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**An Exposition of the Apprentice Assessment Systems
in Western Australia**

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Abstract

This study assessed the dilemmas associated with apprentice assessment systems in the New Apprenticeship Training and Assessment System (NATAS), (State based system), and the Modular system (National system) in Western Australia. Although both were described as competency-based systems these different schemes showed the variations that existed under this general description of training and assessment. The Modular system was a competency-based system which emphasised outcomes rather than the process of training.

The emphasis on the process of training was what sustained decades of traditional apprenticeship training. The competency-based approach, discussed in detail later, was a performance-based methodology. Conceptually the apprentice either *could* perform a given task or task element as set by a specific performance criterion, or *s/he could not*. The person was judged, based upon the performance outcome to be either competent or incompetent. The basic assumption was that the person could not be partially competent.

The competencies approach was a cornerstone of the Australian National training provision. It was administered by the National Training Board through an Australian Standards Framework. The key target group in this assessment of the competency area and the focus of this study was the young apprentice who would become a skilled tradesperson in a relatively short period of four years.

Supporting the apprentices in the NATAS system were monitors, lecturers, and employer's members of these groups, who together with apprentices were used to gain insights into the new training initiatives.

A previous study Williamson, Lowe and Boyd (1990) had looked at the Western Australian New Apprenticeship and Training System (NATAS). The intention was to

develop ideas further and in greater depth using qualitative methodology in the area of effectiveness of the training and assessment system. The research also had critically assessed the Modular system (National) which in most cases progressively replaced NATAS during the period of the research.

Key Terms and Phrases

Assessment - New Apprenticeship Training And Assessment System (NATAS).

Apprenticeship training in Western Australia is changing from a time served to a competency-based system. Workplace and TAFE based training and assessment procedures have been introduced based on the skills the apprentice should acquire over the term of the apprenticeship. When the parties complete a Probationary Employment Application, seeking to establish an apprentice, and if the employer is not previously approved, a Training Consultant from the Office of Industrial Training will visit the employer with an Employer Resource Survey. The employer then completes the Employer Resource Survey to show training capacity. On approval to train:

All parties will receive a detailed Trade Training Schedule to plan the apprentice's training.

1. A Workplace Assessment form will be sent to the employer to record the apprentice's skills during the duration of the apprenticeship.
2. An Industry Accredited Monitor or Training Consultant will visit the employer and apprentice during the apprenticeship (usually twice) to validate the employer workplace assessment of the apprentice's skills to date.
3. After successfully completing the apprenticeship the apprentice will receive a Trade Certificate. *Apprenticeships A Guide for Employers and Apprentices*. Office of Industrial Training, WA Department of Employment, Vocational Education And Training. (1992, p.7).

2. NATAS.(Assessment).

Assessment

(i) Work Place

NATAS is based upon the apprentice being trained to perform skills to a recognised industry standard; that of a newly qualified tradesperson. The assessment by the on and off-the-job trainer is criterion referenced and the apprentice is assessed as having achieved the skills or needing further training/remediation. The Trade Training Schedules list all the tasks and skills that the apprentice is required to have achieved in order to qualify for their trade certificate.

(ii) College.

During the college training program, the apprentice is instructed and assessed in the college listed skills (essential and additional) of the Trade Training Schedule

Australian New Apprenticeship Training and Assessment System (NATAS).

Commonwealth/State Joint Project Final Report.

WA Department of Employment and Training. April (1991, p.24).

3. (Modular) A Competency-Based System.

The essential features of a competency-based system were defined in a recent report of the Employment and Skills formation Council on a proposed entry-level training system in the following terms: Employment and Skills Formation Council, *The Australian Vocational Certification Training System*, March 1992.

“Essential aspects of a CBT system are that delivery, assessment and certification of training should relate to the identification of, instruction in, and demonstrated attainment of the knowledge, skills and applications required for effective performance at the required level, as defined in competency standards.” Peter Kearns and Associates.(1992, p.2).

4. What Is Competency?

Competency comprises the specification of the knowledge and skill and the application of that knowledge and skill to the standard of performance required in employment. The concept of competency includes all aspects of work performance. It includes:

- * performance at an acceptable level of skill;
- * organising one’s tasks;
- * responding and reacting appropriately when things go wrong;
- * fulfilling a role in the scheme of things at work, and
- * transfer of skills and knowledge to new situations.

The process of confirming that a person has achieved competency is “assessment”.

Competency Standards for Assessors. (1993, p.iv).

5. Competency.

The concept of competency focuses on what is expected of an employee in the workplace rather than on the learning process; and embodies the ability to transfer and apply skills and knowledge to new situations and environments.

This is a broad concept of competency in that all aspects of work performance and not only narrow task skills, are included. It encompasses:

- the requirement to perform individual tasks (task skills);
- the requirement to manage a number of different tasks within the job (task management skills);
- the requirement to respond to irregularities and breakdowns in routine (contingency management skills);
- the requirement to deal with the responsibilities and expectations of work environment(job/role environment skills),including working with others.

National Competency Standards, Policy and Guidelines, 2nd edn, October (1992, p.29).

Acronyms

AEC	Australian Education Council
ANTA	Australian National Training Authority
ASF	Australian Standards Framework
AVCTS	Australian Vocational Certificate Training System
CBT	Competency-based Training
CSB	Competency Standards Body
COSTAC	Commonwealth State Training Advisory Committee
DET	Department of Employment and Training (WA).
DEET	Department of Employment, Education and Training
DETYA	Department of Education, Training and Youth Affairs
DEVET	Department of Vocational Education and Training (WA)
ESFC	Employment and Skills Formation Council
GTS	Group Training Scheme
ITAB	Industry Training Advisory Board
MOVEET	Ministers of Vocational Education, Employment and Training.
NFROT	National Framework for the Recognition of Training
NTB	National Training Board
RPL	Recognition of Prior Learning
TAFE	Technical and Further Education
VEETAC	Vocational Education, Employment and Training Advisory Committee
VET	Vocational Education and Training
(UK).	
NCVQ	National Council for Vocational Qualifications
NVQs	National Vocational Qualifications
SCOTVEC	Scottish Vocational Education Council
SVQs	Scottish Vocational Qualifications
TDLB	Training and Development Lead Body

GLOSSARY

The following glossary of terms is an extract from “An Overview of Australia’s Vocational Education and Training System” published in July 1995 by the International Training Policy Section, Vocational Education and Training Division of the Department of Employment, Education and Training.

(Training and Development in Australia, Volume 23, Number 1, March 1996).

Accreditation – refers to official recognition by State or territory vocational education and training authorities concerning the contents and standards of a course,

delivery methods, and that curriculum and assessment method will enable the achievement of the required competency and national standards.

Articulation – the formal linkage between different levels of credentials, or different fields of study, including enterprise and industry-based training. Articulation arrangements allow horizontal or vertical movements between programs, or between education and employment.

Assessment – refers to the process of collecting evidence and making judgements on the extent and nature of progress towards the performance requirements set out in a standard, or a learning outcome, and at the appropriate point making the judgement whether competency has been achieved. Assessment under the National framework for the Recognition of Training (NFROT) provides for consistency as well as quality according to prescribed principles.

Australian Qualifications Framework (AQF) – covering the school, vocational education and training and higher education sectors, it comprises a set of principles and three key elements: levels of qualification, nomenclature, and descriptors for each qualification. Implementation of the Framework commenced in January, 1995.

Australian Standards Framework (ASF) – of the National Training Board specifies eight competency levels which serve as reference points for the development and recognition of competency standards.

Australian Students Traineeship Foundation (ASTF) – a national industry driven body to develop and support accredited upper secondary school-industry programs. The ASTF allows for the combination of structured learning in enterprises and off-the-job training in upper secondary schools. The Foundation will provide assistance in the school-to-work transition for many young people.

Australian Traineeship Systems (ATS) – a vocational training system which provides a combination of on- and off-the-job training in non-trades occupations for young people entering the workforce.

Australian Vocational Training System (AVTS) – provides a broad range of articulated pathways combining education, training and experience in workplaces. The AVTS is based on nationally endorsed industry and enterprise competency standards. Achievement of competency through the AVTS meets the National Framework for the Recognition of Training Principles, and leads to qualifications at Certificate levels 1-4 with the Australian Qualifications Framework. as a unified entry-level training system , the AVTS is highly flexible and will cover most industries than the previous apprenticeship arrangements. The implementation of the AVTS commenced in January, 1995.

Certification – the provision of a qualification or statement of attainment granted as a result of an assessment process, relating to both on-the-job and off-the-job elements where relevant. Under the Australian competency-based system this will involve gaining a specified set of competencies which will relate to the Australian Standards Framework developed by the National Training Board.

Competency-Based Training – the introduction of a competency-based approach to VET has been central to training reform. Competency-based vocational educational and training is the key strategy for involving industry in design, development and provision of training, so that training provision can be more closely tied to satisfying the needs of industry. Competency-based training is geared to the attainment and demonstration of skills and knowledge to meet industry-specified standards rather than to an individual's achievement relative to that of others in the group.

Group training arrangements aim to increase the structured training opportunities for apprentices and trainees. They achieve this primarily through rotation with a range of host employers, many of these being small companies that do not have the capacity to recruit and train apprentices and trainees in their own right.

Industrial Parties – the groups which make the industrial relations environment, i.e., the employers, employer associations, employees and unions within an industry.

Industry Training Advisory Boards (ITABs) – are tripartite, autonomous bodies either a national or State/Territory level that assist industry with skills formation, development of skills standards and skills recognition, as well as providing policy advice to governments.

In-House Training is conducted at a training facility at the workplace. Courses designed and given specifically for that particular workplace are called in-house courses.

Key Competencies – are the generic competencies essential for effective participation in the emerging patterns of work and work organisation. They focus on the capacity to apply knowledge and skills in an integrated way in work situations.

National Competencies Standards – are developed by Competency Standards Bodies for an industry or occupation, based on the skill requirements of the industry or occupation, and are approved by the National Training Board to serve as benchmarks for training, assessment and certification.

National Framework for the Recognition of Training (NFROT) – was established in August 1994, to obtain business and industry commitment to increasing the numbers of jobs and training places available to unemployed people. NETTFORCE can give interim authorisation for training packages, where there are delays, to enable employers to meet the requirements under the National Training Wage arrangements.

National Training Board (NTB) – From 1st July, 1995, incorporated into the new Standards and Curriculum council.

National Training Wage (NTW) – a simplified three-level alternative to multiple industry specific wage rates that apply to entry-level training arrangements. School-leavers, young people and adults are eligible to be trainees under the provisions of the NTW.

Off-the-Job Training – refers to training which takes place away from the normal work situation. Such training is usually organised in an area specially equipped for a training purpose. This includes training off the premises, in vocational education and training institutions such as TAFE colleges or industry skill centres, or on the premises in an area specially equipped for training purposes.

On-the-Job Training – is the acquisition of skills, knowledge and attitudes occurring in the trainee's normal activities in the workplace.

Pathways - an interrelated set of education , training and/or employment experiences. They provide for some identified outcome which may be an educational qualification, entry to a subsequent pathway or a particular employment goal.

Qualification – formal certification approved by relevant approved bodies, in recognition that a person has achieved learning outcomes relevant to identified individual, professional, industry or community needs.

Recognition of Prior Learning – recognition of what individuals know or can do, before undertaking a task, job, or course of study or training, regardless of where and how the knowledge and skills have been acquired, or determination, on an individual basis, of the competencies obtained by a learner through previous training, work and/or life experience and advanced standing the learning is entitled to as a result.

Registered Training Provider – a public or non-government provider approved by a State or Territory recognition authority to deliver any accredited course or approved training program.

Skills Centres – are training centres owned either by industry or individual enterprises and have met Government standards in terms of training curriculum. The Federal Government has encouraged industry and individual firms to develop their own training centres through one-off grants of up to 50 per cent of their establishment costs. The ongoing operating costs will be the responsibility of the management group. Many of the centres provide training in advanced technology to enable Australian workers to be trained in and kept abreast of the latest local and overseas trends and developments in their industry.

Standards and Curriculum Council – established with the ANTA structure from 1 July 1995, and is responsible to Ministers through the ANTA Board. It covers competency standards, curriculum, the national recognition of training , assessment, quality assurance and the Australian Qualifications Framework as it relates to VET.

State Training Authorities – agencies of State and Territory Governments which provide official recognition of trainers and training courses (and sometimes provide training courses).

Structured Workplace Learning – in Australia is undertaken through skills centres, apprenticeships and traineeships, group training and in-plant training.

Technical and Further Education (TAFE) – the TAFE system is the major public provider of vocational education and training in Australia. The main constitutional responsibility for vocational education and training, including TAFE, resides with the six State and two Territory governments.

Vocational Education and Training (VET) – most vocational education and training in Australia is provided by Government funded, nationally recognised networks of Technical and Further Education (TAFE) institutions. There is also a growing number of private sector training providers offering accredited training to the public. In addition, less formal adult and community education providers have a role in the VET system, and much training occurs on-the-job, both in informal and in structured settings.

Contents

Volume 1

Abstract	2
Key Terms and Phrases	4
Acronyms	6
Glossary	6
Contents	11

Chapter 1 Introduction

Background and Significance	15
Training Reform Agenda	20
Assessment	23
Modular Training System	26
The Assessor's Role	27
Industry Accredited Monitors	27
Objectives	28

Chapter 2 Literature Review

Introduction	32
Assessor Competency	41
Lead Bodies (UK)	44
Australian National Training Authority	49

Chapter 3 Research Methodology

Introduction	51
Ontology	52
The Positivist Ontology	52
Constructivist Ontology	54
Epistemology	55
Methodology	57
Qualitative versus Quantitative Research	58
Research Procedure	60
Group Selection Process	60
Choice of Methods and Research Setting	63
Data Analysis	66
Limitations of research	69
Weaknesses	69
Strengths	70
Summary	70

Chapter 4 Pilot Study

Introduction	72
Assessment Methods	73

Trade Training Schedule	74
Resources	77
Modular	78
Assessment	80
Reliability	82
Fairness/Flexibility	83
External Assessment	85
Time	86
Off-Job v On-Job	86
Standards	87
Shortfalls in Standards	89
Assessor Competency	91
Testing	91
Selection	92
Summary	92

Chapter 5 Discussed Findings

Introduction	95
Theory: (AQI) Assessment Quality Interpolation	96
Monitors	98
Assessment Methods: monitors	98
NATAS: monitors	102
Modular: monitors	105
Conclusion	109
Assessment: monitors	113
Assessment Reliability: monitors	114
Assessment Validity: monitors	116
Assessment Fairness: monitors	118
Grading	119
External Assessment: monitors	121
Time Limitation: monitors	123
Standards: monitors	125
Modular: monitors	127
Assessors Competency: monitors	129
Testing: monitors	132
Selection: monitors	134
Summary	134
Emergent Themes: monitors	134

Chapter 6 Discussed Findings

Lecturers: Technical and Further Education (TAFE)	142
Introduction	143
Assessment Methods: lecturers	143
Assessment: lecturers	145
Assessment Validity: lecturers	146
Assessment Reliability: lecturers	148
Fairness/Flexibility: lecturers	149
External Assessment: lecturers	152
Standards: lecturers	153
Shortfalls in Standards: lecturers	161
Summary	164

Emergent Themes: lecturers	164
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Chapter 7 Discussed Findings

Employers	175
The Employer Perspective	176
Introduction	176
Assessment Methods: employers and employer bodies	176
NATAS	177
Modular	181
Assessment: employers and employer bodies	186
Assessment Validity: employers and employer bodies	188
Assessment Reliability: employers and employer bodies	191
Fairness/Flexibility: employer and employer bodies	193
External Assessment: employers and employer bodies	198
Standards: employers and employer bodies	202
Shortfalls in Standards: employers and employer bodies	205
Assessor Competency: employers and employer bodies	210
Testing: employers and employer bodies	212
Selection: employers and employer bodies	215
Summary	216
Emergent Themes: employers and employer bodies	216

Chapter 8 Discussed Findings

Apprentices	226
Apprentices Perspective	227
Introduction	227
Assessment Methods: apprentices	228
Modular	228
Assessment: apprentices	230
Assessment Validity: apprentices	230
Fairness/Flexibility: apprentices	231
External Assessment: apprentices	236
Standards: apprentices	237
Industry Standards	237
Shortfalls in Standards: apprentices	240
Assessor Competency: apprentices	241
Testing: apprentices	242
Selection: apprentices	243
Summary	244
Emergent Themes: apprentices	244

Chapter 9 Conclusions and Recommendations

Introduction	252
Superstructure	252
Infrastructure	255
Conclusions	257
Concerns of Lecturers	257
Employers differences in adhering to the assessment criteria	258
Concerns of Monitors	260
Concerns of Apprentices	261

Recommendations	262
The Ideal Systems	262
Lessons learnt from (AQI) theory	271
References	272
Additional Reading	276
Volume 2	
Appendix A Chapter 4 Pilot Interview Notes	280
Appendix B Chapter 5 Interview Notes	285
Chapter 6 Interview Notes	
Chapter 7 Interview Notes	
Chapter 8 Interview Notes	
Appendix C..Focus Questions.	397
Appendix D Chapter 9 Interview Notes	398

Chapter 1

Introduction

Background and Significance

A history of apprenticeship training and assessment in Western Australia showed a move towards greater improvements in existing apprentice training schemes with the desired intention of increasing the standard of apprenticeship training. The importance of this training and assessment issue was related to the final product of apprenticeship training, the skilled tradesperson. In a country where primary and secondary industry were still important sectors, the level of trades' skill was of national importance. One of the chief motivators for this study, and comparable studies in England (which had acted somewhat as a model for Australian training), was the relatively recent emergence of apprentice training that was other than the traditional 'time served' method. Amongst other changes, contemporary apprenticeship training had extended the place of training from workplace (on-job) to places of formal education (off-job).

