ASSESSMENT AND COMPETENCY-BASED TRAINING: A CASE STUDY
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This case study is one component of a national competency-based training pilot project focusing on assessment and competency-based training (CBT), with particular reference to teaching and learning approaches. The project was recently undertaken by the Office of Vocational Education, Training and Employment Commission, Queensland, and received funding assistance from the Department of Employment, Education and Training.

One research strategy employed in the project involved the completion of five case studies, which examined CBT and assessment issues in different 'real life' contexts. These contexts included public and enterprise providers of training, where CBT had been operational for some time. The case study reported in this paper examines CBT and assessment issues within the Stanwell Skills Development Programme, which provides training at the Stanwell Power Station in Rockhampton, Queensland. This case study highlights some of the challenges faced by an enterprise provider of training in the area of assessment and CBT.

Setting the Scene

Stanwell Power Station is situated 28 kilometres west of Rockhampton, Queensland. The station is presently under a construction schedule which will achieve commercial load in 1993. It is currently Queensland's largest industrial project, with a construction workforce that is expected to peak in 1992 at an estimated 900 workers. The station is expected to become fully operational in 1996, when it will be capable of producing 1400 megawatts of electricity.

FOCUS: CONSTRUCTION FORMWORK APPRENTICESHIP COURSES (CN 208)

The construction formwork apprenticeship course (CN 208) was first run at Stanwell in 1990 with ten apprentices. The first apprentice graduated eight months later. This case study examines how this course, featuring on- and off-the-job competency-based training (CBT) and assessment, developed and the assessment practices employed are discussed.
CONTEXT

The Stanwell Skills Development Programme (SSDP) is a tri-partite organisation established to provide training for the construction workforce at the Stanwell Power Station and for workers in the local community. Membership consists of representatives from unions, contractors, local, State and Federal governments, Technical and Further Education, Training and Employment, Queensland (TAFE.TEQ), the Capricornia Training Company (CTC) and the Queensland Electricity Commission. Apprentices are employed by the CTC, with their training being co-ordinated by the SSDP. The SSDP was incorporated in 1989 and the first course commenced in February 1990.

CHALLENGE

The aim of the SSDP is to design training programs that can meet all of the training requirements identified at the Stanwell site. These requirements include:

- upgrading the skills of workers at the Stanwell Power Station;
- upgrading the skills of workers in the local communities;
- assisting unemployed in the local communities with job opportunities by helping them attain new skills;
- assisting with award restructuring and workplace reform at Stanwell; and
- co-ordinating the development and implementation of appropriate educational materials and training strategies.

RESPONSE

The SSDP decided that the most appropriate way of meeting the training requirements of a workforce that had a range of workplace skills and experience was to adopt student self-paced learning. CBT, incorporating recognition of prior learning, was also adopted. This approach to training is reflected in the construction formwork apprenticeship course.

Course

The construction formwork apprenticeship course features on-the-job training and assessment on site at the Stanwell Power Station. While undergoing training, apprentices rotate through the various contractors on the power station site to enable them to gain all the required competencies.

Under a time-serve system, the construction formwork apprenticeship course
is of two years duration; however, with the student self-paced learning CBT format adopted by the SSDP, the time taken to complete the course now varies according to the individual rates of progression of apprentices.

STRATEGIES

Program development

The construction formwork apprenticeship course (CN 208) developed by SSDP varies from the existing TAFE.TEQ course since it links on- and off-the-job training and assessment. Skills are developed within a theoretical and practical framework using both on- and off-the-job training. Training is linked to assessment and students have to demonstrate competence in the off- and on-the-job components of the course. Course notes and materials were taken from available CN 208 modules, but were modified to meet the specific requirements of the Stanwell site. The contractors appear pleased with the way the course operates.

SSDP have got the right concept with CBT otherwise we wouldn’t have taken it on.

The scheme has worked well, we would only have a problem with less than ten per cent of apprentices.

Contractor

Teaching

A feature of Stanwell is that off-the-job training is offered on site at the specially constructed 'Stanwell Skills Centre'. This allows apprentices to move easily between on- and off-the-job training. Apprentices are released by the contractors to attend the centre for a maximum of two hours a day, twice a week, should the students feel they require assistance.

Teachers at the Stanwell Skills Centre describe their teaching role as different from their previous professional experiences. They describe their new role as that of a facilitator/mentor. Their responsibility is to support individual students in a student self-paced learning system and assist them if they have difficulties.

Training on-the-job is usually carried out by a tradesperson working with the apprentice, with some supervision from a leading-hand or foreperson.

Although Rockhampton TAFE teachers have sole responsibility for assessing the theory component of training, they do have access to the students on site and are able to discuss students' progress with workplace instructors and employers. These teachers are accepted on site and feel they can play an active role in the on-the-job assessment process.
The TAFE teachers, apprentices, representatives from industry and the CTC indicate that the SSDP has an excellent teaching system, with TAFE teachers responsible for high quality theory input and industry responsible for maintaining acceptable industry standards. This system produces employees who can work to accepted industry standards.

