

WATER RESOURCE MANAGEMENT PROGRAM



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ABSTRACT

Training reform of recent years has enabled industries and enterprises to develop training programs not only suited in competencies and outcomes, but also in structure, design and delivery. The Victorian Rural Water Industry has been a pioneer in competency based workplace training. This paper outlines the development and implementation of the Water Resources Management Program (WRMP) - a competency based on-the-job training program, for a geographically dispersed workforce with minimum levels of secondary education.

1.0 BACKGROUND

The Water Resources Management Program was one of the first Competency Based Training (CBT) programs to gain accreditation in Australia and the Rural Water Corporation was one of the first to obtain Registered Private Provider status in the early 1990's. The WRMP was developed at a time of massive change within the Water Industry in Victoria, at a time when the value of water itself was being closely examined. These changes resulted in a major restructure for the former Rural Water Corporation, and the creation of 5 separate Water Authorities;

- ◆ Goulburn-Murray Water
- ◆ Wimmera Mallee Water
- ◆ Southern Rural Water
- ◆ Sunraysia Rural Water
- ◆ Coliban Water

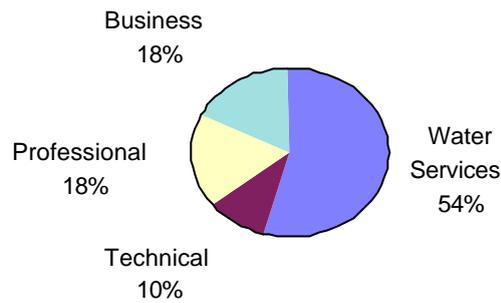
Similarly Melbourne Metropolitan and non-metropolitan urban Authorities were restructured along with changes to local government

1.1 The Workforce

At the time of development of the WRMP (1990) the Victorian Rural Water Industry (solely managed by the Rural Water Commission) was responsible for the operation, maintenance, design, construction, administration of the entire infrastructure, ranging from large dams to the supply of small townships.

As a consequence the skills required by the organisation were broad, and still are. Primarily the work can be divided into 4 main categories:

1. Professional (Engineer Scientists)
2. Business (Accountants Administration)
3. Technical (Surveyors Hydrographers)
4. Water Services (Operations and Maintenance-Field Staff)



The workforce involved is geographically dispersed throughout Victoria and also structurally diverse with work ranging from pick and shovel tasks through to world specialist engineering design.

The Professional, Business and Technical staff have traditionally had access to relevant accredited courses and tend to work in offices located in larger towns where access to Universities, TAFE Colleges are available. From research conducted in the late 1980's, it was found that such opportunities or in fact orientation to education/training did not exist amongst the Water Services (field) staff.

As a consequence the concept of an accredited training program for operational staff began.

1.2 Development

Philosophically any accredited course had to meet a number of criteria.

- ◆ To be outcome, not content driven
- ◆ Learning was to have an on-the-job focus
- ◆ Flexibility in terms of learning strategies and changing work practices
- ◆ Education levels including literacy and numeracy issues

1.3 The Process

Development of the program took the form of eight broad steps.

1. Setting the scene (December 1990)
2. Skills identification - DACUM (February-May 1991)
3. Skills analysis (April-July 1991)
4. Curriculum development (August-November 1991)
5. Development of Assessment procedures (January-May 1992)
6. Development of Instructional Material (January-May 1992)
7. Preparation for implementation (April-June 1992)
8. Program Launch (July 1992)

1.4 DACUM (Developing A Curriculum)

DACUM is defined as group technique used to produce behavioural objectives with skill inventories for a range of jobs.

A DACUM process was used for a skills audit and to develop the competency profiles. This

focussed group technique was used to elicit information about workplace competencies by using participants involved in exercising or supervising skills being recorded. The process involved:-

- ◆ selecting the jobs for analysis;
- ◆ developing a preliminary list of duties, tasks, skills, knowledge and aptitude for these jobs;
- ◆ validating this information extensively with work groups across the State.

Twelve employees, designated 'workplace experts', were selected, trained as DACUM session facilitators to conduct their own DACUM sessions.