Time served – For many years, almost since the beginning of formal industrialisation, apprenticeship training was based on the time served approach. At first, apprentices 'served their time' over a five-year period under the protection and mentorship of a tradesperson (at the time known as a tradesman). Later, as new technologies and more advanced machinery came along, and more trades required the apprentice to attend technical college and pass basic courses, the 'time' was reduced to a four-year period. After this the apprentice was given his/her indentures and was considered to be a tradesperson. The time spent learning at the feet of the master craftsman was considered sufficient to give an average apprentice the necessary skills to be considered a qualified crafts-person. This was very much a process-oriented approach and there was an implicit understanding that as well as technical skills, cultural patterns of behaviour, appropriate to the "culture of the craft", would be transmitted. Although there would be opportunistic trade tests set along the way, with the apprentice graduating to more difficult tasks, these were often a function of the type

of work undertaken by the mentoring tradesperson and his/her own skill level. The emphasis on the time served processual method was what sustained decades of traditional apprenticeship training.

Around the 1980s in the 'parent' industrial setting in England, grave concerns over the ability of various processual methods of training to enhance the country's competitiveness took place. This led to an in-depth study of young persons' training arrangements by organisations such as the Institute of Manpower Studies for the National Economic Development Office (1984). An important study by Handy (1987), which repeated the formula of 'Competence and Competition' National Economic Development Office (1984) pointed out that other countries organised training in a more effective and competitive way. One of the outcomes was that the traditional form of apprenticeship, was shown to have drawbacks, particularly in the assessment area. It was suggested that the more fluid, less formal, tradesperson-dependence method of assessing apprentices needed to be made more outcomes oriented with a wider assessment responsibility than the tradesperson alone. The concept of monitoring entered the apprentice training arena for the first time in a systematic and formal way. At this stage, in the development of Australia's arrangements, some experimentation was still being made, particularly concerning the mix of monitoring and assessment variables, and this research aimed to report on emerging issues from one such mix.

For reasons stated above, Australia was in the throes of change concerning the apprenticeship system. In 1990 a Western Australian State system of apprenticeship assessment was introduced and this was chosen as the context upon which to report. The total population of apprentices in Western Australia in 1994 was approximately 11,000, which did not include 1,200 trainees. Industry was made more responsible for the standards of assessment of apprentice training. The State system was called the New Apprenticeship Training and Assessment System (NATAS). Initially, arrangements were made for 170 monitors specially selected from their relevant industries in the NATAS programme, to monitor apprentices. Later, reorganisation within the Office of Industrial Training changed the emphasis of the monitoring

system and dispensed with a number of monitoring staff in the Modular scheme of assessment that emerged during this study and described in more detail later. It was a multiple group assessment environment with clearly defined groups involved in apprentice training assessment procedures. Because of the contrast with the informal and person assessment arrangements previously applied, NATAS was chosen as a vehicle for examining apprentice training assessment. The research was particularly interested in the views held by key stakeholders within the multiple perspective's of those involved within the NATAS-type apprentice assessment system (Williamson, Lowe & Boyd 1990; Smith, E. 1985). The research aim was to explore these perspective's 'from the inside out', contributing to the rather sparse amount of qualitative research reported in the literature at such a point of change. In an environment of continuous change and improvement, the findings would be informative for future initiatives.

Another important variable within the training environment was the move to competency-based training (as indeed was the case in the English setting with Australia following suit) (Kearns, 1992; COSTAC, 1989; DOLAC, 1988). A competency-based approach to apprentice training usually involved documented competencies. These typically were achieved by taking a well delineated set of tasks, breaking them down into discrete elements and attaching to each element an observable (or in the case of the knowledge component demonstrable) performance standard or criterion. A range of variables, under which the required behaviour could be demonstrated, accompanied this standard. The performance standard needed to be achieved under the specified range of variables in order for the trainee to be considered competent. This was designed as a pass/fail situation rather than the traditional grading system usually employed in education and sometimes within Technical and Further Education (TAFE). The competency-based approach, discussed in detail later, was a performance-based method. Conceptually, the trainee either *could* perform a given task or task-element as set by specific performance criteria, or *s/he could not*. The person was judged upon the performance outcome to be either competent or incompetent. The basic assumption here was that a person cannot be partially competent.

The concern over occupational competency within industry in Australia, especially in the areas of performance standards and assessment in the workplace, had resulted in reviews of industrial based training. The chairperson of the Apprenticeship Tribunal, E. Smith (1985), completed a report *The Review of the Apprenticeship Training System in Western Australia*. The Smith report reviewed the system, particularly the assessment arrangements. As a result of discussions following the report with various representatives of the industry and education sectors, it was recommended that a new apprenticeship training and assessment system be set up to be called the New Apprenticeship Training and Assessment System (NATAS). In keeping with the formalised approach within the competency framework, a central focus was the trade training schedule (TTS). This was a key document because it represented the full syllabus of training for the selected portion of apprentice training under consideration for assessment of competency.

One of the major features of NATAS is the development of trade training schedules (TTS) which is the syllabus of training made up of task areas containing a number of essential and additional skills. The schedules also provide the necessary criteria and rules for assessment for each trade. (1991, p.19)¹

An important aspect of the TTS was its integrative relationship with industry. The TTS was developed by tripartite industry groups within all trade areas to ensure that the TTS was relevant to the modern needs of industry. This was a feature that contributed to the decision to conduct this study because the integration of such groups could not be taken for granted as making a successful contribution within the set assessment arrangements. At the very least the effect and impact of key stakeholding groups like these needed to be examined. By 1990, a further report, provided by project manager Peter Han, *An Evaluation Study of the Development of NATAS in Western Australia 1986-1989*, (NATAS 1989), sponsored by the Department of Employment and Training (WA) became operational.

Two key reports indicated concerns that needed further study. These were, Williamson, Lowe and Boyd (1990), *Evaluation of the Monitoring and Validation*

Procedures in the New Apprenticeship Training and Assessment System (NATAS) and the Western Australian Department of Employment and Training Commonwealth/State Joint Project, (1991), The Western Australian New Apprenticeship Training and Assessment System (NATAS), Final Report, Western Australia.

These reports identified a number of key issues that were adopted as central to the theme of this research, issues that could only be addressed by locating the research inside of the NATAS assessment environment.

The majority of employers reported that they felt comfortable with the on-the-job assessment of the apprentice but requested assistance in the acquisition of assessment skills (NATAS, *Final Report 1991, p.9*).

This was an interesting issue because the employer, in the main, was responsible for the majority of on-the-job assessment but the report seemed to indicate that there was a problem with employer assessment skills. If this were so, or perceived to be the case, this would be important information, not only for NATAS but also for the iterations that would conceivably follow.

A further key issue identified was,

Procedures need to be developed to enable a review of trade training schedules to incorporate standard definition of skills to remove any ambiguity with regards to the standardisation of criteria used to assess an apprentice. (NATAS, *Final Report 1991, p.9*)

Research into a critical assessment of the monitoring and validation procedures in NATAS should provide valuable data to enable ambiguities in the standardisation of criteria used in apprentice assessment to be identified, providing information for future planning. This research was especially valuable because it was timed to be conducted four years after the inception of the scheme in 1990. Therefore, the findings would, in fact, contribute to any subsequent review.

Training Reform Agenda

This research was developed within the Australian 'National Training Reform Agenda'. (NTB, *National Competency Standards Policy and Guidelines*, 1992) 2nd Ed. As previously stated, the focus was on Apprentice Training within a competency framework. The investigation concerned the assessment of Apprentices during their formal apprentice training. The study would be supported by other research in the UK and Europe that may suggest alternative methods of monitoring and validation within similar competency-based systems. The Commonwealth/State Training Advisory Committee (COSTAC) *Report* (1990, p.43) found, for example:

The only countries visited which have established formal bodies with a national standard setting function are West Germany (BIBB) and the UK (NCVQ and the Training Agency) although the EEC body CEDEFOP has undertaken the development of a standards-based matrix which will facilitate the comparison of vocational qualifications normally required for the performance of occupations which are common across the member countries of the EEC.

This indicated the importance of this research, and its relationship to other countries with similar training and assessment problems. However, some countries have had formal bodies in place for some time. The West German 'Bundesinstitut für Berufsbildung' (BIBB) was set up in 1976 and the European Centre for the Development of Vocational Training (CEDEFOP) in 1975 by European Economic Community (EEC) member countries. Germany provided a workable competency-based training and assessment model that has attracted worldwide interest.

The COSTAC *Report* (1990, p.28) stated:

West Germany is the only country visited by the mission which predominantly has a structured work based vocational education and entry level training system. It is known as the "Dual System" and there is general acceptance by government and both sides of industry in Germany that it is a most effective form of entry level training.

The background to the research was influenced by a number of approaches to competency-based training in other countries. Many countries are undergoing a period of 'structural adjustment' as a solution to the problems of low productivity in the face of international competitiveness.

The COSTAC *Report* (1990, p.4) also suggested:

The process of structural adjustment is presently high on the agenda of most OECD countries and a number of other countries are experiencing similar problems to Australia's and see vocational education and training as an important component of necessary strategies. For example, the Federal Labour Department in the USA is moving to modernise and expand its apprenticeship training arrangements and is considering ways in which the differences between the States can be rationalised.

Vocational Education and Training (VET) was seen as a fundamental solution to the problem of a workforce that required an update in education and skills in the face of increasing international competition. It is interesting to note that Australia was not alone in this regard but that other countries were having similar problems.

The COSTAC *Report* (1990, p.41) further mentioned:

In the USA, The 'Work-Based Learning: Training America's Workers Report' proposes standards-based training and certification. The report, prepared by Dr. James Van Erden, examines current weaknesses in US training methods and makes a series of recommendations for the future. His conclusion is that a standards based training system, modelled on the apprenticeship concept is the only way to achieve quality in training.

COSTAC sent a mission to investigate the overseas situation in the United States, Canada, France (OECD), Germany, Sweden, The United Kingdom and Singapore. The result was the *Report of the Overseas Mission to Study Developments in Vocational Education and Training* (1990).

Following a report of five countries, Japan, Germany, France, USA and UK. (Handy 1987), concluded that the Government in the UK realised, as had Australia, that great improvements could be made to National Training, including the youth area.

The UK started this process in the late 1970s with initiatives such as (YOP) Youth Opportunities Programme (1978) which was followed by the (YTS) Youth Training Scheme (1983).

The Training for Skills YTS *Guide to Content and Quality on YTS/Approved Training Organisations* (1986, p.2) mentioned,

The aim of YTS is to provide a foundation of broad-based vocational education and training and planned work experience, which gives all trainees the opportunity to obtain a vocational qualification related to competence in the workplace, or to obtain a credit towards such a qualification.

Many of these trainees completed the same sort of training and further education (e.g. (UK) City and Guilds qualifications) as apprentices and in fact some obtained apprenticeships at the end of the programme.

These UK schemes were designed to resolve the twin problems of youth unemployment and lack of training skills within industry at a time of rapid changes in the nature of work. There was a shortfall in the labour market for skilled workers and it required a government initiative to reduce this gap by giving young workers opportunities to achieve skilled status. The Manpower Services Commission (MSC), in 1981, launched the New Training Initiative (NTI). The sentiments expressed here, as well as the adherence to most of the vocational qualifications frameworks adopted by Australia under the Australian Standards Framework (NTB, *National Competency Standards Policy and Guidelines*, 1992, 2nd Ed, p.27) suggested that some of the issues and concerns articulated within this context could well have been applicable within the NATAS environment. The 'New Training Initiative' had three major objectives:

- a) to develop skill training including apprenticeships in such a way as to enable people entering at different ages and with different educational attainment's to acquire agreed standards of skill appropriate to the jobs available, and to provide them with a basis for progression through further learning;
- b) to move towards the position where all young people under the age of 18 have the opportunity either of continuing in full-time education or of entering a period of planned work experience combined with work-related training and education;
- c) to open up widespread opportunities for adults, whether employed, unemployed or returning to work, to acquire, increase or up-date their skills and knowledge during the course of their working lives. (*Towards an Adult Training Strategy A Discussion paper*, Manpower Services Commission 1983, p.3)

However, these were not accepted unequivocally. Keep (1987) echoes writers at the time who were concerned, amongst other things with the apparent lack of extensive and prolonged discussion and debate over such an important thing as changing the face of youth training Lewis (1984) and Whiteley (1987). Keep (1987) observed that 'The Government and the MSC were seeking through the New Training Initiative, of which YTS was only one strand, to achieve what amounted to a quantum leap in both quality and quantity of training in Britain.' He and others such as Young (1984, p.449) went on to say that these were put in place rather rapidly and provided opportunities for some to obtain basic qualifications with the added advantage of reducing youth unemployment. There appeared to be some ambiguity about whether the motive for the youth training initiative was to reduce youth unemployment or to address productivity and competitiveness through high quality training (of which assessment would play a key role). The new arrangements were based on the curriculum required by the City of Guilds Trade Qualifications (CGTQ) for the theory aspects, and the early stages of trainee apprentice requirements within industry for the more practical elements. The duality here bears a close resemblance to the Australian Technical and Further Education (TAFE) and industrial training design. In the English case, the training initiative provided a foundation for further skilled training by the fostering organisations. However, critics were to report that the measure of success was to some extent for the fortunate few, Lewis (1984) and Whiteley (1987). Although the overseas and particularly English experiences informed (and perhaps cautioned) the Australian apprentice training designers the Australian setting differed in several ways, one of which was State responsibility for apprentice training and in particular for the assessment component which was seen as vital for the success of apprentice training.

