training and advantages and disadvantages associated with its adoption.

For each of the eight case-studies, data gathering involved observation of the delivery of a module, or part of a training package, over a number of sessions, and in-depth, semi-structured interviews with six, key enterprise personnel. These personnel usually included the company manager, training manager, supervisor, instructor/trainer and trainees. An observation schedule was developed, focusing on instructors' practices in 'delivering' the module, and on trainees' responses to the training program and its apparent outcomes in the sessions observed. Interviews focused on the nature of program development within the enterprise, by whom such development was undertaken, pedagogical practices and the relationships between competency standards, knowledge-making, learning and other program outcomes.
The telephone interviews: Practitioner-researchers diverging from the standard

Among the training managers interviewed, in diverse enterprises across all industry sectors, it appeared that competency-based curriculum was recognised, with approval, as a 'hands-on do program' in which 'performance on the job says it all'. Thus the development of procedural knowledge and specific skills were commonly emphasised, leading to up-skilling, multi-skilling and cross-skilling, for increasing worker and enterprise adaptability in the face of changing workplace realities.

Some training managers, however, were clearly concerned about this trend, the outcome of which was to privilege technical-rational, operational knowledge. Typical comments were as follows: '(CBT is) useful for skills development but not always effective when attitudinal/behavioural change is required, for example, a cultural shift'. '(With CBT) there is only short contact' and little 'support for people working through ... changes'. 'Some competencies in Human Services are difficult to quantify (for example, attitudes, ethics, values) so (CBT) gets put in the "too hard basket"'. 'To be a nurse you have to like people and this is something that you can't measure'. 'There is a danger that CBT will throw out the values underpinning training ... With CBT this often seems to be lacking'.

That the predominant discourse of CBT tends to 'atomise' aspects of work (Usher & Edwards 1994, p.102), and thus disregards the framing of tasks within the culture of the workplace, was also seen as a difficulty. 'Groups of competencies need to be linked effectively to bring about change. There is often a tendency to look at competencies as individual actions'. 'It is possible to get so tied up in competencies that you don't see the big picture of someone's job ... and miss on the cultural things'. Indeed, it was claimed that these 'cultural things' often appeared to be rendered invisible in a competency regime.

The concerns expressed above emerged particularly from occupational areas such as Community Services and Health, Municipal Services, Education and Training, and Architecture, all of which tended to espouse a 'professional' model of skill that includes problem-solving, reasoning and exercising judgement in the context of broad requirements (Bailey & Merritt 1995). In Health Services, for example, it was said that training is to produce 'assertive, informed carers' and, in Community Services, that philosophical standards had been developed 'to ensure that the moral, the ethical and the cultural are not forgotten' – 'to put back the bits that were missing'. Training managers from these areas were also concerned about the personal, as well as the professional, development of their staff that 'reflects in how everyone approaches (their) work'.

Such concerns were not exclusive to the above areas. In the logging industry, a training manager commented: 'CBT training focuses on machines and production to the detriment of a more comprehensive environmental care training'. Indeed, a number of training managers in Manufacturing companies expressed concern that leadership training, personal development and the 'soft', people skills (the 'process' skills) were considered unimportant compared with technical proficiency. Moreover, of management training, one person commented: 'How can you measure something like the ability to develop policies?' Thus, a more holistic, process-oriented curriculum was seen to be valuable in many areas, to supplement the 'bits that were missing', and practitioners were engaged in contesting and modifying CBT in relation to the requirements of the industry, as recognised within the culture.
In relation to pedagogy, many training managers considered its standardisation through CBT as necessary to maintain the quality of training. 'Standardises classes and instructors all (the) same standard and (the) same approach used'. Such standardisation was seen to be particularly helpful to inexperienced trainers and trainees. 'Good for presenters/lecturers who are not very experienced'. 'Very specific/detailed'. 'Clearly stated objectives'. However, other training managers thought CBT to be successful only if it could rely on excellent training that employed many forms of pedagogy. 'CBT can limit the direction of the training ... It doesn’t allow for other avenues'. As reported elsewhere (Smith et al 1997), self-paced learning, often associated with CBT, was thought to be 'More appropriate to adult learners who (can) self-direct their learning, than to school leavers who require more specific direction and mentoring', or for those deemed 'not well motivated'. 'The implementation is critical. Needs high quality instruction' or '... a very knowledgeable person' who goes beyond the competencies specified. 'Making it all real and approachable, without getting in the way of the real stuff' was thought to be the key to good training. On a number of occasions, 'experts in the field' who engaged in coaching, were also mentioned as vital to CBT's success. 'When a supervisor is enthusiastic, this can make all the difference'.