The competency profiles for each work function produced by the facilitators then underwent a thorough validation process to ensure that all the occupational groups were covered, and all duties and tasks were included.

The DACUM information was supplemented by a "future" scan of the work requirement in one year, three years, and five years hence.

1.5 Skills Analysis

Using the Consolidated DACUM information the skills analysis identified four skill categories:-

- ◆ workplace basic;
- ◆ industry-specific;
- ◆ occupational specific; and
- ◆ job specific skills

Organising the DACUM information for these four categories made sense of the mix of skills and assured an appropriate balance in the training structure between common transferable skills and those with only specific application.

1.6 Curriculum Development

Following the extensive validation of the DACUM information and the identification of the four skill categories, the Common Skills Sub-committee designed the training framework in consultation with workplace experts across the State.

This involved grouping of tasks, the identification of common themes and the development of course and module structure with their designated competencies and learning outcomes.

1.7 Development of Instructional Material

Six employees, five of whom had been involved in the DACUM process, were selected to develop the Instructional material with the support of a skilled mentor in instructional design.

As a result, the new curriculum aligned with the State Training Board's, qualifications of ;

1. Certificate,
2. Advanced Certificate and
3. Associate Diploma was now complete.

Consequently a person completing the appropriate modules would receive:

- a. Certificate in Water Resource Management
- b. Advanced Certificate in Water Resource Management

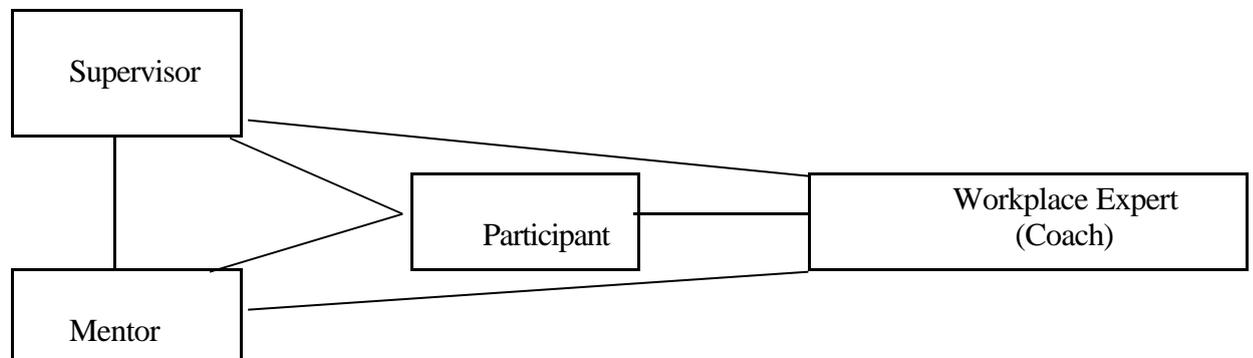
- c. Associate Diploma in Applied Science (Water Resource Management)

1.8 The Delivery

Delivering credential training to its workforce, which is disadvantaged by considerable geographic distance from metropolitan centres, has been the major challenge facing the rural water industry. On-the-job, self-paced instruction has offered the solution.

Learning outcomes, assessed by trained supervisors, cover the key skill competencies of each module. Competencies can be judged through the recognition of prior learning or assessment after module/work experience. Where further work is required for participants to gain the skills, workbooks facilitate the self-paced instruction, acting as a guide for both trainee and supervisor. Trainees are required to complete such exercise in consultation with the supervisor as directed in the module. This approach facilitates the development of a team based approach to supervision, with the supervisor acting as a coach and leader.

1.9 Participant relationships



2.0 FUTURE TRAINING DIRECTION

Historically, training for Industry has primarily been developed by the educational sector. However over the last decade Industry has had a bigger influence on their training/education needs.

The Australian National Training Authority (ANTA) is now responsible for the endorsement of nationally focussed training courses.

To enable ANTA to approve courses, the needs of Industry need to be identified. To this end ANTA put in place Industry representation groups called Industry Training Advisory Boards to provide information and to take responsibility for the development of competencies.