Assessment

Effective assessment is a vital tool in the successful implementation of competency-based training and consequently the reform of the Australian system of vocational education and training.(Rumsey 1994, p.3)

Assessment was recognised in Western Australia as a critical part of any apprenticeship system because it provided a quality control against recognised trade

standards. The process involved collecting evidence and making judgements on performance skills shown by apprentices during and at the end of training. The main aim of assessment was to verify the achievement of competency in the case of apprentices.

Some of the comments from the literature showed a shared view about the nature of competency and what had to be achieved. Thompson (1989, p.87) stated, 'In CBT [Competency-based Training], trainees practise tasks so that they experience learning and when they are ready they demonstrate their competence.'

Brinkerhoff (1987, p.46) stated,

Evaluation in business and industry programs is geared to the 'bottom line'. The four-step model developed by Donald Kirkpatrick (1976) and broadly adopted by business and industry focuses completely on outcome. Kirkpatrick identified four levels of training outcome: (1) reactions, (2) learning, (3) on-job behaviors, and (4) impact on the organisation.

Some of the key elements such as learning and on-the-job behaviours within the Kirkpatrick model were explicitly present in the NATAS system. In particular, the model and other like it (as below), focused the attention on assessment and training evaluation.

Hamblin (1974) developed the idea that 'training leads to reactions which leads to learning which leads to changes in job behavior which leads to changes in the organization.' In their more extensive UK model Alligier and Janak (1989, p.331) mention 'The power of Kirkpatrick's model is its simplicity and its ability to help people think about training evaluation criteria.' A number of other models similar to Kirkpatrick were produced by the following, (Jackson & Kulp 1978; Warr, Bird & Rackman 1970).

Erfineyer, Russ and Hair (1991, p.19), mentioned 'The training evaluation literature suggests that training outcomes are multi-dimensional and thus require multiple criteria to be evaluated' (Cascio 1987; Goldstein 1986; Landy 1989; Wexley & Latham 1981). The issue here for training assessment designers was that multi-dimensionality tended to indicate the difficulties of the assessment process, especially

in the area of competency-based training where all outcomes needed to be evaluated for overall competence.

Competency-based assessment, in keeping with these approaches, had to be focused on the outcomes of the training. This was understandable because the need was to assess the capability of the person to complete the task to the standards required by industry. The 'bottom line' in industry tended to revolve around the issue of job competence. In the case of apprentices during training the focus would be on formative competency activities and at the end of the training process the transition to competent tradespersons.

Added to the multi-dimensionality problems in assessment, there was the issue of the diverse and varied industrial base within which NATAS operated. Also the complexity of the skills training in organisations varied in size and specialisation and it was very difficult to establish and maintain uniform standards for assessment in this environment. Erffmeyer, Russ and Hair (1991, p.29) suggested development problems in research into the evaluation of industrial training.

Training evaluation has been described by Goldstein (1980) as evolving through a series of phases. The first phase is characterized by anecdotal trainer-trainee relations, the second by scientific evaluation so rigorous that it fails because it ignores organizational constraints. The third phase is characterized by those individuals who recognize that training programs should be evaluated – but also recognize organizational constraints and compensate by concentrating on the quality of the evaluation.

Erffmeyer, Russ and Hair (1991, p.29) also pointed out that,

The predominate measure used in conducting a person assessment was supervisory judgement. The fact that many valid objective performance measures are being overlooked in favour of this subjective input should be of concern.

Also Goodstein and Goodstein (1991, p.267) mentioned that,

Evaluation of training involves more than simply documenting how many contact hours of training have been provided or what percentage of employees has been through a particular program.

Although the comments of writers like those above were relevant and important, it was proposed here that whilst some assessment had to be subjective, any assessment process needed documentation and it was important to make the system as objective as possible to achieve the training aim.

The effectiveness of the assessment of apprentice training had important implications for the training standards of skilled tradespersons within Western Australia. Also an integral part of competency had to be the concept of assessment otherwise the system might be considered suspect without this essential component.

The significance of the study was linked to the concept of effective assessment of the apprenticeship training and assessment system, and was highly significant in today's competitive environment. The new competency-based system, as opposed to the previous model of apprenticeship, which was time served, aimed to reflect this effectiveness. The characteristic of 'time served' that was of interest in this study was that there was no formal structure of assessment such as that embodied in the monitoring of the (NATAS) trade training schedules (TTS) or the subsequent Modular system with its integrated assessment component.

Modular Training System

The Modular training system replaced the NATAS system in Western Australia in most, but not all cases. The research was conducted primarily within the NATAS system and many of the insights came from there. However, during this research the Modular system was adopted and the opportunity was taken to study this as an additional context. The reason for the change to Modular was that NATAS was based on numerous separate skills which were individually assessed. The new system was designed to group these skills in modules that related to jobs in the workplace. Also, these modules had an assessment system built into its structure. It should be seen as an attempt to improve the assessment of the previous system. The modules were to an extent freestanding and could be grouped together in a variety of ways. A major difference with NATAS was that there was no provision for external monitoring – assessment was carried out as required by employers and TAFE. This

resulted in a potential lack of independent assessment by skilled tradesmen that may have contributed to a variation of apprenticeship standards perceived by industry.

The Assessor's Role

It was important to note that the assessor standards referred to the assessment role rather than the assessment occupation.

The role of assessment is often integrated with a wide range of other functions, such as on- or off-the-job training, supervision, quality management or personnel management. ... It is essential that, whenever possible, the assessment process should be encompassed in the normal work environment, and that the person being assessed is involved in and understands clearly the assessment procedure. *Competency Standards for Assessors*. (1993, p.v)

Australian competency standards for assessors were developed and put into practice during 1993 when they were first established. They were subsequently extensively reviewed and endorsed in 1995. This showed the increasing importance of these assessor standards in the process of assessment against competency standards. The assessor's role was not confined to a particular category of person in the workplace, so national guidelines were essential to increase the uniformity of standards interpretation within competency-based systems.

Industry Accredited Monitors

A category of assessor that has a specific role in the NATAS scheme that was in operation in Western Australia, was the industry monitor. Monitors were specially selected tradespersons approved by the relevant industry. However, because of the fragmented nature of local industry, industry was not entirely aware of the role of monitors as indicated by the following report on the NATAS system. The NATAS *Final Report* (1991, p.9) identified a further issue,

The continued use of industry monitors for the validation exercise is supported by a very large majority of respondents in the evaluation study. However, the role of monitors was confusing to many as there was a distinct absence of any publicity for the pilot validation program.

Notwithstanding the problem of communication and dissemination of the monitor role, it was clearly specified in guides to employers. WA Department of Vocational Education and Training (1992, p.7) (DEVET).

Industry Accredited Monitors are qualified tradespersons from industry engaged on a consultancy basis to validate the employer's workplace assessments.

The purpose of the validation visit is to ensure that the apprentice's workplace assessment completed by the employer is an accurate reflection of the apprentice's demonstrated competency in the skills that have been assessed.

The role of the monitor, according to the guidelines, was to validate the employer's workplace assessments and report back to a training consultant for further action if considered necessary. This would provide the 'tradesperson' expertise within the competency activities. These qualified tradespersons from industry were not required to give training advice, but simply to monitor actual behaviours and employer's assessments. As the employer would be seeking solutions to training problems, an issue for investigation would be whether there was any confusion here.

These issues identified in the above reports formed a very useful basis for further in-depth research into the monitoring and validation procedures in NATAS. They in fact identified some gaps in the existing body of research knowledge that had to be addressed if assessment schemes (NATAS) were to be effective and consistent.

Objectives

The research objectives of the critical exposition of the monitoring and validation procedures in the Western Australian apprenticeship assessment system at a particular stage in their development had arisen from core questions and additional related questions in the wider literature and that specifically applying to NATAS and the Modular system. These provided a background to the more specific questions that followed and provided a basis for analysis of the research data and the perceptions of the groups involved namely, monitors, lecturers, employers and apprentices.

The first core question was, 'Is the monitoring and validation component of the competency-based approach in industry perceived as effective at the trainee level, by monitors, lecturers, employers and apprentices?'

This was a critical question in view of recent changes occurring in the Office of Industrial Training in Western Australia. The original NATAS scheme had been replaced by a modular format and the emphasis has been placed on industry and TAFE to complete the assessment requirements. The intention in 1995 was to contract out the monitoring function to outside agencies when considered necessary. Therefore, the timing of this study was most important in view of the above changes in assessment. Staff involved in this activity had now been assigned other duties with the resultant loss in experience and, more importantly, local knowledge, which had been developed over the years. This was a factor that may conceivably have had impact upon comprehensive assessment.

The second core question was, 'To what extent are the competency-based approaches outlined in the competency literature and guidelines practised as espoused by training providers and trainers?'

This was an interesting question because it appeared that only four trades in 1994 were in fact using a competency approach in Western Australia that would be recognised as such and these were metals, electrical, cooking and hairdressing. This covered approximately 40%-50% of the apprentice population. Therefore, the intention was mainly to focus the research into these trades because the guidelines would be more relevant to the study and the Williamson (1990) *Report* on the NATAS scheme. However, other apprentice trades would be included to ensure an adequate balance and because there was a general move towards competency training, based on outcomes, in all trades with the Modular scheme within a fluid changing apprenticeship system.

The research objectives also included some additional related questions, firstly 'Does a comparison of the competency-based training system at the skilled craftsman level

between overseas (e.g. UK) and Australia reveal the effectiveness of the validation system?' A comparison should reveal some interesting approaches to solving similar assessment problems within Western Australia.

The German example was a case in point. The Commonwealth/State Training Advisory Committee (COSTAC) *Report* (1990, p.50), mentions,

The West German Dual System had a comprehensive competence assessment examination at the completion of training which must be passed in order for an individual to obtain a credential as a skilled worker (or tradesperson).

This shows that other competency-based systems see the importance of some form of final test before a tradesperson is considered qualified to practise in industry.

Also, differences in the competency-based training systems provided alternatives to the system in place in the Western Australia. The other factor of considerable importance was the question of skills standards required at the craftperson level.

COSTAC (1990, p.42) mentioned the UK view on skill standards,

In a recent Training Agency publication, *Standards for Success*, the rationale for national standards is succinctly explained ... establishing clear and precise occupational standards for all sectors of industry and commerce has a clear purpose – to improve our competitiveness in international markets.

Differences within this area might have provided interesting comparisons that would impact on the relevance of the skills standards in use in Western Australia. Overseas comparisons also provided a useful yardstick to measure the effectiveness of the validation system.

The second additional related question was as follows, 'To what extent is the competency-based approach perceived to be more effective than the learning process approach within industrial training at the skilled craftperson level?'

These general questions, although not specifically asked by the interviewer, provided a backdrop to the more specific focal questions that emerged as the research developed.

Given the discussion so far, it was clear that there were many related areas that could be applied to the assessment activity within the competency setting. It was judged, given the preliminary reading, that respondents would be best able and willing to answer questions about assessment if they were asked, about why they thought assessment was being conducted; what they saw as being the assessment criteria; how they saw this being put into practice. In other words, what were the methods being used, and of particular importance in this qualitative study, whether they perceived the assessment to be good enough? These areas were pursued through a set of focal questions within which the pilot study, reported in chapter two, was conducted.

Chapter 2

Literature Review

Introduction

With similar reasons as the countries studied in the Handy report, (1987) that was to increase the country's competitiveness through better standards of productivity and higher quality of training arrangements, Australia set out to reform its national training arrangements. Designed to have both National and State training arrangements, the one agenda, the State agenda would operate within the broader national context. The National Training Reform Agenda's main objective was to set up a national vocational education and training system. Industry, unions and government had endorsed this process and a number of organisations were set up to implement and co-ordinate this strategy.

Agreement has been fostered through arrangements set in place by the Ministers of Vocational Education, Employment and Training (MOVEET), their tripartite advisory group, the Vocational Education, Employment and Training advisory Council (VEETAC), The National Board of Employment Education and Training (NBEET), The National Training Board (NTB) and the Australian Education Council (AEC). The agreement of Governments to establish, during 1993, the Australian National Training Authority (ANTA) is a further step in the evolution in the National Vocational Education and Training System. (*Framework for the Implementation of a Competency-Based Vocational Education and Training System* 1993, p.2)

Kearns (1992, p.24) mentioned that this period of change in Australia produced the development of a Vocational Education and Training (VET) system which was influenced by the Finn (Australian Educational Council. 1991, *Young People's Participation in Post-Compulsory Education and Training*), Mayer (Australian Educational Council 1992, *Putting General Education Together*) and Carmichael (Employment and Skills Formation Council, 1992, *The Australian Vocational Certificate Training System*) reports. This was to be a competency-based vocational education and training system. These proposals also influenced the development of a National Framework for the Recognition of Training (NFROT) of the National Training Board (NTB), which was established in 1990. The intention was to develop a

structure of vocational education and training credentials with a more unified system called the Australian Vocational Certificate Training System.

The National Training Reform Agenda had been directly influenced by a number of reports regarding key competencies within apprentice training.

The Finn Review (1991) of the (Australian Educational Council 1991) 'Young People's participation in Post-Compulsory Education and Training' suggested seven general competencies to be included in training. These were further defined by the Mayer Report (Australian Educational Council 1992, *Putting General Education Together*), (*National Competency Standards, Policy and Guidelines*, 2nd edn, 1992, p.44) as:

1. Collecting, analysing and organising information;
2. Communicating ideas and information;
3. Planning and organising activities;
4. Working with others in teams;
5. Using mathematical ideas and techniques;
6. Solving problems;
7. Using Technology.

The importance of general competencies are that they provided an additional framework for integrating the more specific, or work related, competencies within the competency-based training system, and further effective development of the person in further education and life in general. These broad competencies equipped the individual to be more flexible within a changing workplace.

The Mayer Report (Australian Educational Council 1992, *Putting General Education Together*), (*National Competency Standards, Policy and Guidelines*, 2nd edn, 1992, p.44) defined this as,

Key competencies are competencies essential for effective participation in the emerging patterns of work and work organisation. They focus on the capacity to apply knowledge and skills in an integrated way in work situations. Key competencies are generic in that they apply to work generally rather than being specific to work in particular occupations or industries. This characteristic means that key competencies are not only essential for effective participation in work but are essential for effective participation in further education and adult life more generally.

Training Torque No.3 May (The Training Reform Agenda 1992, p.5), in writing about the Carmichael report, (Employment and Skills Formation Council, 1992, *The Australian Vocational Certificate Training System*) stated,

This is a Report by the Employment and Skills Formation Council (ESPC) on the Australian Vocational Certificate Training System (AVCTS) which was released in March 1992. The Carmichael Report endorses the Finn Report targets, with some modifications, and then develops an integrated package for achieving those targets by 2001.

The Confederation of Australian Industry (1991, p.5) defined competency standards as,

Competency standards set down the knowledge and skills required to perform jobs. They also establish the level of performance, the level of knowledge and skill that is required in a specific range of jobs in the industry in question.

These were the basis of a consistent set of standards developed throughout Australia.

The Australian Vocational Certificate Training System (AVCTS) was based on the Australian Standards Framework (ASF) and included the national competency standards under the direction of the National Training Board. The ASF was developed into eight levels of competency and provided a link between the work and education systems.

The competency levels framework relationship described by the Confederation of Australian Industry (1991, p.43), in industrial terms was as follows,

- Level 1: This level corresponds to a competent operative or service sector worker.
- Level 2: This level corresponds to an advanced operative or service sector worker.
- Level 3: This level corresponds to a competent skilled autonomous worker.
- Level 4: This level corresponds to an advanced skilled autonomous worker.
- Level 5: This level corresponds to a competent administrator, specialist, technician or paraprofessional.
- Level 6: This level corresponds to a competent senior administrator, specialist, technologist or paraprofessional.
- Level 7: This level corresponds to a competent professional or manager.
- Level 8: This level corresponds to a competent senior professional or manager.