O’Donell and Garavan (1997, p.133) describe the concept of 'perspective transformation' for enabling learning in enterprises where knowledge transformation (Tomassini 1997) is emphasised. Such transformation of perspective involves not only technical learning, but dialogic and self-reflective learning, frequently leading to personal, as well as organisational, cultural and social change in the workplace. Learners are encouraged to identify problems and contradictions in workplace practices, and contribute to their redesign - as well as participating in more routine types of problem-solving. Engaging students through dialogue and critical pedagogy is thus claimed to be an important focus for vocational educators, requiring knowledge-making not only among VET practitioners but also among their 'students'.

In some training environments, it indeed appeared that workers were being helped to construct knowledge for themselves, as described above - with VET practitioners modifying the curriculum and their pedagogical practices according to the perceived requirements of workers and the enterprise itself. A training manager in a sawmilling company explained that, 'The material is not locked in. Changes can be made to suit our needs'. A training provider also noted: 'When standards are used as a bureaucratic instrument, they’re a waste of time but when they’re used to create a dialogue they’re fantastic'. Others described 'creat(ing) a dialogue to improve (competency) standards' and CBT as an 'excellent way for staff to reflect upon their practice'. It appeared that CBT could also be implemented in ways that foster critical questioning by, for example, offering workers a 'discussion point for what the standards are and mean for ... practice' (small Training Provider, South Australia). In nursing, CBT was said to 'support(s) a holistic approach to training', since competence in this field was '25% skill and 75% the way you were spoken to'. CBT organised in this way 'Is beneficial because it looks at the whole person and not just the task. For example: You don’t just take a pulse. There is more to it than that'.

It also seemed that a number of practitioners were coupling CBT to action learning, adult learning models and workplace-based scenarios, thus taking in organisation-wide learning and non-routine problem-solving. In the process of engaging in these different forms of pedagogy, in which knowledge is created both by trainees and themselves, new
forms of CBT were being developed and deployed. Action research (see, for example, Sefton 1997; Elliott 1998) was being undertaken. Practitioners were engaged in analysing the social and ideological dimensions of their situation, analysing possible options in their practices, making decisions with regard to these options, reflecting on the implications of their decisions, reflecting on ways of improving their practices, etc. However, it appeared from the telephone interviews that this situation was the exception rather than the rule, with only a minority of practitioners engaging in such work.

The case studies: Practitioner-researchers and different models of CBT

Meredith's story: 'The whole idea of training people is to improve ... skill levels'.

We are at Storeco, a large supermarket which is part of a national retail chain. Meredith, the store trainer, has been training for almost two years. When she first started training, trainers from the retail chain's training college 'came in regularly and like went through the material with me'. Training is ' geared towards supermarket retailing' – 'a waste of time unless we are going to get something out of it'.

As one might expect, CBT was found to contribute more to trainers with little experience of training than those who had been training for some years. Less experienced trainers were often in-house trainers who had risen from the ranks with no training qualification other than train-the-trainer and no formal learning or curriculum models to draw on. Thus, Meredith, as a 'novice' trainer, appreciates the structures provided by CBT:

I mean each trainer could ask different questions. ... I mean we could all be getting something different, expecting different things from the person in training, whereas this gives us all a guideline. ... which you need when you're new.

