Learning to change, changing to learn. Stages of concern in the implementation of competency-based training

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A study into the effects of competency-based training (CBT) and recognition of prior learning (RPL) was recently undertaken by Charles Sturt University's Group for Research in Employment and Training (Smith et al, 1997). The study, funded by the Research Advisory Committee of the Australian National Training Authority (ANTA) was designed to investigate the effects of these two innovations upon teaching and learning. Although there has been much debate about the introduction particularly of CBT into vocational education and training (VET), there has been little empirical research into its effects. One reason for this may have been the intense and sometimes acrimonious arguments about CBT and its desirability (see Smith & Keating, 1997: 112-120). In such a climate it has not been easy to examine the actual effects of CBT.

The ANTARAC study offered the opportunity to look at these effects across the whole VET sector, and a number of findings are documented in the report Making a difference? How competency-based training has changed teaching and learning (Smith et al, 1997). This paper will report upon the reactions of teachers to the introduction of CBT, as revealed in a questionnaire designed to investigate their current concerns about the innovation. The paper argues that the effects of CBT on practitioners have varied according to a number of factors, especially the manner in which CBT was introduced by their organisations and whether appropriate staff development was provided.

Competency-based training

The VET sector has undergone considerable change over the past decade. Perhaps the two major changes have been the introduction of CBT as the preferred method of design and delivery of courses, and the opening of the training market to competition. Both of these changes have had considerable effects upon teachers as they have struggled to make sense of changing policy imperatives, often with insufficient access to information.

A particular problem with relation to CBT has been the lack of a shared understanding of its nature. A commonly-accepted definition has been:

Training geared to the attainment and demonstration of skills to meet industry-specified standards rather than to an individuals' achievement relative to that of others in a group (VEETAC, 1992, 5-8)

Many other elements have been incorporated into providers' and teachers' own understanding of CBT, however, with different opinions as to what are 'essential' and what are 'implied' characteristics of CBT (Elam, in Tuxworth 1989:15). A 1990 study of CBT in TAFE (Thomson et al, 1990) suggested that three out of a list of seven characteristics qualified a course as CBT; whilst a later study (Smith et al, 1996) of the whole of the VET sector suggested a three-level classification of CBT courses. The latter study found a move in courses accredited since 1992 (when the national Framework for the Recognition of Training - NFROT - was instituted) towards more CBT characteristics. The introduction of more CBT characteristics - such as assessment on demand or in the workplace - was found to depend on several factors: institutional factors, industry area, nature of the course and nature of the student group. Because of the nature of the 1996 study, which was in effect a national census of VET courses, no investigation could be made into how CBT was implemented in the classroom and training room. It was suspected, however, that individual teachers' agency would have a major effect upon how CBT was actually utilised.
The Making a difference study offered an opportunity to examine this question. Because of the debate about the meaning of CBT, no single definition was utilised in the Making a difference study. Instead a list of fourteen characteristics was derived from the literature and from previous studies (Table 1). To be included in the study, courses needed to exhibit all of the first five characteristics and at least two of the remaining nine.

Table 1: CBT features in the Making a difference study

<table>
<thead>
<tr>
<th>Feature</th>
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<tbody>
<tr>
<td>Course based on industry competency standards</td>
</tr>
<tr>
<td>Course documentation in CBT format</td>
</tr>
<tr>
<td>Industry involved in course monitoring</td>
</tr>
<tr>
<td>Recognition of prior learning (RPL) is available</td>
</tr>
<tr>
<td>Assessment is criterion referenced not norm referenced</td>
</tr>
<tr>
<td>Assessment on demand</td>
</tr>
<tr>
<td>Assessment at least partly in the workplace whilst working</td>
</tr>
<tr>
<td>Modular format with separate learning outcomes for each module</td>
</tr>
<tr>
<td>Assessment is based on competency standards</td>
</tr>
<tr>
<td>Assessment is based on demonstration of skills</td>
</tr>
<tr>
<td>Non-graded assessment</td>
</tr>
<tr>
<td>Assessment criteria are made public to students</td>
</tr>
<tr>
<td>Flexible entry and exit to courses</td>
</tr>
<tr>
<td>Training involves doing as well as watching</td>
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</tbody>
</table>

The effects of CBT upon teachers' roles

It is generally believed that CBT has had a considerable effect upon the role of VET teachers and trainers, although this belief has not been matched by a comparable amount of empirical research. It is generally held that, under CBT, a teachers becomes less of an 'up-front' information giver and more of a 'facilitator of learning'. Harris et al (1995: 270-271) list the following roles of a CBT 'resource person (who) facilitates learning:

- liaison person
- adviser
- mentor
- facilitator
- information dispenser/skills demonstrator
- assessor
- materials developer and
- evaluator

Although the nature of the word 'facilitator' has been challenged (eg Tooth, 1993) a more important issue is perhaps whether 'facilitator' is a smaller or greater role than 'teacher'. The above list seems to imply, by its length, an expanded role, but some studies (eg Robinson, 1993) have found teachers complaining that their role has narrowed. Cornford (1996) found that teachers were pessimistic about the results achieved by their students under CBT, implying that these teachers were unhappy about the teaching role they were being expected to fulfil. Simons (1996) and Smith & Nangle, 1995) found teachers unhappy with the CBT curriculum documents with which they were expected to work. These teachers felt that the additional preparation of teaching materials required by minimalist CBT curriculum was something they should not have to do.

One point on which most commentators agree is the need for effective staff development to underpin the introduction of CBT. This was generally found to be absent or inadequate (Smith et
al, 1996) and confined to 'big-picture' issues, often confusing CBT with more general training reform matters. The lack of attention seemingly paid to staff development was despite early calls for its institution (Thomson et al, 1990:33), and warnings that teachers may be uncomfortable with the new role of 'resource person' (Hobart & Harris, 1980). Although some staff development projects such as the National Staff Development Committee (NSDC) action learning 'CBT in Action' program (Kelleher & Murray, 1996) had enjoyed success, their effects were limited to certain groups of VET practitioners, whereas there was a widespread need for training in the most basic and practical aspects of using CBT (Choy et al, 1996).

A major difficulty for practitioners in their response to innovation is that they inevitably become novices to some extent, to 'bear the burden of incompetence' (Stenhouse, 1975). For teachers and trainers, this burden is particularly difficult to bear as they are accustomed in their role to having power, over students and trainees (Denscombe, 1985, Mulcahy, 1994) and also to working largely in isolation from other practitioners (Hargreaves, 1994:169). Having power means that they are unused to being in a situation where they are unsure and might make mistakes, and working in isolation means that they may be unable to seek support from other practitioners. The introduction of CBT means radical change in every aspect of their work: new curricula, new delivery methods, a close relationship with industry and changed teaching interactions. Stenhouse (1975) maintains that practitioners are not satisfied until they are doing things at least as well as they did before; and in view of the many changes associated with CBT this could be expected to take a long time.

Research method

The literature review suggests both a radical change in teachers' roles under CBT and a dissatisfaction of teachers with that changed role and with the support they have received in order to cope with it. It was expected therefore that a large amount of time would be spent during the research in talking in depth with teachers, both individually and in groups. The research covered thirty-six VET courses spread across the whole of Australia and across types of provider (public and private) and three main industry areas. The industry areas were building and architecture; business and office administration; and engineering including automotive. Twelve of these courses were studied through intensive case studies over a two-day period, involving observations and interviews with all stakeholders, and twenty-four by telephone interview with teachers involved in the courses.

In order to capture teachers' responses to the innovation of CBT, a 'Stages of concern' questionnaire was devised for the study. This questionnaire was designed to reveal how teachers had worked through various concerns about CBT, beginning with concerns about what the innovation meant for them personally in terms of their satisfaction in their day-to-day work. Subsequent concerns were expected to focus upon how to develop effective ways of handling the innovation and concern for its longer-term impact. Whilst staff development about CBT was generally focussed on its end product or longer-term impact - upon the often loosely defined role of CBT in making training more responsive to industry and more efficient in its production of skilled workers - teachers and trainers had to often work out for themselves how to use CBT in their work. Thus the stages of concern questionnaire could be expected to yield interesting indications of how practitioners coped with this anomaly.

The questionnaire was derived from the work of Hall and his colleagues at the University of Texas. Hall identified stages of concern which were common across a number of innovations (Duke, 1993). The stage of concern of an individual highlights those parts of practice which cause him or her anxiety. The questionnaire used in the study was based on an instrument devised by Borich (1993). A copy can be found at Appendix 1. The main function of the questionnaire was to establish whether teachers' concerns were with 'self', 'task' or 'impact'. The expectation would normally be that, as the innovation (in this case, CBT) becomes more firmly established within an organisation, teachers' concerns would shift from a focus on self to a focus on the task and then to its impact. The teachers and trainers were able to choose between four responses for each item in the questionnaire: 'not concerned', 'a little concerned', 'moderately concerned' and 'very concerned'.

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Three points were allocated for 'very concerned', two for 'moderately concerned', and one for 'a little concerned'. Eight of the twenty-four questions related to 'self concerns', eight to 'task concerns' and eight to 'impact concerns'. The maximum score for each of the three sections (self, task and impact) was 24. This would be achieved if the respondent was 'very concerned' about all eight questions in that section.