Therefore, the ASF levels we were concerned with in this research would certainly be that of at least levels 1-3 or, in other words, that of an apprentice training to the

standards of a skilled autonomous worker who would also obtain a trade certificate on completion of training. The national characteristics of this framework allow for worker mobility around Australia and provide a pathway for the self-development of the tradesperson in a changing industrial environment. This partnership between the education and work sectors also provides for greater flexibility for the workforce to adapt to technological changes within industry.

Figure 1.

Level 1.	Certificate.	This level corresponds to a competent operative or service sector worker
Level 2.	Certificate.	This level corresponds to an advanced operative or service sector worker
Level 3.	Trade Certificate	This level corresponds to a competent skilled autonomous worker
Level 4.	Post Trade Certificate; Advanced Certificate	This level corresponds to an advanced skilled autonomous worker
Level 5.	Post Trade Certificate; Advanced Certificate; Associate Diploma	This level corresponds to a competent administrator specialist, technician or paraprofessional
Level 6.	Advanced Certificate; Associate Diploma; Diploma.	This level corresponds to a competent senior administrator specialist, technologist or paraprofessional
Level 7..	Associate Diploma; Diploma; Degree.	This level corresponds to a competent professional or manager
Level 8.	Associate Diploma; Diploma; Degree; Higher Degree.	This level corresponds to a competent senior professional or manager

(List of Qualifications obtained from *National Competency Standards Policy and Guidelines*, 2nd edn, 1992, p.27)

The Vocational Education, Employment and Training Advisory Committee (VEETAC) (*Framework for the Implementation of a Competency-Based Vocational Education and Training System* 1993, p.13) defined assessment as follows,

Assessment is the process of collecting evidence and making judgements on the nature and extent of progress towards the performance requirements set out in a standard, or a learning outcome, and, at the appropriate point, making the judgement as to whether competency has been achieved.

Purposes of Assessment (VEETAC) (*Framework for the Implementation of a Competency-Based Vocational Education and Training System* 1993, p.13).

Assessments can be taken to:

- assist and support learning by advising the learner about the quality of performance and the learner's rate of progress towards the achievement of the competency standard. This is known as formative assessment.
- help learners and their supervisors determine their education and training needs; assessment for this purpose is called diagnostic assessment.
- determine whether a unit of competency or a learning outcome has been achieved for the purpose of formal recognition of training; this kind of assessment is called summative assessment.
- determine whether a person has achieved standards of competency which have not yet been formally assessed or recognised so that they gain entry to a credit in recognised courses. This is assessment for the recognition of prior learning and refers to endorsed industry standards.

It would seem that within an Australian competency-based training system there were a number of approaches to the question of assessment that made it quite controversial. Therefore, it was reasonable to assume that this resulted in different levels of assessment of standards that varied along a spectrum from superficial to more in-depth. It should be noted that Australia was in the process of defining national standards for all trades, with the aim of providing a uniform standard to facilitate the ability to provide portable qualifications around the nation. However, if the methods of assessment and the defined standards varied within industry the conclusion drawn was that many forms of competency-based training systems were in operation in Australia. The outcomes of these schemes differed, which made comparisons of reliability, validity and fairness of assessment difficult to be achieved.

Cooper (1993, p.9) believed, that

Competency can only be assured by assessment in the workplace (or simulated workplace). One may absorb learning and practice or rehearse the skills required in a competency but, the real test is the application and satisfaction of the competency in a realistic work role.

The Department of Employment, Education and Training (DEET), (now (DETYA) Department of Education, Training and Youth Affairs), in its 'Assessment Practical Guide' (Rumsey 1994, p.4), defined assessment as follows:

Assessment in a competency-based system is the process of collecting evidence and making judgements on the nature and extent of progress towards the performance requirements set out in a standard, or a learning outcome,

and, at an appropriate point, making the judgement as to whether competency has been achieved.

DEET had produced three publications for industry, 'The Assessment-Practical Guide' (Rumsey 1994), 'The Assessment-Technical Manual' (Hager, Athanasou & Gonzi 1994) and 'The Assessment-System Design' (Toop, Gibb & Worsnop 1994). These publications were provided free for industry. Therefore, they had been included in the study as they would increasingly be a benchmark for industrial assessment within Australia.

'The Assessment-Practical Guide (Rumsey 1994, p.30)' included some critical questions in the review of assessment processes.

A very important first step in a review is to establish why the assessment is being conducted. The answer to this question establishes the benchmark for many of the other checks that will be carried out in the review.

The second step is to establish what criteria are being used in the assessment. In most cases the ultimate criteria will be endorsed competency standards. However, these will have been interpreted to the specific context within which the assessment is being conducted. Hence, it will be necessary to:

- * establish the relevant competency standards or equivalent.
- * establish the actual assessment criteria that have derived from the standards.
- * consider the process used to develop the assessment criteria.

The competency standards had been established for apprentices in the form of trade training schedules (TTS) in the NATAS scheme. Committees established by relevant industries had produced these. Some standards were incorporated within these schedules and they were used in the main to establish competency.

The third step is to examine how the evidence for the assessment is being gathered. This will include the procedures being used, the assessment tools being used and the way the evidence is documented. (Rumsey 1994, p.30)

External monitors (NATAS) collected evidence of assessment twice during a four-year apprenticeship. The procedure used was by observation, apprentice demonstrations of tasks, and questions based on the trade training schedules. TAFE

colleges tended to devise their own assessment systems based on the theoretical aspects of their syllabuses.

The final step in the review process is to ask the question 'are the assessment processes good enough?'. This requires a critical evaluation of the assessment processes against the required quality criteria. The main checks will be for:

- * validity
- * reliability
- * flexibility, and
- * fairness.

(Rumsey 1994, p.30)

Validity principles

1 Assessments will cover the range of skills and knowledge needed to demonstrate competency.

2 Assessment of competency should be a process that integrates knowledge and skills with their practical application.

3 During assessment, judgements to determine a learner's competency should, whenever practicable, be made on evidence gathered on a number of occasions and in a variety of contexts or situation. (*Framework for the Implementation of a Competency-Based Vocational Education and Training System* 1993, p.16)

Reliability principles

4 Assessment practices should be monitored and reviewed to ensure that there is consistency in the interpretation of evidence.

5 Assessors must be competent in terms of the national competency standards for assessors. (*Framework for the Implementation of a Competency-Based Vocational Education and Training System* 1993, p.16)

Flexibility principles

6 Assessment should cover both the on and off-the-job components of training.

7 Assessment procedures should provide for the recognition of competencies no matter how, where or when they have been acquired.

8 Assessment procedures should be made accessible to learners so that they can proceed readily from one competency standard to another. (*Framework for the Implementation of a Competency-Based Vocational Education and Training System* 1993, p.17)

Fairness principles

9 Assessment practices and methods must be equitable to all groups of learners.

10 Assessment procedures and the criteria for judging performance must be made clear to all learners seeking assessment.

11 There should be a participatory approach to assessment. The process of assessment should be jointly developed/agreed between the assessor and the assessee.

12 Opportunities must be provided to allow learners to challenge assessments and provision must be made for reassessment. (*Framework for the Implementation of a Competency-Based Vocational Education and Training System 1993, p.18*)

This was a question of interest to the study and one that was pursued in the semi-structured research interviews with monitors, lecturers, employers and the apprentices. The assessment processes were perceived as good enough to ensure skilled craftpersons were provided for industry to a recognised national standard.

Competency-based training (CBT) was the general approach in operation regarding apprentice training during the period of the research. It was, therefore, important to define what was meant by this concept because views were inclined to differ within industry.

Competency comprises the specification of the knowledge and skill and the application of that knowledge and skill to the standard of performance required in employment. The concept of competency includes all aspects of work performance. It includes:

- * performance at an acceptable level of skill;
- * organising one's tasks;
- * responding and reacting appropriately when things go wrong;
- * fulfilling a role in the scheme of things at work, and
- * transfer of skills and knowledge to new situations.

Commonwealth of Australia (*Competency Standards for Assessors 1993, p.iii*)

This definition allowed the knowledge and skill to be defined and linked to a performance standard which was capable of being assessed within the employment situation. It was seen that there had to be these essential components within a competency-based training system. Therefore, if it were found that any competency-based training system lacked these basic requirements some serious questions as to

the validity or reliability of such a system were in question. If there was little or no assessment it was difficult to see how the system could guarantee competency. The same discussion could also take place if standards were limited or vague because assessment would not be reliable under the circumstances.

Each industry had developed and defined its own knowledge and skill requirements, some in the form of trade training schedules. However, it should be noted that some were more detailed and comprehensive than others, especially in the area of performance standards. So the assessment process in some industries were inclined to be more a subjective exercise than in others.

Docking (1995, p.18), in his article 'Competency: what it means and when you know it has been achieved,' made the following point.

One of the most serious problems in implementing competency-based approaches arises from the confusion about the fundamental idea of 'competency'. A brief conversation with practitioners in education, training and industry will reveal almost as many different definitions of competency as discussants. The words 'competence' and competency convey to many the meaning 'adequacy' and 'mediocrity'.

This was a very important area because of its implications for the assessment process. Industry had been establishing only adequate standards of performance for what had been defined in the past as a skilled occupation. This was discussed further in the article '*Who's doing what? Assessment in Australia Today.*' (NTB Network, Special Conference No 16 January 1995, p.19). This indicated that there was a number of approaches to competency-based assessment. In essence, the major differences between assessment processes currently being used were as follows:

- * the number of assessors involved in the assessment;
- * the outcomes of a successful assessment;
- * the standards against which assessor training is carried out;
- * the quality assurance measures in place to ensure validity, reliability and fairness of assessment; and

* the recording processes.

(NTB Network - Special Conference No.16 January 1995, p.19).

Competency-based training, in explanation, appeared to be a sound idea, the fact that a person was either competent or not competent at every unit, stage or level of training had its merits. However, when this system was imposed on an industry without adequate funding it results in a voluntary approach by organisations which often had their own agenda for adequate training. These firms varied in size and ability to conduct training and would often adopt a pragmatic approach to train only to their specific needs. This was inclined to work against the idea of a uniform national standard or would result in the defined standard being of a minimal nature to provide consensus within often diverse industry.

The problem of minimal standards was often compounded by the previously mentioned differences in approaches to assessment. As reported later, respondents commented on additional constraints such as lack of funding, resistance to change from industry, and lack of training of the participants within the industry. It could be argued that even a system accepted as effective could be affected by contributing factors outside of the technical training arrangements.

To find such problems of funding and other resource elements might not be uncommon given the resource challenges facing the small to medium-sized organisations which make up the backbone of Australian industry. The focus of industry for such companies was on survival and the aim was to make a profit. As yet it had not been reported in the literature that such organisations saw industrial training and assessment as other than a cost.

Assessor Competency

Competency

The concept of competency focuses on what is expected of an employee in the workplace rather than on the learning process; and embodies the ability to transfer and apply skills and knowledge to new situations and environments.

This is a broad concept of competency in that all aspects of work performance and not only narrow task skills, are included. It encompasses:

- the requirement to perform individual tasks (task skills);

- the requirement to manage a number of different tasks within the job (task management skills);
- the requirement to respond to irregularities and breakdowns in routine (contingency management skills);
- the requirement to deal with the responsibilities and expectations of work environment (job/role environment skills), including working with others.

(National Competency Standards, Policy and Guidelines, 2nd edn, October 1992, p.29).

Worsnop (1993, p.3) provided a further similar definition which 'focuses on what is expected of the employee in the workplace.' This established the competency requirement of the apprentice and the next stage was to ensure that this position was achieved by means of a monitoring process.

The main aim of monitoring or workplace assessment was to achieve competency that was based on work standards provided and approved by the relevant trade or industry.

The question of assessor training in Australia was another critical factor in monitoring and workplace assessment. The Commonwealth/State Training Advisory Committee Report (COSTAC 1990, p.38) found that,

This is due in part to a lack of emphasis in the Australian system on ensuring that the people who are expected to impart knowledge and skills to others in the enterprise are appropriately trained to do so.

The National Training Board had in place competency standards for assessors that cross industry. Australia had a Competency Standards Body (CSB) which had produced 'Workplace Trainer Competency Standards' which was endorsed by the National Training Board (NTB) in 1992. The Competency Standards Body (CSB) carried out a review of these 'Assessor Standards' in 1994. 'These revised Standards were endorsed by the Standards and Curriculum Council in September 1995.' (*Competency Standards for Assessment 1995, p.v*) However, as these had been under review some trades had only used these standards as a guide to assessor training. They had also looked at other countries, such as the UK, to provide examples of suitable assessor competency standards. (e.g. TDLB Competency Standards.)

The NTB Network No.16 in *'Who's Doing What? Assessment in Australia Today'* (1995, p.19) stated,

there are industries and enterprises who have put these standards aside and are using the UK TDLB (Training Development Lead Body) competency standards as the basis for their assessor training. Others still are basing their assessor training on models such as those developed primarily for formal training and education processes.

The UK Training Development Lead Body (TDLB), as mentioned above, had obviously, according to suggestions from the findings, had an impact on Australian assessment and it would be useful at this stage to briefly describe the system. The intention behind the above body was to raise standards in the workplace and generally make industry more competitive. New (UK) qualifications had been introduced and these were called National, and Scottish, Vocational Qualifications (NVQs and SVQs).

Even the assessor training was open to a certain amount of variation in its training standards. This had some impact on the various industries and trades. Training reforms in Australia suggested that individuals performing workplace assessment should:

- * be competent against the assessor competency standards; and
 - * have demonstrated competence at least to the level being assessed.
- (NTB Network-*Implementation of Training Reforms* No.15 November 1994, p.3).

The assessor was the last person in the training chain that defined the competency, or not, of the training under review. Therefore, different models of assessor training tended to produce different outcomes in the assessment process. These issues were inter-related and must not be considered in isolation because each would have a knock-on effect on other factors.

It must be borne in mind that the background experience of the assessors ranged from the skilled craftsman to that of managerial ability, so may not have had the necessary expertise in all cases to benefit from the relevant assessor training.

The Australian National Training Authority's report to the Ministerial Council (MINCO), *Proposals for More Effective Implementation of Training Reforms* (NTB *Network-Implementation of Training Reforms* No 15.November 1994, p.3), also proposed,

A network of bodies with staff who meet assessor competency standards should be developed to undertake assessment directly or to assist enterprises with workplace assessment.

Therefore, to maintain a balance it was important to have some form of monitoring by an outside impartial organisation with a network of trained and approved assessors to standardise the industrial training. Monitoring of training could provide a partial solution but it obviously depended on the extent and duration of such activities, and the establishment of relevant standards to be assessed.

Lead Bodies (UK)

A competency-based training system was in place in the UK with the 'Lead Bodies' responsible for setting the standards of competence in the workplace. A (UK) National Vocational Qualification (NVQ) framework of standards was established to cover five levels of competence, from basic to professional levels, and spread across all occupations and industries.

The Commonwealth/State Training Advisory Committee report (COSTAC 1990, p.43) mentioned,

To support this system, the United Kingdom Training Agency has established a network of more than 150 'Lead Bodies' to develop standards, with assistance from the Agency, and on a 50/50 shared cost basis, for endorsement by the NCVQ. A lead body is expected to represent the interests of the major users, particularly employers, of the standards they define and involve appropriate employer, employee and educational interests.

These formed the basis for national qualifications which had credibility because of the emphasis on 'best practice' and the 'needs of employment' obtained from Lead Bodies composed of relevant interest groups such as employers, unions, education, trainers and other associated organisations.