Meredith constructs CBT as providing 'a guideline' for the practice of training, this guideline being something 'you can change ... because I mean basically they're just giving you these things to get to this outcome'. She does not, however, seek to set training outcomes herself or strive to work 'outside' the boundaries of the training system. The model of vocational education and training that emerges is very much a training one. Targeted at competence in specific practices it does not have a broad scope:

(Competency is) not just going to school, it's actually being able to put it back into the work place. So you can actually mark people off in the work place as well, so what they can do, not what they know. I mean, it's both but not so much what they know.

I have heaps of videos, so I mean we'll watch videos but then we'll discuss them as well. So like the shifting stock video, I mean we'll watch it but then we'll talk about how the correct way is to lift, but then you make sure that they are correct because we've had lots of back injuries so I mean it's not just watching, you've got to make sure that they are doing it.
The curriculum as enacted at Storeco requires that trainers 'make sure that they (trainees) are doing it' and that trainees 'prove (they) can do the work':

I have got a book that I have to sign for on-the-job stuff, and I sit down with X (the staff trainer) and Y (the assistant store manager). And, between them two, they know, they go through the book and they ask me questions and I'll answer them and they sign me off if they think I am competent and that.

We go out to school ... two days a month whatever and we are just given sheets and we either read them out or do the exercises, things like that, group work and stuff like that. And then we come back here (the workplace) and prove we can do the work, like get assessed. ... Like for the one module we've got five or six questions, things that we have to do, some might be marked off at school and some the person might mark off here.

It highlights the importance of assessment which appears to be largely a matter of mechanics – putting trainees through the paces of procedures which (re)create the correct outcome. Thus, Meredith involves trainees in watching videos on shifting stock, 'talk(ing) about ... the correct way ... to lift' and 'then ... mak(ing) sure that they are correct'. The emphasis is on the procedures, and the procedures are about organisational effectiveness, not individual desires or goals.

Any notion of the options that trainees might take with regard to occupational or self-identity appears irrelevant to these procedures. Indeed, trainees are constructed almost exclusively as 'employment' or 'employable subjects': 'We look at Certificate One as getting someone ... that we can train and hopefully at the end of that year we get a good quality staff member and that person's got a full time job'. The focus is on bringing trainees to a desired standard or state of efficiency and productivity – a common construction of training. As Wenger (1998, p.263) observes in this regard: 'Training aims to create an inbound trajectory targeted at competence in a specific practice'. Unlike education, it is not transformative: it does not 'strive to open new dimensions for the negotiation of the self'.

At Storeco, CBT is definitely not 'training for training's sake'. Rather, it is geared specifically to supermarket retailing:

We have more control over the training ourselves. At least the system we have now, we certainly gear towards supermarket retailing and I think training for training's sake is a waste of time unless we are going to get something out of it (Assistant Store Manager).

One consequence of gearing training in this way is that it can become narrow and restricted as Storeco's Assistant Store Manager readily admits:

What I tend to find with most of the Certificates that we do is, at this stage, all we are doing is testing people on stuff that they already know.

The whole idea of training people is to improve their skill levels and maybe we need to look at training them in new things, instead of spending a year on stuff they already know.

Like much of the telephone interview data, the emphasis is on producing knowledge which is immediately useful to the organisation. While Meredith and her colleagues certainly evaluate the effectiveness of training with a view to improving its provision,
the subject positions 'practitioner-researcher' and 'action-researcher' neither appear to be on offer nor taken up. The practice of competency-based training cannot be claimed to be changed substantially through processes of research. Storeco's trainers focus largely on individual skills as visible entities which can be 'signed off'. Using performance criteria as their gauge, they have little need for a research focus inasmuch as these criteria are constituted as practical solutions to the problem of 'mak(ing) sure that they (the trainees) are doing it'.

