Coal Operators' Conference

Faculty of Engineering and Information Sciences

1998

Contemporary developments in training

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Contemporary Developments in Training

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ABSTRACT

This paper will examine some of the significant developments in the training field in Australia in the past decade and the application of these changes to the mining industry generally, and the coal sector specifically. Three major aspects will be examined:-

1. **Competency** - the use of Industry Competency Standards and how these can be used for achieving enterprise performance requirements

2. **Assessment** - making judgements about an individual's competence, and using a rigorous assessment system as the basis for the "authorisation" system at a mine

3. **Evaluation** - ways to evaluate the return on investment in training, and convincing CEO's/shareholders that your training dollar is being spent wisely.

Before examining these issues, it is important to understand the drivers of change in the training systems in Australia, and the functions that Industry Training Advisory Bodies (ITABs) perform.

Over the past decade considerable effort has gone into developing a new basis for the Vocational Education and Training (VET) system in Australia. This change has occurred across the whole range of Australian industries, and has involved the development of what is called the Competency-Based Training (CBT) system.

There have been two major drivers of change for this past decade of reform of the VET sector of education. Firstly there has been the insistence of enterprise employers and their industry representatives that the training system provides people with skills relevant to employment. Employers have expressed continuing disappointment for seemingly decades about the irrelevance of a lot of the skills learned through "off-the-job" training. Secondly, employees and their union representatives saw the need for increased skills, greater portability, and in a lot of cases, career progression and increased rates of pay linked to increased skills. Employers, unions and governments have supported and financed the reforms, not only for their own narrow reasons, but because a modern and relevant VET system was seen as a critical element in micro-economic reform.

One element of the VET reform process, has been the formation of Industry Training Advisory Bodies (ITABs), which are tri-partite (employer, union, government) or bi-partite (employer, union) organisations formed to provide policy advice to government and industry parties. There are approximately 20 ITABs representing the major industry sectors in the Australian economy, with 2 "layers". National ITABs, responsible to the Australian National Training Authority (ANTA) and the Federal Government, are primarily responsible for the development of the Industry Competency Standards required by their industry. State/Territory ITABs are responsible to their State/Territory Training Authority (in NSW this is the Department of Education and Training), and are primarily responsible for liaising with industry stakeholders and training providers (particularly TAFE).

NSW Mining ITAB represents four industry sectors (black coal, metalliferous, quarrying and drilling) and has a bi-partite board comprising employer and employee representatives (not necessarily in equal numbers). The Mining ITAB is a "not-for-profit" company with two employees - an Executive Officer and an Office Manager. Policy is determined by the ITAB

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[1] Executive Officer, NSW Mining ITAB

Board of Directors. The function and major activities of the NSW Mining ITAB are summarised in the Mission statement in its "Strategic Plan 1997-99":-

"To provide to the industry and key stakeholders effective and timely training-related services by:-

- producing an Industry Training Plan;

- transferring information;

- fostering industry networks;

- influencing Government training policies/priorities/resource allocations;

- promoting Best Practice quality-based training systems to continually improve industry training standards."

Unlike some other industries who have a centralist view of how training should be developed/delivered and who rely to a large extent on funding and delivery of their training by governments, the mining industry in general, and the coal sector in particular, is unique in two important aspects:-

1. there is a large commitment to training, with the mining industry spending the most per employee on training of any Australian industry;

2. most of this training is carried out "at-job", either using mine-site trainers or trainers/consultants delivering on site.

These two aspects make the role of NSW Mining ITAB different to NSW ITABs covering other industries. The major difference is that the mining industry sees that the role of the ITAB is to ensure that the primacy of the enterprise in training in the industry is maintained and enhanced. In the following discussion on the three aspects being examined in this paper (*competency, evaluation* and *evaluation*) it is important to remember this difference. Other industries are evolving different versions of the CBT system to suit the needs of their industry. The coal industry's system is based on implementation at the mine-site level and integration with existing mine training systems.