The National Standards for Training and Development cover all work roles with a training and development content, full-time and part-time, from the design and delivery of training programmes, through part-time coaching of staff by managers, to the development of strategic human resource plans and their evaluation. The whole shift towards competence based qualifications means there is also a need for standards to which the assessor must work and these are included. (*National Standards for Training & Development, An Executive Summary* 1992, p.1)

The above was a comprehensive package and had provided useful guidelines for an assessment system with defined standards for the assessor. This form of competency-based approach with defined national standards allowed for the transportability of qualifications around the United Kingdom.

The benefits of the above system, as mentioned in the Lead Body publication 'National Standards for Training and Development, An Executive Summary', such as the setting of objective performance benchmarks was a tremendous advantage to the assessor.

The standards are very specific about the types and breath of competence that are expected, the criteria against which performance should be judged and the kind of evidence that assessors will need to consider when reaching a judgement. This information is clear to assessment candidates as well as their assessors, so there can be no question about what performance is expected, how that will be judged or what evidence will be looked for. (*National Standards for Training & Development, An Executive Summary* 1992, p.2)

The comprehensive nature of the above system lends itself to be favourably analysed against most forms of quality criteria such as validity, reliability, flexibility and fairness. Also, the subjective element in assessment was reduced to a minimum which had important implications for variations of perceived standards in the workplace.

Competence is best assessed in the workplace. This actively involves line managers in the development of their people, whose needs are charted against clearly specified standards. (*National Standards for Training & Development, An Executive Summary* 1992, p.2)

This statement had merit but it should be noted that line managers needed to be trained to develop people in assessment. However, external assessment also had a role

in the scheme of things and although the above could be agreed in principle, there would be concerns if the process was not monitored in some form. Monitoring was important for ensuring that standards were uniform over a trade or industry.

National Standards provide employers and employees with a means of identifying career progression targets and paths to them. They encourage a culture of self-development and open up opportunities to build flexible, transferable skills in the work force. (*National Standards for Training & Development, An Executive Summary 1992, p.2*)

The benefits obtained from clear progression paths provided by national standards were real because they could be driven both by employees as well as employers. This was clearly an advantage in modern business that needs to be flexible in the face of modern technological developments.

Clearly specified standards backed by competence based assessment systems enable employers to extend their quality initiatives to the development and performance of the work force. (*National Standards for Training & Development, An Executive Summary 1992, p.3*)

A further benefit was quality assurance because standards that were clearly specified lent themselves to a competency-based assessment system that resulted in an improved and efficient work force. The other advantage was that employers would be provided with employees whose competence levels were of a similar standard, which had implications for quality control especially in production departments.

Both employers and employees gain from the recognition that NVQs and SVQs give to competence based standards for different occupations. Improved performance and higher levels of professionalism bring better business results and increased motivation. (*National Standards for Training & Development, An Executive Summary 1992, p.3*)

There was, therefore, a need to get these national standards right in every trade and industry. The fact that these national standards were defined and readily available ensured that they met the requirements of the relevant industry because they could be modified and improved if they were found inadequate in some measure. They would then form the basis of any debate or regular review of skills required in any work force.

The National Vocational Qualifications (NVQs) developed by National Council for Vocational Qualifications (NCVQ) and the Scottish Vocational Qualifications (SVQs) produced by the Scottish Vocational Education Council (SCOTVEC) mentioned earlier were an integral part of the modern apprenticeship system in the United Kingdom. Apprentice training was structured into foundation, intermediate and final levels of training. These were described within the system as level 1 NVQ units, Level 2 NVQ units and level 3 NVQ units. Core skills and other relevant certificates were incorporated at the appropriate levels. So the modern apprenticeship system (United Kingdom) included NVQs or SVQs, key skills and trade certificates and provided a relevant framework for structured training of young people. These qualifications were designed to increase the competitiveness and flexibility of the UK workforce to compete with other nations. The above system was designed to provide a modern relevant structure in an often confused qualification situation and to meet the demands of the next century.

NVQs and SVQs. These are a coherent and comprehensive system of awards which are qualifications for work. At the heart of NVQs is the idea of 'occupational competence'. This is defined as: the ability to perform to the standards required in employment across a range of circumstances and to meet changing demands. (Department for Education and Employment (UK) *Supporting Modern Apprentices* 1996, p.10).

The Department for Education and Employment (UK) had produced a booklet called 'Supporting Modern Apprentices' which mentioned a reorganisation of vocational education and training. This new system of training and assessment was designed to include 'competence on-the-job', industry driven 'national standards for occupations' and a 'fair and equal access to all' (1996, p.10). This indicated the importance of the link between industrial competency and national standards for modern apprenticeship training.

Fennell (1991, p.6) stated,

An NVQ/SVQ requires, in addition to the standards on which it is based, a system for assessment and certification for accrediting individuals as competent.

It would, at this point, have been useful to investigate the principles of assessment and methods of certification in use in the competency-based system. Assessment in the past, which was mainly time served, although with implied less formal standards, was more concerned with knowledge gained and ability in the job rather than in the achievement of specified documented standards. Therefore, assessment that was based on documented standards was a major step forward in the assessment process. So the competency-based system was based on assessing outcomes rather than specific programmes.

The starting point for assessment in NVQs/SVQs is the set of standards. Assessment is a subordinate process. It does not provide a standard, but constitutes a judgement that the individual meets the standard specifying what is expected of him or her in a job or work role. This is different from much of traditional assessment in which the individual is required to pass a test. (Fennell 1991, p.6)

Although Fennell (1991, p.6) stated that assessment was a subordinate process, it was still extremely important because the individual was assessed on achievement of the required standard. Any competency-based system had to be well balanced between relevant standards and a valid and reliable assessment process. The system would not work correctly if these components were not in place or not correctly implemented. Fennell (1991, p.6) stated,

In the assessment system, there was considerable emphasis on workplace performance. At any one time, this provided evidence for one or more elements of competence. What a manager or receptionist or technician did at work was likely to convey more about his/her achievement against standards than any test of theory or knowledge. This did not mean that assessment was simply a matter of knowing that someone had performed once or twice satisfactorily. Assessment in the workplace could have been just as rigorous as a conventional examination, and was often a good deal more relevant to the needs of organisations and individuals.

This was one of the great advantages of assessment linked to competency-based training with its emphasis on workplace performance. This brought assessment to the coalface, so to speak, and if done properly would have a beneficial impact on the

worker and the relevant industry. However, it should be noted that assessment was a continuous process under these conditions and the fact that a worker had achieved competence on a couple of occasions must not obscure the fact that real competence may not have been achieved. In other words, there were dangers of just going through an assessment process without considering other factors such as properly trained assessors, the number of times assessment took place, and relevant assessment standards. Any one of these extra factors could, in itself, invalidate an otherwise comprehensive assessment system.

Australian National Training Authority.

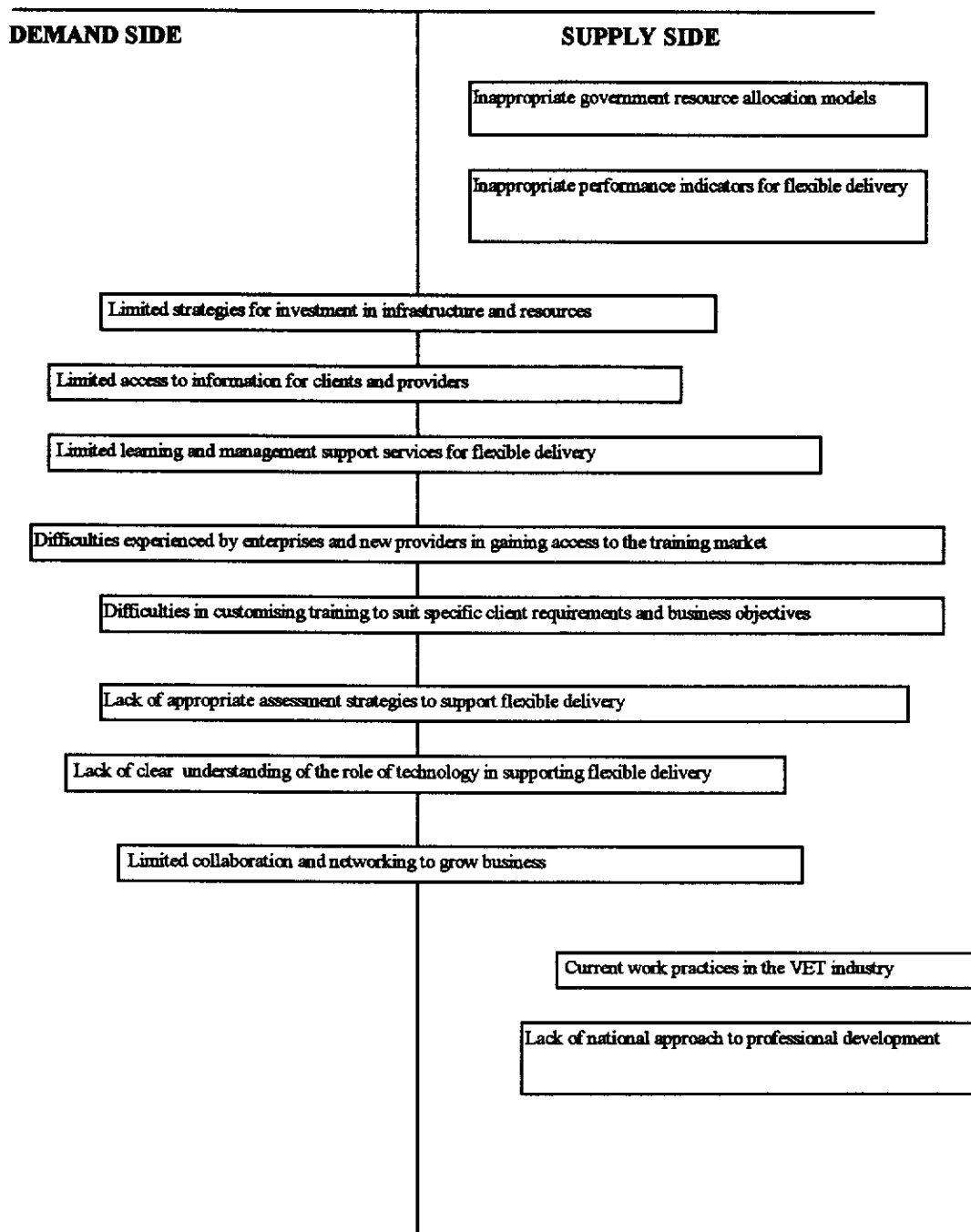
The Australian National Training Authority (ANTA) established a National Flexible Delivery Task Force which completed a final report in 1996. The taskforce defined flexible delivery as follows ‘ flexible delivery is a way of providing what the learner wants, making sure that what they want is clearly specified in terms of what (context), how (mode), when (timing and sequencing) and where (location)’(1996, p.1). This showed the importance given to this area of research by the government. Although this is not the research area there was an overlap of issues especially in the area of barriers to clients which prevented them from fully benefiting from the vocational education and training (VET). The relevant ‘key elements’ identified by the report in relation to this research were ‘Inappropriate government allocation models; Inappropriate performance indicators for flexible delivery; Difficulties in customising training to suit specific client requirements and business objectives; Lack of appropriate assessment strategies to support flexible delivery; Current work practices in the VET industry and Lack of a national approach to professional development’ (1996, p.17). These barriers have increased the complexity of the various training systems for all parties concerned and contributed to some issues identified in the research.

This had been a period of change for TAFE (it became autonomous) and other training providers (responsible for assessment) which had increased the difficulties of uniformity within the assessment process. Whitley (1999, p.35) states, ‘The complexity of steering in the “right” direction is challenging because of the crucial dimension: people. To become part of the organisational transformation process, people need to

value the change process.' Therefore it could be seen that change in the VET industry had to be accomplished with the cooperation of all parties concerned.

Figure 2

Barriers to effectively meeting the needs of clients through flexible delivery
Lack of a clear national focus for flexible delivery



(Australian National Training Authority (ANTA) National Flexible Delivery Task Force Final Report Executive Summary 1996, p.17).

Chapter 3

Research Methodology

Introduction

The choice of paradigm, constructivist (Schwandt,1994) or positivist (Smith,1993), really depended on the phenomena that the researcher was investigating (Table 6.1 Figure 2). How a researcher went about exploring this item of interest should be the yardstick in making the decision as to whether the resulting method would be qualitative or quantitative. The researcher, in making this decision, had to know, in operational terms, what questions were to be asked or what agenda needed investigating. When this had been established there was a need to establish a valid or trustworthy way of proving the hypothesis or a research question. What these ways were can be radically different depending on the perceptions about the nature of reality,(ontology), nature of knowledge, (epistemology).

A fundamental purpose of this research was to gather perceptions of competency-based assessment within the NATAS and Modular system from the perspectives' of key stakeholding groups. This required a constructivist rather than a positivist ontology. Guba and Lincoln (1994) who have been responsible for many theoretical arguments in this area saw the aim of constructivist enquiry as a quest for understanding the constructions and reconstructions that people (including the enquirer) hold, before and during a research activity. One important facet of this approach was that the ontology allowed reinterpretation's and recategorisation of data in a contextual setting. Central to the constructivist ontology was the notion that various writers had commented on, which could be expressed as 'verstehen' or understanding (Burrell & Morgan 1979; Schwandt 1994). Whiteley (2000, p.11) criticises the scientific claims to interpretive studies, quoting the example from classical sociology, 'Weber recognised that there were two realms of meaning, natural and human/social, but both should come under the laws of science. The unique and individual could still be reduced to a basic (atomistic) behaviour to be studied within sociological institutional categories.'

The theoretical assumptions underlying the ontological, epistemological and methodological choices made in addressing a research undertaking affect each of the subsequent research activities. The deepest theoretical assumptions underpinning this study were ontological, that was beliefs about whether or not there was a 'real' factual and apprehendable world or whether there was no one reality but one that was constructed by individuals through their social interactions.

Ontology

Guba and Lincoln (1994, p.108) asked,

The ontological question. What is the form and nature of reality and, therefore, what is there that can be known about it?

The Positivist Ontology

These authors went on to say that in a 'real' world, concrete knowledge could be exposed about what they called 'how things really are' and 'how things really work'. An important aspect of the 'real world' assumption was that 'things' were seen as objects. They must have had the quality of objects irrespective of who studied them.

Such a view, that there was or could be a 'real' world provided what many researchers, not uncritically, would call the respectable research approach Silverman. (1993) and Levin (1988). The 'real world' where research objects were positive and concrete was associated with the positivist ontology.

Positivism, a form of realism, was defined as:

An apprehendable reality is assumed to exist, driven by immutable natural laws and mechanisms. (Guba & Lincoln 1994, p.109)

Positivism was often described as the process of science and verification.

The first step in this process is objective observation. Objectivity requires that we focus on only those characteristics in the world that can be sensed, rather than on our beliefs or feelings about them. (Levin 1988, p.34)

Erickson (1986) recounted how the positivist research ontology was itself a reflection of deeply held beliefs that society should be conceived of as a science. Linked to philosophical schools of reason and existing in the era of Newtonian physics, often referred to by writers as the machine metaphor for society, the sociologist Comte 'proposed a positivist science of society modelled after the physical sciences in which causal relations were assumed to be analogous to those of mechanics in Newtonian physics' (Erickson 1986, p.124). The argument was that society must be treated as an entity in itself and that it was the 'social facts' of actors' behaviours and not the meaning perspective's of them that were important.