*Industry is responsible for standards. Here at Stanwell, because apprentices move between employers, there are cross checks on an apprentice's standard all the way through their training. This means the assessment process is reliable. Although the leading hand is responsible for on-the-job assessment, a competence is not granted until the employer signs it off too. Since the employer is likely to receive 'flack' from other employers if an apprentice is obviously not competent after being signed off, this is a further check that standards are being maintained.*

SSDP Officer

**Learning**

Learning is fully self-paced in the on- and off-the-job components of the course. Recognition of prior learning takes place and apprentices who can demonstrate they have the skills included in a particular unit of work can undertake assessment for that unit at any time. The assessment can take place both on- or off-the-job in consultation with the employers.

Modules are structured to relate theory and practice so that on- and off-the-job learning experiences complement each other.

**Assessment**

The construction formwork apprenticeship course is divided into sixteen modules with each module being allocated a percentage value of the total apprenticeship.

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<tr>
<th>Construction formwork apprenticeship course: Modules and percentage value</th>
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<tr>
<td><strong>Materials &amp; equipment</strong></td>
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Students are assessed on both theoretical knowledge and practical skills but they are not credited with theory until the related practical competencies have been demonstrated. Assessment of theoretical knowledge has an 80% 'pass' mark, while students' practical skills are assessed as being either 'competent' or 'not yet competent'.

Students are encouraged to undertake self-assessment and to request assessment when they feel confident that they are competent in a given module.

_CBT is more beneficial than 'time serve'. In our opinion industry thinks that the student who has completed the training under CBT is better qualified and highly employable. Practical on-the-job assessment and off-the-job theoretical assessment are seen as being a positive move towards ensuring that an apprentice receives the best possible training._

CTC Field Officer

The SSDP has a system that financially rewards excellence and prior learning. Apprentices progress through training and assessment at their own pace and they receive pay increases that reflect their efforts and abilities. Overall, students have progressed through their training more quickly than under normal time-serve arrangements. With his prior learning being recognised, the first student took eight months to complete his training. The student who took the longest time completed his training in eighteen months.

_The money reward is a good incentive to move through the course quickly._

Student

**Assessment Committee**

The assessment committee consists of members from industry, unions, SSDP, TAFE, TEQ and the State Training Authority. This committee:

- decides if a student has the required competencies to move between levels;
- acts as a mentor for students; and
- arbitrates on training disputes if problems arise.

There are four levels in the apprenticeship with apprentices receiving pay increases as they progress through the levels. Students begin at level 1 and can seek to move to the next level when they have theoretical and practical competence in modules to the value of 25%. However, a change in levels is not automatic. When an apprentice achieves these prerequisites, the assessment committee meets with the apprentice, instructors and employers to discuss progress and to confirm whether the apprentice should progress to the next level.
OTHER CONSIDERATIONS

With the many parties involved within the teaching, learning and assessment process in the construction formwork apprenticeship course, it was not surprising that there was diversity in the opinions expressed about related issues. This section draws together some of these opinions.

- On-the-job assessors need to be clear about the performance, conditions and standards of all assessment practices they design and implement. In this way, they should only equate competency standards with performance; not with particular student personality characteristics.

- Competencies need to be specified in a way that allows for no misunderstanding of standards and conditions between assessors and contractors.

- On-the-job assessors should receive some training in how to conduct valid, reliable and efficient on-the-job assessment practices.

- All parties agreed that initially some older tradespersons treated the CBT system with contempt, particularly when students were seen as ‘fast tracking’ through training. These attitudes appear to be changing, however, as the workforce learn more about CBT and work with people who have completed this form of training.

- While the contractors view training as benefiting the construction industry, apprentices are not a major consideration for contractors.

One outstanding feature of this study is the almost universal approval of the CBT system at Stanwell, as expressed by all the interested parties surveyed. The SSDP have developed a training program that employers, unions, the CTC and students feel is meeting their needs in producing well-trained, competent tradespersons. Generally, the SSDP has produced qualified tradespersons more quickly than under the normal time-serve apprenticeship arrangements. The real issue, however, is that the SSDP is able to produce a tradesperson who is considered competent in all aspects of the course. Industry feels certain that the apprentice who completes this program will be confident and competent to undertake work in all aspects of construction carpentry covered in this apprenticeship.

The strength of the program lies in the system of integrating training and assessment. Theoretical and practical knowledge and skills are linked and taught in the most appropriate conditions. Assessment methods selected are the most suitable for the knowledge and skills being assessed.
EMERGING ISSUES

Several key issues emerge from this case study:

- There is still a need to address the issue of how standards are conveyed to students, on-the-job assessors and contractors. At the moment, the apprentice log book does not specify clearly the standards, conditions and level of performance under which an apprentice is being assessed. It is important that these aspects of assessment are clearly spelt out to all the parties involved in the assessment process. In this way, there is less likely to be dispute about whether correct competency levels have been achieved by an apprentice. Such a change would further strengthen what is already a very promising training program.

- At the moment, tradespersons supervising apprentices do not have any training as teachers or as assessors; however, with the increased responsibility being afforded to on-the-job trainers, as both teachers and assessors, there is a need to address the minimum qualification requirements that are necessary to carry out these tasks.

Other case studies in the series:

- Australian Paper Manufacturers, Petrie, Queensland
- Box Hill College of TAFE, Melbourne, Victoria
- Marine Engineering Training Research Centre, Williamstown, Victoria
- Richmond College of TAFE, Richmond, Victoria

Further details can be obtained from the Office of VETEC on (07) 237 0337.