The role of each ITAB is to advise on trends in Industry and ensure the standards or competencies for different qualification levels are developed for ANTA endorsement.

In the past, courses developed have been curriculum centred, that is the emphasis has been on the training content and learning strategy. Since the emergence of the ANTA - ITAB process, the Competency Based Training philosophy has seen more emphasis on outcomes.

In recent times ANTA have developed a range of generic competencies that align with the skills and knowledge levels required by industry and educational institutions throughout Australia, known as the

Australian Qualifications Framework (AQF). The AQF ensures that qualification titles are the same in each state and are each tied to a common base set of criteria. In 1996 the Water Resources Management Program was reaccredited to the first set of National Water Industry Competencies with alignment to the new AQF. The next of courses are known by their nationally registered titles of:-

Certificate II,
Certificate IV

and Diploma of Water Resources Management which have replaced the original set of qualifications.

As part of the continual change in training bureaucracy and control ANTA have more recently put in place a two part training development concept, known as **Training Packages**

1. Endorsed Components
2. Non-endorsed Components

2.1 Endorsed Component

The endorsed component is made up of two parts, the national competency standards and assessment tools.

2.2 Competency Standards

These are a set of standards for a specific industry that reflect the skills, knowledge and aptitudes required for the varying levels of that particular industry. Water Industry standards are controlled by the National Utilities and Electrotechnology Industry Training Advisory Board (NUEITAB), (Utilities are Gas, Water and Electricity.)

The competencies are developed usually by a steering group and consultants for the appropriate Industry Training Advisory Board and then validated with Industry input before submission to ANTA for endorsement.

2.3 Assessment Tools

These are a set of guidelines to be used by workplace assessors to validate skills and knowledge against the endorsed competency standards.

2.4 The Endorsed Philosophy

It is important to recognise the paradigm shift for Industry Training. Given the endorsed components, any employee wishing to gain a qualification within an industry needs to prove they are able to meet the appropriate endorsed competency standards. This is achieved by the application of the endorsed assessment criteria.

There is now much less emphasis on how, when and where learning takes place, but instead more on the achievement of the unit of competency.

2.5 Non-Endorsed Component

The non-endorsed components of the Training Packages include such things as learning modules (several modules may make up one competency unit), guidelines and training provider advice. It may even include the learning material that can be used to help employees meet the requirements of the competency standards.

3.0 CURRENT STATE OF PLAY

The Water Industry sector of the NUEITAB has developed endorsed and non-endorsed components for AQF 2-6 which will equate in qualifications to Certificates 2,3, and 4, Diploma and Advanced Diploma (July 1998 the total NUEITAB package is with ANTA for final consideration for endorsement).

3.1 How Will All This Work?

Throughout Australia Training Providers will be required to meet a set of “quality control criteria” to become Registered Training Organisations (RTO’s). These organisations are registered with their appropriate State Training Authority to “deliver” the nationally endorsed package of competencies relevant to their Scope of Registration.

3.2 Delivery of the Qualification

There are a number of options Water Authorities will have to participate and provide opportunities for their employees to gain a qualification.

- ◆ **The Authority trains and assesses their own employees**

This option would require the authority to enter into an arrangement with an RTO where the authority takes the responsibility for on-the-job training and assessment of their employees. This arrangement would need to include training and assessing qualifications of the authority’s staff and assessment quality assurance processes. The RTO in return would control standards of quality and issue the qualification.

- ◆ **The Authority and RTO share the training and assessment of employees.**

This is similar to option one however the arrangement would involve sharing of the training and assessment tasks according to the available resources and expertise. The RTO again would control training and assessment standards and issue the Qualification.

- ◆ **The RTO trains and assesses the employees**

This option would see the RTO train, assess and issue the qualification.

4.0 THE WATER RESOURCE MANAGEMENT PROGRAM AND THE NEW QUALIFICATIONS

In essence, and although endorsed until the year 2001, the WRMP has now been “superseded” by the National Water Industry Qualifications. However the modules of the courses of the WRMP align with the National Competency Units and can be used as the non-endorsed components (the learning material) to help learners gain a nationally recognised qualification.