It was clear, following this theorising about the nature of being of social actions that objects of study, (including the 'social facts' of actors' behaviours) were to be tested by scientific investigative methods. Key concerns were uncontaminated observation and verification and key purposes were construction of time reversible and generalisable laws (Prigogine 1996). Tuchman (1994, p306) said 'I thus assume that a methodology assumes a way of looking at phenomena that specifies how a method "captures" the "object" of study.' In the quest to retain the objective qualities of phenomena, central activities of scientific method were precise definitions, classifications and calculations so that some verifiable result could be produced.

Scientific method then supposed that if the result could be produced, the procedures could be verified, and others could replicate the method to reach the same results, ensuring reliability then transportation to other contexts should be possible. The implication was that the process had objectivity and therefore little or no researcher bias. This was a view increasingly challenged in the writing of complexity theorists in organisations, who said that this may not always be the case as data generated from quantitative analysis, sometimes was part of a complex feedback system of interrelationships. (Brown & Eisenhardt 1998). One would be seeking at the very minimum, when matching research conditions to the positivist ontology, to have a question that lent itself well to measurement (such as the test items on a training schedule as long as the behaviours were argued to be 'social facts').

Constructivist Ontology

However, on the other hand, when dealing with a research question that was predicated on the belief that reality, especially social reality, was personally constructed and the research objective was to interpret the meaning behind some phenomenon then this would necessitate a constructivist ontology.

In contrast with the positivist ontology and at the other end of the 'real' versus 'relative' continuum presented by Guba and Lincoln (1994, p.109) was that of constructivism. This ontological approach, said Guba and Lincoln was relativist.

Realities are apprehendable in the form of multiple, intangible mental constructions, socially and experientially based, local and specific in nature (although elements are often shared among many individuals and even across cultures), and dependent for their form and content on the individual persons or groups holding the constructions. (Guba & Lincoln 1994, p.111)

A useful device for comparing ontological, epistemological and methodological approaches, first presented by Burrell and Morgan in 1979 is shown as table 6.1.

Figure 3.

TABLE 6.1 Basic Beliefs (Metaphysics) of Alternative Inquiry Paradigms

Item	Positivism	Postpositivism	Critical Theory	Constructivism
Ontology	naive realism- "real" reality but apprehendable	critical realism- "real" realism but only imperfectly and probabilistic- ally apprehendable	historical realism- virtual reality shaped by social, political, cultural, economic, ethnic, and gender values; crystallized over time	relativism-local and specific constructed realities
Epistemology	dualist/ objectivist; findings true	modified dualist/ objectivist;critical tradition/ community; findings probably true	transactional/ subjectivist; value- mediated findings	transactional/ subjectivist; created findings
Methodology	experimental/ manipulative; verification of hypotheses; chiefly quantitative methods	modified experimental/ manipulative; critical multiplism; falsification of hypotheses; may include qualitative methods	dialogic/ dialectical	hermeneutical/ dialectical

(Guba & Lincoln 1994, p.109).

A key element in the constructivist ontology was that of the interpretation of meaning. Asking the sort of questions suggested by Erickson (1986, p.124) such as 'what is happening here and what do these happenings mean to the people engaged in them,' was an example of interpretivist data collection.

As Schwandt (1994, p.120) explained, interpretivism was;

The means or process by which the inquirer arrives at this kind of interpretation of human action (as well as the ends or aim of the process) is called Verstehen (understanding).

The researcher needed to be convinced that the world of the research question was contextual in nature and that interpretations of meaning rather than facts were needed.

This research aimed to investigate the perceptions (that was personal constructions) of four groups of people, apprentices, monitors, lecturers and employers as they interpreted the apprentice assessment experience within the NATAS and Modular environment. The research setting was highly contextual, and an authenticity element of the research was seen as crucial by the researcher. The researcher decided to adopt the constructivist approach to the research question.

Epistemology

Epistemology could be defined as the nature of knowledge and the relationship of the knower to that which could be known. Knowledge could be factual (empiricist) or could be socially constructed (interpretivist). The empiricist epistemological perspective entailed viewing phenomena in a detached manner and, dealing with data objectively and factually. The interpretivist perspective, on the other hand, assumed that the interactive process of social reality construction yielded findings made possible because the researcher and respondent as social actors were closely linked.

Guba and Lincoln (1994) posed the epistemological question: 'what is the nature of the relationship between the knower or would-be knower and what can be known?'

The question needed to be asked was, what was the nature of knowledge in a world that was either real or relative and how objective or subjective would the researcher's approach be in any given circumstance? Was it possible to completely isolate a phenomenon so that it could be observed without the item being influenced or the researcher's interpretations being affected by the research process. Alternatively, was it possible to conduct meaningful research when the researcher was close to or part of the data collection process?

The empirical perspective explained the nature of knowledge and relationship of the researcher as,

Dualist and objectivist. The investigator and the investigated 'object' are assumed to be independent entities, and the investigator to be capable of studying the object without influencing it or being influenced by it. (Guba & Lincoln 1994, p.110)

In contrast, they saw the interpretive perspective as,

Transactional and subjective, where the researcher and the 'object' of study are interactively linked 'so that the findings are literally created as the investigation proceeds'. (Guba & Lincoln 1994, p.111).

Smith (1983, p.6) explored the development of both quantitative and qualitative ways of knowing about human phenomena. Smith's rejected polemics where 'one side refer to the other as *bankrupt*, *number-crunchers* or *story-tellers*'. He also rejects interchangeability where 'researchers may variously mix the two approaches for any particular reason or use one at one time and the other at another time'.

What he suggested, a view supported here, was the need for epistemological considerations. Supporting this argument by relating to the historical origins of the empirical and interpretive epistemological perspective's, Smith (1983, p.6) identified Comte, Mill and Durkheim, sociologists allied to the realist philosophical traditions of Newton and Locke. These, he said, were positivist theorists who embraced empirical epistemology. 'On the other side', Dilthey, Rickert and Weber, allied to the idealist philosophical tradition.(in Erickson 1986, p.126).

The important assumptions in these two theoretical schools related to the nature of knowledge about phenomena involving social actors. The status of social facts was the fulcrum of this apprentice training assessment study. If, as empiricists would suggest, they were things, then the chosen methodology, in order to be accurate and parsimonious, would be quantitative. If social facts were construed as being connected to the human mind as subjective, and dependent on the interpretation of the thinker for social meaning, then the knowledge could not be factual in nature. Once the epistemological judgement was made, in this case in favour of the interpretive perspective, then the resulting method had to reflect this in the assumptions that could be made about methods and techniques of data collection, analysis and interpretation.

Methodology

Guba and Lincoln (1994, p.108) asked,

The methodological question. How can the inquirer (would-be-knower) go about finding out whatever he or she believes can be known?

The answer to this question and the higher level questions about epistemology and ontology best related to the research question would influence the choice of methods.

This choice would range from quantitative on the one hand or qualitative on the other.

The quantitative methodology required choices of method that were:

Experimental and manipulative. Questions and/or hypotheses are stated in propositional form and subjected to empirical test to verify them: possible confounding conditions must be carefully controlled (manipulated) to prevent outcomes from being improperly influenced. (Guba & Lincoln 1994, p.110)

This methodology was usually more suited to factual information, which could be scientifically tested or verified.

Qualitative methodology entails:

Hermeneutical and dialectical methods of collecting data. The variable and personal (instrumental) nature of social constructions suggests that individual constructions can be elicited and refined only through interaction between and among investigator and respondents. (Guba & Lincoln 1994, p.111)

Qualitative methodology involved discovery, exploration and individual interpretations of reality and was better adapted to subjective data.

Smith stated that before making a choice of methodology the following questions needed to be asked: '(1) What is the relationship of the investigator to what is investigated? (2) What is the relationship between facts and values in the process of investigation? and, (3) What is the goal of investigation?' (Smith 1983, p.6). These questions should enable the researcher to clear his/her mind and enable the correct choice to be made regarding the best type of method for the nature of the research.

Bullock, Little and Millham (1992, p.85) stated:

Quantitative work, by definition, implies the application of a measurement or numerical approach to the nature of the issue under scrutiny as well as to the gathering and analysis of data.

This approach emphasises hypothesis testing (true/false) of facts within a theoretical framework but had its limitations. There was a possibility that relevant variables may be excluded that may effect findings and objectivity. Facts are not independent and as such are inventions of the human mind, which made them subject to errors.

The essential differences in approaches will depend on whether the phenomena was best measured by using numbers, recognising the endemic inability of numerical data to provide interpretations and clarifications of meaning.

Qualitative versus Quantitative Research

The word *qualitative* implies an emphasis on processes and meanings that are not rigorously examined, or measured (if measured at all), in terms of quantity, amount, intensity or frequency. Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasise the value-laden nature of inquiry. They seek answers to questions that stress how social experience is created and given meaning.

In contrast, quantitative studies emphasise the measurement and analysis of causal relationships between variables, not processes. Inquiry is purported to be within a value-free framework. (Denzin & Lincoln 1994, p.4)

Bullock, Little and Millham (1992, p.85) also mentioned:

Qualitative investigation in contrast, is often viewed as an intensive or micro-perspective which relies upon case studies or evidence gleaned from individuals or particular situations but it can ... be large scale. Like Finch (1986), we view qualitative research as an approach which explores the processes behind observed associations between factors, charts individual outcomes and explores the meanings and contexts of individual behaviour.

This subjective approach or interpretive understanding of data could be seen as a qualitative activity. Qualitative data obtained from the behaviour of humans was better designed to give an interpretation of the meaning or purpose of any actions of actors. As Bliss (1983) puts it:

we are often at the stage where the problem is to know what the problem is, not what the answer is. The qualitative analyst is cast in the role of a discoverer who unearths problems, identifies indicators and formulates hypotheses rather than investigating problems within an established theoretical framework. (Dey 1993, p.52).

Dey (1993, p.27) suggested that qualitative data analysis place 'more emphasis on the meaning and interpretation of data through the process of description and classification'. However, as the emphasis of the research would be conducted using qualitative research it would be useful to define what was meant by this process. Denzin and Lincoln (1994, p.2) provided a generic definition,

Qualitative research is multi-method in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them. Qualitative research involves the studied use and collection of a variety of empirical materials – case study, personal experience, introspective life story, interview, observational, historical, interactional, and visual texts – that describe routine and problematic moments and meanings in individuals' lives. Accordingly, qualitative researchers deploy a wide range of interconnected methods, hoping always to get a better fix on the subject matter in hand.

The research in question needed this type of approach to fully interpret the process under study, which could be effected by the actions or interpretive meanings of the social actors under observation. These actors had brought their own agendas and experience to the judgements that they made in the assessment process. Therefore the involvement of interpretive and naturalistic approaches had been chosen to allow accounts of the meaning placed upon the assessment dimensions both selected for study and emerging from the findings.

In conclusion, after considering questions of ontology, epistemology and methodology, the decision was made to adopt constructivist interpretivist and qualitative research design.

Research Procedure

This study sought to capture assessment procedure in the New Apprenticeship Training and Assessment System (NATAS), and the Modular system in Western Australia. As discussed in Chapter two, the latter system was now a competency-based system with its emphasis on outcomes rather than process of training. This, it was explained earlier, was further supported by the National Training Board definition, which stated that competencies were about outcomes not learning processes. This research focused on the monitors' perceptions on the effectiveness of NATAS in producing and assessing skilled persons using a competency-based system of training. Also studied were the perceptions of other groups such as lecturers and administrators, employers and employer organisations and last but not least apprentices on both the NATAS and the Modular assessment systems.

Group Selection Process.

The research was mainly conducted in the field by using a semi-structured interviewing process. The subjects were originally obtained from a list of monitors employed by the then Department of Training of Western Australia. A letter provided by the researcher was sent by the department to these monitors and twenty out of one hundred and seventy agreed to an interview. These interviews were conducted at a

variety of venues ranging from university premises to business premises, wherever it was convenient to the respondents. The procedure was as follows.

First it was decided to conduct a pilot study (with representatives from all groups) aimed at informing the questions to be asked in the wider study that was to follow. The aim was to collect data on a set of focal questions that were aimed at stimulating conversation about the perceived reasons for assessment as it was conducted, the purpose, selected criteria, assessment methods and items that intimated whether or not the assessment was considered to be 'good enough'. The important aspect of the pilot was that it allowed questions and issues to be generated not only by the researcher but also respondents. The data collection method was semi-structured personal interview.

Second, the semi-structured interview was conducted by using a page of questions, which the subject read, prior to being interviewed. With consent from the interviewees the interviews were tape recorded. Respondents were encouraged to talk freely about the apprentice training assessment processes within Western Australia, as well as being invited to respond to focused questions. The semi-structured nature of the interview allowed subjects to discuss areas of importance to themselves, which provided very rich data on the research issues over and above those deemed to be sensible from the preliminary secondary data analysis. The monitors selected for this element of the research procedure were specially selected skilled tradespeople by industry (and endorsed by the Department of Training of Western Australia) who were considered experts in their particular apprentice training trade. These monitors were involved in the (State-owned) NATAS scheme and were made redundant when the scheme was replaced by the (National) Modular scheme, which was the second system under review in the research.

At this stage of the research it was decided to broaden the scope of the study to include both apprenticeship systems and three further groups to be interviewed using the same questions. These were TAFE lecturers and administrators, employers and employer organisations, and apprentices. This allowed for the issues to be addressed

from four different directions (triangulation) that would have the advantage of giving a comprehensive coverage of the research issues. Obviously, because of the nature of the semi-structured interview, these groups would have their own perceptions of the assessments carried out within the apprentice systems under review. These informants were obtained from a few initial contacts provided by the (then) Department of Training and then by asking each person interviewed to recommend further possible qualified people to be interviewed who were experts in this particular field. This procedure resembled theoretical sampling as expressed in the grounded theory method (Glaser and Strauss, 1967). Using this procedure ensured that most of the people interviewed were not known to the interviewer prior to the interview. In the example of the TAFE group the lecturers and administrators recommended further lecturers and administrators and apprentices to be interviewed. These were obtained from a variety of different TAFE colleges in the Perth region. The apprentices were provided and selected by the lecturers or by asking for volunteers from classes. The interviewer tried to vary the colleges and the apprentice trade specialism to get a more balanced view from the apprentice group.

There was some overlap between the various groups as some monitors or employers lectured part time at the TAFE colleges or employer groups such as Group Training Associations were responsible for training large numbers of apprentices within their various industries. Project managers at TAFE were closely involved with industry in setting standards. Some monitors and others interviewed were also union members. It can be seen that the research had an input from a variety of interest groups in industry.

Qualitative research application of multiple methods, also known as triangulation, allowed for the research to validate data and the same questions could be analysed using different data sources or divergent groups of social actors who had an impact on the subject under review. Mitchell states,

Data triangulation is the inclusion of multiple sources of data within the same study, with each source focused upon the phenomenon of interest. These data sources can differ by person, place or time. An example is data collected from different groups about the same topic, or at different locations, or during different time periods. (Mitchell 1986, p.20).

Therefore, this was considered to be a valuation tool to focus on constructed meanings that evolved under this method of study. So in conclusion, 'The goal of triangulation in any study is to increase confidence in the trustworthiness of the researcher's data and its interpretation. In the context of trustworthiness, triangulation is most often thought of as a method of demonstrating convergent validity'.(Breitmayer, Ayres & Knafl, 1993, p.242).

Choice of Methods and Research Setting

The methodological argument made earlier explained that this research centred on the gathering of perceptions from individuals. It was considered that, in view of the complex assessment setting and within the present climate of change within industrial training in Australia, the setting lent itself well to a cross-sectional or 'snapshot' approach within a field setting. It was here, within enterprises, colleges of technical and further education and the introduction of outside assessors that the social realities were being formed and 'realities' grounded.