COMPETENCY

Competencies

The major distinguishing feature of the Competency-Based Training system is that it is based on <u>outcomes.</u> That is, what a person can actually <u>do</u> in a work environment. As the name suggests, the basic foundation of this system are <u>Competencies.</u>

Competencies which are developed and recognised by an industry are referred to as:-

- *Industry Competency Standards;* or

- *National Competency Standards;* or

- *Industry Competencies*

Competencies can also be developed by individual organisations and are referred to as:

- *Enterprise Competencies;* or

- *XYZ Competency Standards (eg. McDonalds Competency Standards)*

Competency Standards are defined as: *The specification of the knowledge and skill and the application of that knowledge and skill to the standard of performance required in employment.*

It can be seen from this definition that the terms "specification" and "performance" are used. In this respect Competency Standards are similar to "technical" standards such as Australian Standards - they specify an outcome in terms of the required performance.

Competency is not simply about performing a narrow task in a controlled environment, but also encompasses the requirement to:

- perform individual tasks (*task skills*)

- manage a number of different tasks within the job (*task management skills*)

- respond to irregularities and breakdowns in routine (*contingency management skills*)

- deal with the responsibilities and expectations of the work environment (*job/role environment skills*), including working with others.

BLACK COAL COMPETENCIES

The first version of the Black Coal Industry's Competency Standards were developed by industry "subject matter experts" in 1993. These covered four areas:-

1. Underground production

2. Open-Cut production

3. Mechanical Engineering

4. Electrical Engineering.

Extensive review of these standards commenced in late 1996, and have just been completed in January 1998. There are now a total of ten areas:-

1. Core (entry - level and common to everyone)

2. General (able to be accessed by everyone)

3. Underground production

4. Open-Cut production

5. Coal Preparation

6. Mechanical Engineering

7 Electrical Engineering

8. Building & Construction

9. Water & Waste Water

10. Management and Leadership

The competencies in the first five categories are largely unique to the coal sector and have involved extensive work by industry people to ensure that they reflect the reality of work. The last five categories have been largely adopted from other industries who have had relevant competencies, avoiding the need for the coal industry to "reinvent the wheel". In some cases these competencies "imported" from other industries have been modified/adapted to reflect specific and/or additional requirements of the coal industry. An example of this is the Mechanical Engineering competencies which have been adopted from the Metals and Engineering industry standards, but have had "overlays" developed which contain specific coal industry requirements.

Two aspects of these new Black Coal Industry Competency Standards require particular mention.

Firstly, in the Underground Production section there are now approximately 24 "units of competency" covering "underground statutory management functions" - Deputies, Undermanagers and Mine Managers. These have been developed as a direct result of the recommendations contained in the Taskgroup 3 report arising from the Wardens Moura 2 Inquiry, and have involved extensive development, validation and consultation among affected groups in NSW and Queensland.

Secondly, it is worth noting that a set of "Leadership and Management" competencies have now been included in the Black Coal Industry Competency Standards. These have been adopted from a set of competencies referred to as the "Frontline Management Initiative", which was a Federal Government response to the Karpin Report which highlighted the need to enhance supervisory and management competencies across most Australian industries. We now have in the Black Coal Industry Competency Standards not only the "technical" aspects of competency, but also the "soft" competencies - people management, planning, problem-solving, etc.

Now that Industry Competency Standards exist for both "underground statutory management functions" and "leadership/management", discussions have already commenced between a range of parties (NSW Mining ITAB, Qld Mining ITAB, DMR, DME, CMQB, Qld Board of Examiners, etc) to explore a range of issues and potential for integration/improvement of existing training systems in this area. The issues include:-

- use of the Competency Standards for course content;

- use of the Competency Standards for assessment;

- integration of industry-wide and enterprise-specific training and assessment;

- re-assessment of competency; and

- continuing education to maintain competency

Addressing of these issues will require considerable industry input in the next 12 months.

ENTERPRISE PERFORMANCE REQUIREMENTS

The coal-mining industry, along with a wide range of other industries in Australia, has increasingly been adopting relevant components of what could be called in a broad sense, quality-based systems and/or philosophies. These may have names such as QA, TQM, TQC. Some organisations have spent considerable effort of comprehensive programs and some have invented their own hybrids or just adopted some components.

Whether through the adoption of such programs or not, a major theme in any business in the 1990's has been the concentration on outcomes. Similarly, in the training area, the major shift in the past decade has been to stop concentrating on the inputs of the process (the design of the training program and the qualifications of the teacher) and to concentrate on the outputs (whether the person had the required skills, knowledge, attitude at the end of the course). The specification of the required outcome is of course a competency standard.

How useful is an Industry Competency Standard to an individual coal mine? We've all heard the argument that each mine is different, so how useful can Industry Competency Standards be? They can only be useful to the extent that Competencies are common across the industry. The commonality across the industry is far more widespread than the differences.