*Tina and Tony's story: 'They ... get into a program and look after themselves'*

*We are at 'Carco', a medium size manufacturing company which builds cars for the sports end of the market. The thrust of competency-based training at Carco is learning. A clear distinction is made between learning and training. Training concerns the skills that operators use on the shop floor. Learning concerns the knowledge and awareness that operators need in order to 'relate to decisions, questions, issues that arise'.*

The design and development of training at Carco is informed by a concept of competency quite unlike the 'standard' concept. Carco's trainers, and Carco's management, do not differentiate between workplace requirements and educational requirements as this concept of competency appears to do: 'The concept of competency focuses on what is expected of an employee in the workplace rather than on the learning process' (NTB 1992, p.29). The Managing Director puts it like this:

*And you might say you're toilet training your children but when you're twenty-five and thirty and forty years old, you're educating. If I'm still training people at that age then I think it's a misnomer. The skill part of it, I think is trying to do that. ... Now, the knowledge based training I see as being extremely important and I see the knowledge based training as a learning activity, not a training activity.*

Learning and working have increasingly become an integrated process at Carco. A project strategy is used where recognition is given the idea that knowledge is an important ingredient in contemporary workplaces and learning is an essential part of making and transforming knowledge:

*The major initiative we took was ... in the project work that they ... undertake, and I'm sold on project work, 'cos that was the way I was educated even thirty years ago. I think project work is good so long as, so long as it's recognised within the project, that they, that is the students, manage themselves. They're not managed. They're not told "Hey do this, hey do that". They actually get into a program and look after themselves (Managing Director).*

The main purpose of training within this strategy is to facilitate the (trans)formation of knowledge by encouraging workers to use their job experiences for learning. As Tony, one of the trainers at Carco, observes:

*It's more focussed on the theory side. I mean the practical skills you're getting every day. That's being reinforced all the time. It's where they've got to get that "why", in the practical sense, *why* are they doing it that way? I mean there must be a reason. I mean they can ask questions: "Why are they running out of parts". Well there's got to be some sort of obvious reason.*

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The most important outcomes of training at Carco are taken to be intangible. What Carco wants out of training are 'attitudinal changes, ... thinking and commitment qualities, rather than a demonstration of skill on the floor'. The emphasis at Carco is on building knowledge and creating awareness of processes, for example, processes that cross work functions and tasks: 'If these guys have got to be able to talk to engineers, they've got to be able to talk to them on the same basic terms, and the knowledge may not be as deep but it's still the same knowledge' (Tony).

Trainers too are engaged in knowledge-making as they design and develop the training program. This knowledge-making takes the form of an ongoing and expansive cycle of research, as Tina, another of Carco's trainers, explains:

Well, actually we discussed the sorts of issues that they (the company) thought were important, concerns they had about development of people on the floor and those sorts of issues, then developed a training program on the basis of that. So, we really developed a training program looking at the floor, at work and the issues, rather than starting with the curriculum. We developed our own curriculum on the basis of our understanding of the needs of the workplace and later ... we linked that through to the competencies and the VIC (Vehicle Industry Certificate), at a certain stage, after the curriculum had been developed, and after we felt satisfied it was addressing the key issues.

Senior managers and technical experts from outside the company come into Carco and share expertise with people on the shop floor. 'They certainly, the MD likewise, sees responsible and intelligent action comes from the basis of knowledge about the company, about its processes, about its values, about its direction, and about the way it plans to operate in the future' (Tina).

Along with these experts, the trainers generate 'knowledge-in-practice', 'an alive mix of information and concepts, coupled with the understanding necessary to apply them in everyday work' (Field & Ford 1994, p.4). They research specific contexts of work in the workplace and make curriculum analyses, and the programs that flow from these analyses, that place learners in the actual contexts (industrial, occupational, cultural, social, ideological) in which their learning is shaped and given meaning. In other words, they change the 'standard' practice of competency-based training through action research:

My belief is that I sort of respond to the company and to the needs of those individuals and to the context and I'll account for them (the competencies). It seems to me the competencies as written are my reporting and accountability requirements. ... The people to whom I am really answerable are the individuals participating in the program and the company. And, those other stakeholders such as the union (Tina).