Glaser and Strauss, in their book *The Discovery of Grounded Theory* (1967, p.1), described their method as follows,

Most writing on sociological method has been concerned with how accurate facts can be obtained and how theory can thereby be more rigorously tested. In this book we address ourselves to the equally important enterprise of *how the discovery of theory from data – systematically obtained and analysed in social research – can be furthered*. We believe that the discovery of theory from data – which we call *grounded theory* – is a major task confronting sociology today...

The above ideas had stood the test of time and proved to be a useful method to gather facts on relevant issues. The research was conducted using the grounded theory approach that was redefined by Strauss and Corbin as:

The grounded theory approach is a qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon. The research findings constitute a theoretical formulation of the reality under investigation, rather than consisting of a set of numbers, or a group of loosely related themes. Through this methodology, the

concepts and relationships among them are not only generated but they are provisionally tested. (Strauss & Corbin 1990, p.24)

So what was known as grounded theory was a means by which a derived hypothesis was developed from the collected data. This approach was useful in research dealing with human experience that can be better understood when discovered by qualitative methods than by the alternative quantitative methodology. Grounded theory had also proved of value when looking at new issues or fresh perspective's of established areas of research. It was also able to develop theories within areas that had no history of theoretical foundations that could be of immense value to the researcher in studies involving the mix of human experience and phenomena. Analysts using grounded theory also needed to develop the additional skill of *theoretical sensitivity* to the discovered data. Glaser (1978, p.3) stated:

To be sure grounded theory is a perspective on both data and theory. It contends that there is much value in the conceptualising and conceptual ordering of research data into a body of theory. This theoretical grasp of problems and processes within data is - in our perspective- a very useful way to understand what is going on in a substantive area and how to explain and interpret it. It is a succinct, interesting, and easy way to remember the data and a *transcending* way to view it. The data of the substantive area becomes theoretically tractable.

A further useful definition to indicated what we meant by theoretical sensitivity in the context of grounded theory was as follows,

Theoretical sensitivity refers to a personal quality of the researcher. It indicates an awareness of the subtleties of the meaning of data. One can come to the research situation with varying degrees of sensitivity depending upon previous reading and experience relevant to an area. It can also be developed further during the research process. Theoretical sensitivity refers to the attribute of having insight, the ability to give meaning to data, the capacity to understand, and capability to separate the pertinent from what isn't. All this is done in conceptual rather than concrete terms. (Strauss & Corbin 1990, pp.41-42)

Having referred to the benefits of grounded theory, and recognising the concerns expressed by Glaser (1992) it was necessary to point out that the research procedure could not allow for the pursuance of grounded theory in its pure form. Rather the ideas presented by Whiteley (2000), that there were various aspects of organisations

and their functions that impeded full adoption of grounded theory were adopted. In this case, there were ready made categories of meaning already developed by the originators of the assessment schemes being referred to and these produced an overlay of meaning that made the true emergence advocated by Glaser (1992) impossible to attain. However the principles and as many of the practices as possible were used as a benchmark for making sure that the data collection was rigorous.

One of the issues that was a benefit and to a small extent a caution was the researcher background. The researcher during the period (1970-1987) was a Field Training Officer with an Industrial Training Board in the United Kingdom, whose role involved an advisory function over a specified geographical area. This involved advising small business about using training standards so that the quality of training could be improved and also the quantity of industrial training could be encouraged and increased. The role covered training issues related to management, supervision, tradespersons, operatives and apprentices. This particular 'Board' operated a 'Modular Training Scheme' with each skill subjected to objective testing and certification during the 1980s. Apprentices also attended college to obtain their City and Guild qualifications and both on-the-job and off-the-job training was monitored using an apprentice log book system linked to training recommendations approved by the respective trade. Responsibility in regard to the selection, monitoring and job placement activities of young trainees in the Youth Training Scheme (YTS) developed by the Manpower Services Commission (MSC) in the United Kingdom was part of this role. The Industrial Training Boards were phased out, following a review of the Employment and Training Act drawing controversy and criticism from various sources in the training milieu. Thus the researcher felt that he had the personal quality necessary to reflect 'theoretical sensitivity'. In counterpoint to this the researcher was very aware of the danger of performed categories of meaning and unconscious predispositions when handling data. The data was scrutinised during the supervision process and the researcher made every effort to avoid contaminating the data.

A similar research context to that being studied here was the Youth Training Scheme part of the British National Training Strategy of the 1980's. The study referred to

below, was, in small part responsible for the interest in this particular aspect of training, apprentice assessment. Keep (1986) made some important points and it was thought that by studying the Western Australian scene relatively early in the Australian National Training Agenda strategic framework, some of the aftermath problems experienced in the United Kingdom might be prevented. Keep (1986) wrote that the final, and important, set of factors in the background to the inception of the Youth Training Scheme (YTS) were the problems created by the aftermath of the Review of the Employment and Training Act (RETA), and the Government's decision to abolish the majority of the statutory Industrial Training Boards (ITBs). These, he said, had since 'The Industrial Training Act 1964', formed the backbone of Britain's industrial training system.

Keep (1986, p.5) suggested,

“that work was taking place to design a new national vocational training programme, much of British industry was simultaneously faced with the task of developing credible non-statutory training arrangements to replace the ITBs (Industrial Training Boards). By 30 July 1981, at which time consultations about YTS (Youth Training Scheme) were under way”.

Changes resulted in non-statutory bodies replacing Industrial Training Boards with the exception of seven larger ones. These

“were judged by the Manpower Services Commission to be insufficiently developed to allow a firm decision on whether to retain or abolish the relevant ITB (MSC, 1981b).” (Keep 1986, p.5).

Experiencing such a situation allowed the researcher to be alert to problems that could be associated with abrupt change. This quality of theoretical sensitivity helped the researcher to be sensitive to emerging data whilst the Australian setting was different enough to make it difficult to transport preconceived ideas.

Data Analysis

The Data collected in both the pilot and main studies were subjected to content analysis using grounded research protocols (Whiteley, 2000). First constructs were captured. These were placed in categories of meaning. These, by an iterative process were either strengthened or replaced according to the development of the theoretical

concepts that emerged from succeeding interviews. Devices such as Strauss and Corbin's (1990) conditional matrix, were not used. However, meta categories arising from assessment dimensions were included. An additional tool to help the theorising that developed from categories was, NUD*IST data management technology, Richards and Richards (1994).

NUD*IST software, which helped to locate the assessment methodology node and its 'node children', was the main data analysis software used in this study. In qualitative work there was always the danger of drowning in data. It was important to develop a data analysis plan and NUD*IST facilitated the structuring of emerging categories and subcategories. The extensive data was analysed using the following twenty-five nodes, Assessment: assessment methods; external assessment; monitoring; assessment criteria; employers responsibility; assessment (on job); assessment (off job); assessment time; training; assessment process; standards; shortfalls in standards; natas; assessment flexibility; modules assessment; pre natas assessment; assessment validity; assessment competency; assessment reliability; testing; assessment fairness; education problems; safety and for miscellaneous text odd nodes.

The importance of structuring was well recognised and as Weitzman and Miles (1995, p.238) said:

The structuring of your database according to a hierarchically organised 'index system' of codes, together with a collection of code search operators unmatched in terms of power, variety, or relevance, are what give this program its particular appeal.

Consequently, NUD*IST was the engine for analysis while the researcher made the choices and the decisions about what units of meaning should be and what the respondents was actually conveying. The data itself helped to establish the essential elements for answering the research questions. The developers have written at length (e.g., Richards & Richards 1994) about the flexibility of the system. For example, they argued that nodes could represent coding categories, concepts, individuals, and so on. (Weitzman & Miles 1995, p.243)

The use of such software allowed the categories, once emerged from research interviews, to be grouped together in 'families' or hierarchies, depending on their

status with regard to the research questions. Parent and sibling nodes were generated and defined informing the direction that the responses had taken. Raw data was analysed in a systematic manner to provide generated concepts and relationships between suggested categories. It was interesting to see how these relationships developed even from a small data sample, such as the pilot study.

NUD*IST also provides good text search capability. You can search for specific strings of characters in the text-typically words, phrases, or numbers – you can search for patterns of characters. (Weitzman & Miles 1995, p.250)

Text searches of the data in the main study such as 'Assessment methods (Total number of text units found 295; finds in 45 documents out of 48 online documents, = 94%), Assessment (Total number of text units found 364; finds in 63 documents out of 65 online documents, = 97%) and Standards (Total number of text units found, 196, finds in 65 documents out of 80 online documents, = 81%)' also provided data collected and arranged in a different format which allowed the researcher to look at the data from a different viewpoint and suggested other directions to research. This was important because often when a person was confronted with massive amounts of data it was sometimes difficult for the researcher to distinguish the wood from the trees. Therefore, this software proved valuable in this regard with its ability to help to structure categories when they had been suggested and generated from the research data. NUD*IST also was capable of producing a tree display which hierarchically arrayed the categories and sub-categories for the construction of this study.

In conclusion, the research adopted a constructivist approach. The research design was a two stage study, a pilot and a main study. Both studies adopted the same research procedure in terms of selection, data collection methods and data analysis. A grounded research, rather than grounded theory approach was adopted. Content analysis protocols from grounded theory were followed and the analysis was supported by NUD*IST technology.

Limitations of the research.

Weaknesses.

It was probable all fieldwork research would have some element of weakness in the manner it was conducted. For example, the selection of respondents; the unrestricted opinions of respondents; selection of open ended questions and the presentation of findings, all these contributed to shaping any research. Qualitatively this could be minimised by strict data collection procedure, random selection of subjects, unrestricted data collection from respondents and by use of Glaser and Strauss (1967) interpretation of 'grounded theory' allowing data to evolve into the resulting theory. The researcher's choice of the research area (another potential weakness) was based on a perceived 'problem area' within the business sector. The research was therefore an investigation of a recognised phenomenon which was a real area of concern to industry. A further weakness, the sample of eighty-nine respondents interviewed considered too small. However this was a semi-structured interview (not a survey) often of an hour's duration which produced a massive amount of rich data, which was supportive of the research aims by being similar in content. The data was collected by use of a semi-structured interview, a weakness because it was the sole measuring instrument. Obviously other methods such as a survey (a previous report used this method), or group interviews might have produced different data because the respondents might have influenced each other, as in the latter case.

The researcher had had previous experience as a trained interviewer within this research area but even so factors such as age, sex, nationality or appearance might have resulted in some bias. Also there were similar differences between and within the respondents groups of monitors, lecturers, employers and employer bodies and apprentices. Even though the groups were selected at random the male/female ratio might have been considered unbalanced, however would probably be representative of the trade in question, for example hairdressing had a larger number of females, whereas the metal trades more males. There might have been a weakness within the selection of focal questions and the different perceptions of understanding among the groups especially in the case of the less mature apprentices. However although there

were differences between the groups the data produced had major similarities to reduce this bias to a minor problem. So there were factors which worked for and against the weaknesses perceived in the research.

Strengths.

The researcher used a flexible approach, and adopted a policy of allowing the interviewees to freely express their opinions, so the respondents produced unrestricted data without interruption. It was interesting to note even with the diverse nature of the respondents the results were so similar which was an indication of the validity of the research.

The researcher's 'theoretical sensitivity' developed by experience in industry helped to balance the bias inherent in research activity. It was important to mention that the participants (not known to the researcher) may have been reluctant to produce all relevant data to be recorded because of issues of trust with a stranger. Evidence suggested when the tape recorder was stopped often more colourful data was produced, but not used in this research. Many people interviewed held responsible positions and were considered experts in their trade and so the rich data produced was relevant to the research. A further strength was the findings already surfacing in the data supported the developing themes which could be explained by AQI theory. The principles of triangulation was used and each of the groups of respondents findings tended to support each others interpretation of the focus questions in the main. This was an obvious strength of the qualitative approach of data collection in the study.

Summary.

The research had been based on the principles of grounded research which could be summarised as follows; the field researched with prepared questions; also researched with an open mind to reduce bias; the relevant data gathered; the data analysed ; themes developed from data and from themes the development of a theory. The four research groups namely monitors, lecturers, employers and employer bodies and apprentices were triangulated by having been given the same focused questions, interviewed in isolation, which gathered the data, the facts gathered was analysed by

using NUD.IST to break down the information into twenty five nodal categories. This in turn developed themes for each of the research groups which had allowed the theory of Assessment Quality Interpolation (AQI) to have emerged to offer an explanation of the findings revealed by the research.

Chapter 4

Pilot Study

Introduction

This pilot study was the first part of the research and procedurally was undertaken to inform the main body of the study. A group of ten respondents composed of two each of monitors, TAFE lecturers, employers, apprentices and training consultants were selected to take part. The intention was to test the focal questions presented in Chapter one. There were four areas of sense-making that needed to be informed. These were: reason or purpose; assessment criteria; assessment methods, and; a sense of whether the assessment was perceived as being good enough, for example concerning validity, reliability, fairness, and flexibility. This led to a series of questions:

- | | |
|-----------------------|---|
| 1. Why? | Reason or Purpose of Assessment. |
| 2. Against What? | Assessment Criteria. |
| 3. How? | Assessment Methods. |
| 4. Is it Good Enough? | Validity, Reliability, Fairness, Flexibility. |

The above questions were used in a semi-structured interview format (Source of questions, Rumsey 1994, p.30). The 'Reason or Purpose for Assessment' question 1, tended to establish the ground rules of the research and focused the minds of the interviewees on the necessary requirements for the process.

The 'Assessment Criteria' question 2, was aimed to establish the standards against which the assessment was being conducted. This, in the NATAS case, was in theory the trade training schedules; and, in the Modular example, integrated competency-based standards that were progressively based on National Standards during the period of the research.

The third question on the 'Assessment Methods' used to conduct assessments on both schemes, showed the variations on procedures, collected evidence and assessment tools between industry and TAFE.

The final question which asked ‘are the assessment processes good enough?’ aimed to surface any differences between the assessment processes when evaluated against the required standards. The main areas under consideration were validity, reliability, fairness and flexibility of the assessment systems under review.

The interviewees were asked to read and reply to the focal questions aided by a set of notes (Appendix C), and tape recorded. They were allowed maximum flexibility in this process and the questions could be taken in any order. The main emphasis was allowing the interviewees to freely express their viewpoint without undue interruption from the interviewer.

Assessment Methods

Figure 4.

The Schema below depicted the categories that emerged from the conversations described above.

Category	Pilot Issues
ASSESSMENT METHODS.	
Assessment Procedure	Focus on NATAS and Modular, Pre-NATAS not as good
ASSESSMENT. (Validity), (Reliability) (Flexibility) Fairness)	Validity (Varied comments) Reliability (Lockstep v self pacing) issues Flexibility although employer ability an issue Fairness (Grading and other issues)
EXTERNAL ASSESSMENT.	External Assessment Advantages but recognised the role of tradespersons as monitors Resources such as time an issue
EMPLOYERS RESPONSIBILITY.	Ability, time and resources of smaller organisation employers Industry Standards. were welcomed Uniformity was important but Diversity recognised.
STANDARDS.	Shortfalls in Standards Assessors Competency Testing issues Shortfalls (Variations). Monitors/Lecturers issues Selection Standards uneven

As this pilot was intended to give a flavour of the way that assessment conversations went, comments from individual respondents would be used to illustrate various issues and concerns.

The coding system referred to the interview texts in the appendix, and the P (indicated pilot); M (indicated monitor or manager); L (indicated lecturer); E (indicated employer); A (indicated apprentice or administrator) depending on group allocation; T (indicated training consultant or training officer) and a numeral (indicated different files of respondents). In the main study that followed in chapters 5-8 the P was omitted in the coding system.