Industry Competency Standards should be the starting point for the development of your own enterprise performance requirements for how work is to carried out by people at your mine. Unless you have generous resources and even more time, most of what you need to define your enterprise requirements will exist in the Industry Competency Standards.
Industry Competency Standards may be the starting point, but rarely will they be the end point. They do require customisation to incorporate the differences which will inevitably exist from mine to mine. This customisation rarely involves major alteration to the Industry Standard, but it must occur to address the particular risk factors and the procedures established to address those risk factors at each individual mine.

Once Enterprise Competency Standards have been developed for a mine by customising the Industry Competency Standards, how does this allow us to achieve our enterprise performance requirements? The answer to this is simple. You now have the standards defined which allows the development of a training program (if required), but more importantly you have the standards to allow judgements to be made to determine if a person has the skills to the level required by the mine's performance requirements. This is the process of **assessment**, and it is the second key component in the Competency-Based Training (CBT) system.

ASSESSMENT

The way to measure whether the standard has been met in the CBT system is by assessment.

Assessment is defined as: *The process of collecting evidence about competency and making judgement about whether or not competency has been achieved.*

To ensure that the outcome has been achieved, this assessment needs to be against the relevant competency standards (whether industry or enterprise).
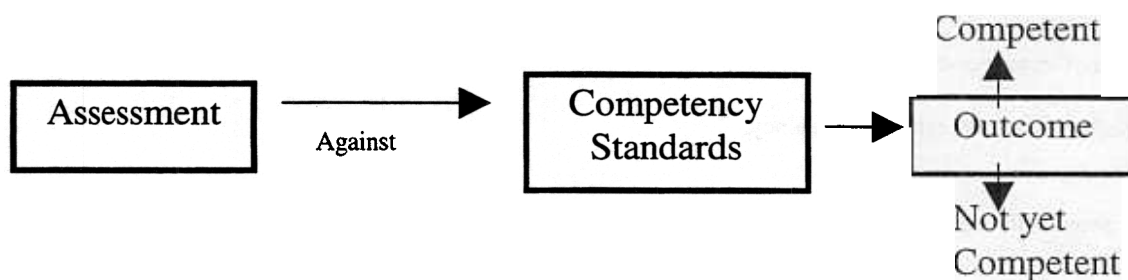
Gaining Competency

A person may acquire competency in a number of ways:-

Training -   formal or informal training, either "off-the-job" or "at-job"

Development -   formal or informal activities such as job rotation, project teams, acting in other roles, etc.

Learning -   covers a wide range of other activities through which a person gains skills and/or knowledge, including activities outside work

Recognising Competency

An important element of CBT is the recognition of competencies which people gain through formalised training/development activities, but also those competencies that they already possess. This is sometimes called RPL(Recognition of Prior Learning) or RCC(Recognition of Current Competency), and simply involves the person undertaking the assessment against the required standard (sometimes called a "challenge test").

Whether the person needs to acquire the competency (through *Training*, *Development* or *Learning*) or already holds the competency, assessment is still used to determine if he/she is competent against the competency standard.
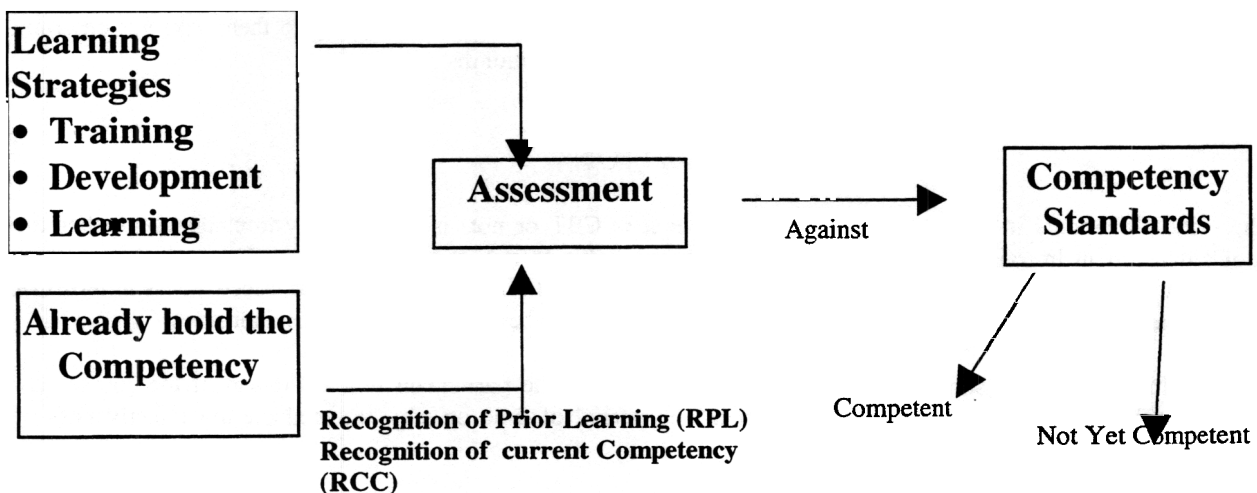
Mine Manager's Authorisation System