The questionnaire was administered in seven out of the twelve case studies, in each case to between five and eight teachers. The seven instances included six TAFE colleges and one defence force provider. The following table describes the courses in which the teachers were involved.

Table 2: VET courses for which the 'Stages of Concern' questionnaire was administered

<table>
<thead>
<tr>
<th>Provider name</th>
<th>Type of provider</th>
<th>Course</th>
<th>AQF level</th>
<th>Industry area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box Hill College of TAFE, Melbourne, Vic</td>
<td>TAFE</td>
<td>Certificate in Motor Mechanics</td>
<td>III</td>
<td>Engineering</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(General Stream)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kangan Institute of TAFE, Hume Campus, Melbourne, Vic</td>
<td>TAFE</td>
<td>Certificate in Office Administration</td>
<td>III</td>
<td>Business</td>
</tr>
<tr>
<td>Mackay College of TAFE, Qld</td>
<td>TAFE</td>
<td>Certificate in Office Administration</td>
<td>III</td>
<td>Business</td>
</tr>
<tr>
<td>Petersham College of TAFE, Sydney, NSW</td>
<td>TAFE</td>
<td>Certificate in Engineering (Electrical)</td>
<td>III</td>
<td>Engineering</td>
</tr>
<tr>
<td>RAAF School of Technical Training, Wagga Wagga, NSW</td>
<td>Enterprise</td>
<td>Avionic Mechanics</td>
<td>III</td>
<td>Engineering</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aircraft Mechanics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Torrens Valley Institute of TAFE, Adelaide, SA</td>
<td>TAFE</td>
<td>Diploma of Building Design/Design &amp; Drafting</td>
<td>V</td>
<td>Building</td>
</tr>
<tr>
<td>Wollongong College of TAFE, NSW</td>
<td>TAFE</td>
<td>Certificate in Carpentry and Joinery, Stages 1 &amp; 2</td>
<td>III</td>
<td>Building</td>
</tr>
</tbody>
</table>

In the subsequent discussion, responses will be referred to by the name of the provider. The responses, however, refer only to teachers involved in the course named above, and should not be taken to imply any conclusions about the provider in general or its other courses.

Table 3: Concerns about teaching and learning in CBT: Responses to the 'Stages of concern' questionnaire

<table>
<thead>
<tr>
<th>Provider</th>
<th>Self</th>
<th>Task</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mackay College of TAFE</td>
<td>6.4</td>
<td>9.4</td>
<td>11.2</td>
</tr>
<tr>
<td>Box Hill College of TAFE</td>
<td>7.8</td>
<td>10.9</td>
<td>7.0</td>
</tr>
<tr>
<td>Kangan Institute of TAFE</td>
<td>9.2</td>
<td>10.8</td>
<td>16.2</td>
</tr>
<tr>
<td>Wollongong College of TAFE</td>
<td>10.2</td>
<td>14.6</td>
<td>17.6</td>
</tr>
<tr>
<td>Torrens Valley Institute of TAFE</td>
<td>13.2</td>
<td>14.3</td>
<td>15.1</td>
</tr>
<tr>
<td>Petersham College of TAFE</td>
<td>15.0</td>
<td>17.0</td>
<td>17.0</td>
</tr>
<tr>
<td>RAAF School of Technical Training</td>
<td>16.6</td>
<td>16.4</td>
<td>18.6</td>
</tr>
</tbody>
</table>

The findings of the 'Stages of concern' questionnaire

The findings revealed some significant differences between the groups of teachers (Table 3). Teachers at Mackay, Kangan and Box Hill TAFE colleges showed the lowest scores in their responses. They showed higher levels of concern with task and, generally, with impact questions, suggesting that they had moved beyond initial concerns about their own ability to cope with CBT to concern about how to implement it properly and its possible effect upon student outcomes. The case studies revealed some possible reasons for the nature of concerns of teachers.
Box Hill had begun to use some CBT features in the automotive courses from 1978 with the rest of the college following suit from around 1990. The automotive courses had been using self-paced delivery methods for many years, with flexible entry and exit into the courses and assessment on demand. Box Hill teachers’ low level of concern about ‘impact’ suggested that because of the longevity of the innovation, they were satisfied that student outcomes were satisfactory. They still, however, had some ‘task’ concerns, suggesting that some of them were not entirely happy with the teaching-learning process under CBT. Some of the comments by teachers in interview revealed these concerns:

Students relate well to staff but there is (now) not much time to get to know them well
... miss (traditional) teaching which is impossible when you deal with different levels and modules
I now spend 50 per cent of my time assessing (instead of teaching)
... you mostly have to work with individuals and pairs of students and this means you have to repeat the same things over and over - very tiring.
Assessing students has become a bottleneck in the system
Some staff also feel they have no time to do some things they would like to do because students are always needing attention
The course is now not conceived of as having a broad framework but is decontextualised and fragmented.