The training conducted at this company has a broad scope: it emphasises the necessity to provide the skills, knowledge and attitudes that the company requires and to critically question these requirements:

If you look at (the programs at) Toyota or Ford, or the traditional materials that are around, they're much more in terms of "These are the core values and this is what you will repeat back to me and you will repeat back to me in the order in which I give it to you". Whereas I believe what we do in our programme is discuss some of those issues and listen to diverse views. We certainly accept and even encourage people to have
their own point of view in relation to those things even though they may not be the sort of thing the company would encourage them to have. So I guess we provide an opportunity for people to express and explore their own relationship to those values and I think that’s really important (Tina).

There is ample evidence to suggest that action learning is a valued practice in this workplace. Trainees have the opportunity to discuss what they see as the major issues relevant to their work. Workers are encouraged to reflect and to act on the work environment, and, thereby to shape it into what they, individually and collectively, want it to be. The model of training employed is concerned to open working and learning identities, to explore new ways of being that lie beyond the current state (Wenger 1998, p.263). 'We certainly accept and even encourage people to have their own point of view in relation to those things even though they may not be the sort of thing the company would encourage them to have'. In other words, it is, in essence, an educational model.

**Changing practice through research: CBT and beyond**

The case material on CBT suggests that tensions exist between the 'espoused' model of competency-based training and 'models in use'. While it appeared from the telephone interviews and the case studies that this situation was the exception rather than the rule, with only a minority of practitioners engaging in 'remodelling' CBT, where this remodelling did take place a richer practice of workplace training and workplace learning tended to emerge. As the case enterprise Carco most particularly shows, once inserted in the practices of *education*, competence becomes as complex as the practices of which it forms a part. Thus, a distinction is drawn at Carco between what one responds to and what one accounts for: 'My belief is that I sort of respond to the company and to the needs of those individuals and to the context and I'll account for them (the competencies). It seems to me the competencies as written are my reporting and accountability requirements'. A new model of CBT emerges which emphasises the importance of *context* and *process* (work context, cultural context, social context, learning processes, research processes etc.) over outcomes, skills and tasks. This new model which may variously be called situated learning (Lave & Wenger 1991), competence-in-use (Ellstrom 1997), the professional model (Bailey & Merritt 1995), and the 'integrated' model (Gonczi et al 1990), is a product of a number of processes, the most significant being the empirical research undertaken by practitioners in enterprises, in partnership with key enterprise personnel. While the latter may not actively research, they provide essential support and encouragement.

Albeit working within the 'standard' model of competency training, many practitioners determine for themselves, in the course of their practice, what works well in a particular situation and why, and how to adapt competency frameworks to fit changing circumstances and deal with 'messy' contingencies: 'If you are dealing with a problem customer ... it's very very difficult to set any sort of a standard there, 'cos they are all slightly different. If you use the same tactic on one, that will set another one alight!' (Assistant Store Manager, Storeco). These practices of self-determination and framework adaptation – practices that can quietly contest the apparently strong hold of 'standard' CBT – tend to be kept hidden. Documenting these practices represents one way of changing practice through research and adding to the changes which practitioners themselves are making through their 'capacity-building strategies' (Seddon 1999). This 'Big R' research (formal academic research) may well be less effective in providing for the transformation of participants in the process of research and
improving the lived relations of workplaces than worker oriented, collaborative, 'small r' research (such as practised at Carco).

It would seem from the empirical material that a rich practice of competence development emerges when participants engage in processes of learning and processes of research – both processes being taken to be a transformation of knowing and identity: 'My definition of competency goes something like the way in which we can effect through the training program a group of individuals who can be proactive within their company and therefore can achieve a better workplace for themselves' (Trainer, Carco). We should not be engaged in pressing an image of CBT as a universally applicable model of VET. Some practitioners appear to lead the way in allowing us to treat it not as truth, but as one 'truth', a historically specific education and training practice. Through this leadership, these practitioners might be thought to be both changing practice through research and changing research through practice.

Acknowledgements
This article is based on a research project conducted recently for the National Centre for Vocational Education Research (NCVER). We acknowledge the National Research and Evaluation Committee of the NCVER in funding this research and Helen Bound, Centre for Research and Learning in Regional Australia, in conducting the case study on competency-based training from which the picture of Storeco was drawn.
References