If the steps outlined so far are followed, then it follows that this is a very effective way for the designated Mine Manager to ensure that his "duty of care" has been fulfilled in his appointment of people at his mine to drive machines, maintain assets, operate processes, and generally perform work at the mine.

But how can this be done without "bogging the mine down with paper warfare"? It is inescapable that some traceable system (whether it is paper- or electronically-based, or both) is required. But there is no necessity to invent new systems. The systems of issuing Mine Manager's "authorisations" should be linked to your mine's assessment systems. The logic of

this is that the assessment system is based on achievement of the required Competency Standard, so the Mine Manager can be sure that the person has met the requirements needed at that mine.

The system does need to have some "rigour". It needs to be:-

1. documented in terms of policies and procedures;

2. demonstrably adhered to by all persons at the mine in all circumstances (it defeats the purpose if anyone is allowed an "exemption");

3. monitored and audited;

4. capable of providing a "due diligence" defence in the event of an incident/investigation/prosecution.

Re-Training

The notion of "re-training" people requires serious challenging with the advent of the CBT system. Why would mines devote large amounts of resources to putting people through "refresher" training courses? Why de-motivate people by putting them in a class-room situation and teaching them content which they may already know?

There is no logic to "refresher" training unless you have identified that there is a need for the knowledge/skill to be regained or enhanced. The way to identify if there is such a need is to carry out "re-assessment". This can be done in a range of ways, and does not necessarily involve the person completing all assessment events which may have been required when he/she was assessed as competent in the first instance.

One significant advance undertaken by some mines in recent times in NSW has been the determining of the interval (in one case ranging from 1 to 4 years) of when re-assessment of a competency needs to be carried out according to the "risk ranking" of the task. This ensures that re-assessment is targeted to competencies according to their risk, not on some arbitrary measure such as a blanket requirement for re-assessment every 12 months.

EVALUATION

One of the critical elements in any training system (whether it is CBT or not) is the capacity to evaluate whether the organisation's investment in training is worth it or not. It is reasonable to criticise trainers, training managers, and other managers for not setting up proper ways to evaluate the effectiveness of training itself, but also effectiveness in terms of return on investment. This criticism does not just apply to mining, but can be levelled across most industries.

The days of evaluating training solely on the "feel-good" factor (how the participant felt at the end of the course) are almost over. Significant research has been done over a long period of time on ways to evaluate the effectiveness of training, including analysing returns on investment .

Volumes have been written on this area, and trainers/training managers should be able to uncover large amounts of research. One of the better summary articles in the opinion of the author is by Ann Evans and appeared in the March 1996 issue of "Training and Development in Australia". The title of the article is "Are you Spending your Training Dollar Wisely: Evaluating the Return on Investment in Training"

The article identifies four levels of evaluation of effectiveness of training:

Level 1 - Reaction	Measuring the feelings and perceptions of participants in a training activity - the "smile sheets'
Level 2 - Learning	Measuring the participant's ability to perform a task or demonstrate desired behaviours following a period of training

| Level 3 - Behaviour | Measuring the participant's changes in on-the-job behaviour. |
| Level 4 - Results | Measuring tangible improvements in business results in the effects on the bottom line performance of the business |

Source: Evans, A "Training and Development in Australia" March 1996 pp. 13-17.

This model is easily understood by both trainers and others, and it would not be too difficult to establish relevant evaluation methods for a mine-site's training based on the four levels outlined.

Increasingly managers, CEO's, shareholders and other stakeholders will be asking trainers and training managers more about their training systems and their effectiveness. The Competency-Based Training system has most of the answers.