However, other comments indicated an acceptance of CBT and of the changes it had brought to their role.

Kangan TAFE began implementing CBT in 1990 in trade courses, and other areas followed gradually. Although the Office Administration course was not fully CBT until 1994, some CBT features were utilised previously. The higher scores for impact and task than for self imply that, on the whole, teachers were not particularly worried about how they themselves coped with CBT but more with its effect upon students. This concern was reflected in the fact that staff had developed their teaching methods to suit their students. Self-pacing was used only later in the course and new students were taught in classes. The teachers found that this pattern suited their student population, with a significant number of recent school-leavers and also a high NESB component. In addition, special strategies had been devised for certain groups of students, such as a number of students with disabilities.

The importance of staff development

The findings illustrate the importance of effective staff development in the smooth implementation of CBT. Mackay TAFE is the outstanding example here. While the Mackay course had not been CBT for long (since 1995), staff development in CBT had pre-dated the implementation of CBT. Utilising a National Staff Development Committee CBT grant, the college closed for a day in late 1994 for staff development in CBT, which was undertaken in teams which mixed staff from different departments, in an attempt to prevent reinforcement of inappropriate practices and attitudes. A visit was also made by two staff from the Office Administration Section to Tea Tree Gully TAFE in South Australia, to investigate the mechanics of self-pacing with a view to implementing it at Mackay. Perhaps because of this thorough staff development, teachers had low levels of ‘self’ concern although they still had some concerns about the teaching-learning process in their self-paced type of CBT, and also about whether graduating students had all the skills required by industry.

Kangan TAFE, too, had devoted considerable resources to staff development in CBT, and continued to do so. The Institute had a target of three staff development activities each year for each member of staff, and in 1996 the average staff development time received was 29 hours. Training about teaching with CBT formed a large part of the staff development.
At Petersham TAFE, on the other hand, where concerns were high on all three indices, staff development in CBT was minimal. The teachers themselves said they found it difficult to attend staff development activities because they were run at times when they were teaching. The result of insufficient staff development was that, as one teacher said, 'We're always behind'. Their learning about CBT appeared to come from university courses which one member of staff was attending and from informal discussions amongst themselves. The Staff Development Officer at the Institute where Petersham was located echoed these comments, stating that the staff development which had been offered was not well supported as staff appeared to think CBT was only a passing fad. She felt that only staff threatened by competition from other providers were interested in such development.

Another instance of lower levels of staff development in CBT was Torrens Valley TAFE, whose teachers also exhibited reasonably high levels of concern, at least in 'self' and 'task' areas. The staff had been involved in one two-day workshop on CBT, although one teacher had received no staff development in CBT. It seemed from the teachers' interview responses that many were still engaged in the, perhaps fruitless, activity of questioning whether CBT was 'a good thing':

We are de-skilling by using CBT
These students are never going to have the broader knowledge in CBT that past students
Students will have narrow competencies.

These types of comments were matched by a number of comments about the implementation of CBT
It was thrown at us without consultation or rational explanation
It has been seen as an imposition
The learning curve has been very steep. The process has been wrong. We have had no chance to consolidate.

And, interestingly:
It seemed that it was accepted as a good idea. If it was such a good idea, then we should have been given greater explanations about "why"? We were told "how to". The "why" would have helped the implementation.

The latter comment is at odds with most criticisms of CBT staff development. Generally, it is suggested that staff development focuses too much on 'big picture' issues and not enough on how to implement CBT. In this case, however, this group of teachers appeared to need time to discuss whether CBT was a good thing before they could move onto implementation issues. This could well have been a function of the fact that their course was an AQF Level 5 course and that they felt CBT was inappropriate for such a high-level course. The implication here is that there is no correct uniform method of staff development for CBT but that each group of teachers may have different needs. This is obviously a factor behind the 'CBT in Action' program but the latter has the disadvantage of only reaching certain self-nominating groups of practitioners.

Other factors affecting responses to CBT
As with any innovation, some factors specific to certain cases affected the implementation of CBT and practitioners' responses to it. At Wollongong TAFE, for instance, the building teachers had high levels of concern with 'task' and 'impact'. Their department was, at the time, attempting to implement CBT with inadequate physical resources; a new building was being constructed which would enable all-weather practical work and better integration of theory and practical work, which teachers saw as being essential to the successful implementation of CBT. In the meantime, however, they were struggling with existing resources. The teachers' high score on 'impact' reflected concerns they expressed about student outcomes. Some of the teachers felt that the new CBT course was inferior to the old course: 'Some of the builders just shake their heads'. Others, however, were happy with the new curriculum. A common concern, however, was with competition from non-TAFE providers, and this may have underpinned their high
'impact' concern; presumably they believe that good student outcomes were essential to the continued success of their courses.

The RAAF School of Technical Training teachers displayed high levels of concern in all areas, again reflecting particular circumstances. Their concern with their own performance appeared to reflect concerns over their self-image, with the question "Am I a fully-qualified instructor in this new framework or do I need re-training?" and with peer status, especially as it affected promotion prospects, which are always important in the armed services. Some of the teachers were only posted into instructional duties for short period of time, and may not have been confident in their overall teaching abilities, let alone their ability to cope with CBT. Two other issues probably helped to increase their concerns. Firstly, the course was fairly new (1995) and had been instituted as part of the RAAF Trade Restructure and this created some confusion. Secondly, there was a high level of concern with assessment, particularly with the issue of lasting competence and with the lack of grading in the RAAF version of CBT, and this seemed to be related with the importance of assessment for the trainees and their future careers.

At Petersham TAFE, concerns were also high across all areas. It seemed that teachers had never been convinced of the advantages of CBT. They had from the beginning had specific concerns, for instance about modularisation, about non-graded assessment (which they felt did not give enough information to the employers with whom they had a close relationship) and about lack of consistency of the use of national modules across Australia. They had adopted some strategies to cope with these problems; for instance they had changed assessment methods, but still seemed unsure that they had found correct answers. This may be related to their lack of participation in Institute staff development activities, due to their being unable to attend at the scheduled times, and hence their lack of opportunity to learn from staff in other industry areas.

Conclusion

The findings of the 'Stages of Concern' questionnaire enable some general conclusions to be drawn about the implementation of CBT in different circumstances, although it must be remembered that the average figures in Table 3 reflect a very wide range of individual responses. Individuals' responses appeared to vary according to their prior experience and their disposition towards the innovation. The overall results for each site are, however, supported by interview and focus group statements from the teachers at each site.

In general, teachers showed similar levels of concern in all three areas where they had not yet accepted CBT and did not feel confident in its use. Where CBT was fully accepted and teachers worked confidently with it, their concerns had moved from concerns with their own performance and towards concern with how to improve their students' learning processes and student outcomes. In some cases, however, this picture was not clear and was complicated by further factors. Staff development appeared to be major factor in the success of failure of CBT implementation, but there is a need to explore appropriate methods of staff development. With insufficient support for teachers, the movement from 'novice' to 'expert' in CBT can be arrested, and teachers can even revert to former practices, as happened at Petersham TAFE with regard to assessment. It also helped if there were motivating factors to encourage teachers to adopt CBT. Competition from other providers was identified as such a factor at both Petersham and Wollongong.

A general conclusion from the study, was that, despite the variations exhibited in the 'Stages of Concern' questionnaire, teachers and trainers were working well with CBT and making a difficult transition successfully. Their task, however, had been made more difficult by the way in which the transition to CBT had been managed by their employers. As mentioned before, staff development had, generally, been concerned with the impact of CBT and its importance for the future of their employer, of VET and, even, of Australia's competitive economic situation. The implementation of CBT was managed in a top-down manner (McBeath, 1997). Implicitly, teachers' concerns had been belittled by this approach. This observation is not intended to assign blame for the poor management of the introduction of CBT, since managers of TAFE institutes and other VET providers were often, themselves, in possession of very little information about CBT. The observation does, however, have implications for the introduction of 'training packages'
which again will have their greatest effect upon the work of teachers and trainers, yet all advance information about them is couched in 'impact' terms.

Teachers' high level of concerns, whilst showing that they were not yet confident in all areas of CBT implementation, need not be construed as a manifestation of an anxiety-ridden group of practitioners struggling to catch up with modern practices. The high levels of concern equally illustrated their interest in the teaching-learning process and its outcomes for students and trainees. Old assumptions about teaching and assessment were being challenged and found wanting, and new practices were being developed. Although this process was painful at times for practitioners, it was likely to lead to better outcomes and to more satisfying experiences for teachers and students alike.

Editors' Note: For a copy of the questionnaire and other details of the survey please contact the authors.

References


Tooth, T. 1993. This is your facilitator speaking. *Australian Training Review*, 8, 31-33.