Trade Training Schedule

A concern shared by monitors was in the trade training schedule (TTS) and its claim to allow a degree of formal measurement on specifically identified assessment criteria. Every monitor on the NATAS scheme had one. The TTS emerged as an area for further study based on such comments as the one that depicted it as a 'loose form of assessment', therefore open to interpretation. The point was made that not every company was able to train every apprentice adequately to every skill required of the schedule. There was a requirement to attach apprentices to other companies and so ensured they gained adequate skills. Many companies had a specific, or narrow, focus to their apprentice training and therefore apprentices were trained to company requirements rather than outside or national standards. Monitors were in an ideal and impartial position so ensured all skills were covered to an industry standard. It was an essential requirement that the apprentice training provided was to a recognised standard in industry. Positive elements of the assessment process emerged in the pilot such as the comment by a monitor (PM1) that: 'the apprentice is encouraged to talk his way through any operation, which allows an experienced monitor to evaluate the performance in question'.

Bottom-line acceptance criteria for a skilled tradesman was traditionally held to mean skilled to Australian standards. The NATAS scheme had trade training schedules (TTS)

that were basically a tick list of tasks that had to be completed to achieve skilled status. This did not appear to one employer (PE10) to be adequate.

Another monitor in the pilot (PM3) commented on the pre-NATAS situation where companies had been left to do the training. In this monitor's view most people who completed apprenticeships in this way were useless. The NATAS system, in this monitor's opinion, with its assessment process, had made a positive difference to the apprentice standard. Employer activities within the assessment procedure appeared to be of great interest to monitors in the pilot and, as related by respondent (PT14), employers needed to be questioned on this 'evidence of competency achieved by the monitor's judgement on the method of assessment.'

Some training consultants, who held a key role in the NATAS assessment scheme, were asked: 'How are shortfalls identified.?' The following reply was indicative of the outcomes focus of training assessment.

This is achieved by the apprentice giving demonstrations of competency, looking at on-the-job tasks, and interviews with the apprentice.

It should be remembered that the monitor was a skilled tradesperson who was capable of making an assessment of the general abilities of an apprentice using the above method. However, how much time was given to the above assessment would also play a part – more time spent, greater accuracy in assessment. Monitors were asked about this element and they said that generally they only visited the average apprentice twice in a four-year apprenticeship in the NATAS scheme. This suggested an area for further exploration.

The standard of tradesmen was not improved by the above system according to employers. The one quoted here said that although the assessment was, in his opinion, 'tighter' he had been critical of previous and existing systems, because they did not produce, in the final analysis, the tradesmen they required. The employer's opinion, especially given the doubt expressed by monitors on employers' assessment abilities, was considered to be important enough to be explored further in the wider study.

Lecturers played a relatively new role in the NATAS and Modular schemes, in contrast to the role they played within the time served system. When asked, are assessments good enough? This lecturer replied:

people say it is good enough but then you ask the question, what is good enough? There are no stamped out standards to say it is good enough and therefore I believe what is being done now is generally good, very good, given there are no guidelines. (PL4)

From this it would appear that, at this stage in apprentice training assessment, each individual lecturer developed his or her own guidelines on which to base assessments, and the indication was that these were viewed positively. It would be useful to see whether and how lecturers' views changed within the wider study.

In 1986 the State Government abolished the final examination for apprentices that had been a feature of the previous scheme. Therefore, assessment became the responsibility of companies but there was a monitoring group of skilled tradesmen to ensure that some forms of uniform standards were maintained:

There is a model for all competencies. Trade Descriptions Groups (TDG) define what are the competencies and knowledge required. (PT14)

The assessment form listed the tasks that companies were expected to have completed. However, some skills were best assessed at the college which was responsible for signing off some training. So there was a division of responsibilities between companies and TAFE. This appeared to have had its own difficulties because of the diversification of industry, although (PT14) stated that:

TAFE provides a Certificate of Trade Studies, linked to the programme which fits the competency model. (Training consultant, Interview)

Companies were expected to sign off the completion of training and the monitors checked this on their visits. In this regard, (PT14) stated:

A monitor has the competency standards, and is experienced in the relevant trade. (Training consultant, Interview)

The tenor of the pilot conversations concerning monitors was that they were one of the strengths of the NATAS programme. The selection of good skilled tradesmen, up to date in their particular industry, to act as monitors in their relevant trade was considered to be reassuring for industry. These tradesmen had professional standards and provided an 'experience yardstick' with which to measure the competency of the apprentices. A lack of funding was associated with the reduction of visits monitors were able to make to industry.

It was suggested in the pilot that monitors who were specially selected experienced tradesmen under the NATAS scheme often had to develop their own 'rule of thumb' criteria in the assessment of apprentices because the trade training schedule did not cover the criteria to an adequate depth and was open to interpretation. However, the assessment arrangements were considered to be a major improvement on the previous (time served) situation and should be regarded as a step in the right direction for assessment, as it documented the requirements for apprentice training within the State. Lecturers within the TAFE system were acknowledged as being responsible for imparting necessary theoretical knowledge and employers were obligated that this knowledge was put into practice along with the 'hands on' skills developed in the workplace.

Resources

This emerged as a strong category, even within this rather limited pilot study. Monitor (PM2) considered that this NATAS system had the potential to produce a skilled person at the end of four years. In his view the system had broken down due to a lack of finance. This had resulted in training consultants monitoring first year apprentices, rather than all assessments being conducted by monitors. Third-year assessments being completed late in the fourth year, which made any necessary remedial training difficult. Also, final assessments that were used to enable reduction in terms, or a shortened apprenticeship, had discovered shortfalls in training at a very late stage.

Resource issues meant that assessments were being completed by firms; therefore, saving on monitors, and if they had a reasonable reputation for training, no further action was being taken. Checks were only carried out on final assessments for reduced or shortened term of apprenticeships. Therefore, it was, said respondents, possible for apprentices to serve out their term without any form of independent assessment. This had implications for the standardisation of any apprentice standards in industry. The system appeared to be going backwards, relying on the employer to complete competency skills but no cross-checking or independent assessment.

Modular

The Modular system which replaced the State NATAS system and was being run by the Office of Industrial Training attracted some comment. The intention, to introduce the Modular system to all trades was appreciated but so was the fact that it would take time.

An example of a fairly large organisation was chosen to inform the main study on the topic of modular assessment. The organisation had many apprentices and the internal assessment, covering areas such as performance, attitude, personal quality and employment was completed by the relevant foreman:

I suppose the big weakness in it is the assessment by the employer, that you are going to get a lot of variation in the value of the assessment, because ... the different individuals doing it. Under the old system (NATAS) when we had a check on it by way of apprenticeship officers visiting working places and actually making their own assessment of apprentices. That has virtually gone except in extreme cases and I think that is a big loss really. (PE11)

This organisation, said the employer, has replaced the NATAS system (State) with the Modular system (National). The NATAS system had monitors that assessed apprentices at least twice during their apprenticeship. This outside assessment tended to establish some form of uniform standard. However, when the system changed to a Modular system, the assessment staff were reduced to minimal levels and the emphasis was placed on companies to carry out their own assessment. External assessment can establish uniform standards within industries or trades, and identify

shortfalls of standards within particular companies. However, if organisations were allowed to assess to their own standards a wide variation of skills must be expected, which may result in tradesmen not being of a uniform standard. This was an important point because industry required tradesmen to have reached a certain basic standard to be considered a skilled person. If this were not the case the status of all tradesmen in a particular trade or industry would be reduced and reputations damaged.

Apprentices also commented on the Modular system. The training was conducted in a Modular scheme (National) which was controlled by the computer. So the computer controlled the continuous assessment, and the worksheets as well as the final examination for each module. The training was controlled self-based-learning using a computer system. Apprentice (PA13) stated,

We get an exam after each module and in the module you get a couple of tests, assignments and worksheets and practical assessments. (PA13, Apprentice (hairdressing), Interview)

The apprentices liked the system because they could progress at their own speed rather than adjusting to the speed of the group. This system of controlled self-pacing appeared to be working well, but it still needed supervision. The younger apprentices needed to be taught the system and introduced into the self-pacing learning process before controlling their own speed of training. However, all the work had to be completed before the computer program allowed them to access the examination. Although the brighter or more independent apprentices benefited from the system, it should be noted that some apprentices preferred to be taught in the old fashioned method.

The Modular scheme (National), which was competency-based, was seen as a major step forward in apprentice training by the government. The modules were based on job skills and linked to TAFE courses with specified learning outcomes. This system, [Modular] (National), was considered better than the old TAFE system that had 142 hours of training and a two hour test with a 50% pass mark. Consequently, from the apprentices' point of view, the apprentice could do badly in certain subjects and still pass the test.

Lecturers talked about the assessment of modules and the fact that each college and section had its own assessment criteria. This lecturer stated:

I believe we are fairly consistent in meeting outcomes but the testing is not the same. In other words the testing I would use will test the outcomes, the intent of the module, but it will use different examples and different types of questions. (PL5)

When comparing the on-the-job and the off-the-job assessments this lecturer made the following comments:

if you are comparing the two I would say the off-the-job component, is tested every part of it, the on-the-job varies from fairly...my best guess fairly low levels of proper assessment, genuine assessment, to other people who have training officers, some of them do it extremely well. (PL4, Lecturer, Interview)

TAFE, which controlled the off-the-job assessment, completed some form of assessment on each course as a matter of routine. Company assessment was inclined to be less formal in some cases with apprentices only allowed to do certain work at each stage or year of training depending on the subjective views of supervisors or management. Industry was not a uniform body and therefore it was reasonable to assume that there would be variations in assessment between different organisations. This was somewhat contained or standardised when an outside agency that has impartial standards was involved but when this was not the case an uniform standard of training was not guaranteed.

Assessment

Validity – each college developed its own assessment guidelines and there was little cross pollination of standards. Another lecturer said:

I guess every college does its own thing and there has been some discussion saying we should have standard types of assessment. (PL4, Lecturer, Interview)

A common complaint from industry in the pilot was that the young workforce had not been prepared in basic terms for the requirements of modern industry. This also

created difficulties for TAFE lecturers who were not part of the apprentices selection process. A different lecturer continued:

A lot of students will go through and we find out have a problem. All of a sudden we find out they are dyslexic and they have been through twelve years of compulsory education, nobody has had the time. They have just become a failure that has gone back into the non-academic group and they have stumbled their way through it, and I have got quite a few and they find that they have a little bit of a problem doing some of the assessment, well not so much the assessment, that and some of the learning. (PL5, Lecturer, Interview)

There were variations in employer assessment of their own apprentices. When they said 'records are completed with the same pen' this meant that the assessment was carried out at one particular time, when the normal expectation would be that it was an on-going process. However, in some cases it might have been summarised at the end of the apprenticeship. Paper work or record keeping did not appear to be a strong point in some companies whose main interest was survival or profit making, not filling in forms. Therefore, without outside regulation, records would be, in some cases, just not completed, or lost.

In some organisations such as the one below, the supervisor appeared to be responsible for assessment:

once again that is the immediate supervisor's responsibility and it would be in most cases a combination. I think most of them would talk to the apprentice, they would also talk to others who have worked with the apprentice and also utilise his own direct knowledge of the apprentice's competency in regard to the various areas being assessed. (PE11, Employer, Interview)

This was a very good description of how most assessment were conducted in the workshop, by word of mouth and observation and an impression of the value of the apprentice as a fellow-worker. Paperwork, it seemed, was not popular at this level in the workplace but it was suggested that the memory of any individual left a lot to be desired.

Reliability

Respondents suggested that assessment methods differed these days in comparison to the old lockstep method. This was where every student was taught at the same pace and assessed at the same time. New schemes were characterised by student involvement in self-pacing to be assessed, when the tester was informed and the assessment could take place. Students now worked at their own pace and more flexibility was given as evidenced by this college which covered the theory aspects in the first six weeks of a seventeen week semester. This allowed students to progress to higher stages earlier. One apprentice said:

yes like a module, a module book ... yeah and we get all our assessment and assignments and exams from that. (PA13)

This particular college had computerised the assessment of hairdressing apprentices, and the system that was being described was self-paced learning. In the view of one lecturer:

in hairdressing I think assessment is essential especially with practical skills, the training of a hairdresser is not the same as any other trade, we are the only trade licensed to touch people. (PL6).

This lecturer further remarked:

your actually hands on, your cutting the hair, your colouring the hair or you are chemically reforming that hair, you have got to be assessed on each step of the way before you get to the ultimate. A lot of our chemicals are toxic so that means we need to protect the person, there is a lot of tints that can blind somebody. So you have got perms solutions that can likewise do the same, or they can set off allergic reactions in a person which ends up in hospital. They can be hospitalised for weeks if you have not selected the correct solutions to use. (PL6, Lecturer, Interview)

This illustrated the need for reliable and carefully assessed training to recognised industrial standards. If this did not take place for any reason the implications were serious for public safety and the reputation of a particular industry. These comments indicated that the training of both on-the-job and off-the-job needed to be conducted in a professional manner. Apprentices needed to have basic education qualifications apart from trade skills, because poor 'Maths' or 'English' might result in failure.

This employer, including the procedure on failing, challenged the claim to validity of the entire assessment process:

Appeals process, there is no need to appeal of the current assessment system because if you are mediocre you get through, to fail the existing system you either do not turn up to TAFE or you are absolutely and totally illiterate, blind deaf and do not want to go through. That is the only way you fail. (PE9, Employer, Interview)

There was enough controversy within this category to warrant the inclusion of some of the stated concerns within the wider study.

Fairness/Flexibility

The competency-based system seemed to cause some problems to lecturers who did not want to conduct examinations in a pass or fail manner. The comments below were examples of the concerns voiced:

at this stage we have insisted in keeping marks, and yet we are trying to come to competency-based training. What we have done, have lifted the level, where we used to have a 50% pass mark on theory and assignment and prac, coming closer to competency-based, because in theory how I interpret competency-based training, is something that has got to be 100%. All right, and this is the standard that interests us, say to achieve that competency you should do it at tradesman's status or tradesman's standard 100% guarantee. (PL6).

An employer however, pointed out that:

the current system is very fair, everyone either passes or fails and no one is able to assess how well they pass or fail. So for your poor students the current system is very very fair, for your good students your current system is very unfair, you are offering in TAFE assessment no credibility to their ability. When we do their assessment we are only offered the same, they are only recording, the thing that gets recorded is whether they passed their assessment or they have failed their assessment. (PE9, Employer, Interview)

The view expressed by the employer was that the assessment was not adequate for his needs, and the information from the college did not provide him with sufficient indicators of abilities.

This was very interesting because competency-based training was very different in many respects from previous systems. Problems appeared to occur when students attended three-week blocks of training and then had a (hold) or fail mark for a module. This caused administration and logistical problems if the student had come in from country regions because they needed to be retested during the next block release period. This was resolved in the following manner:

In terms of making it accessible I have broken that down, if they get a score of hold and they need to remediate. I have got no problems with them doing it in country areas, doing it between blocks. I will send tests to the employer and I would say ... please supervise this person with his assessment be it practical or theory, and that was a bit hard to take in the realms of exams and secrecy and all the stuff we used to have. (PL5, Lecturer, Interview)

Competency-based training was being introduced into hairdressing but it would appear that employers were not fully in favour of the system. As the following lecturer suggested there may be an emerging issue of basic understanding as to what competency-based training was about especially in the assessment area:

with our employers there is a definite resistance to competency-based training, because there is not a mark put on things, as in competencies, you can either do it or you cannot do it. Employers in the hairdressing trade want to actually see a mark on things, they want to know that the student put in a superb effort, she got 90% in her assignment. The next girl coming along did not put an effort in and she got 55%, but they both get a pass. (PL6, Lecturer, Interview)

Still on the theme of fairness, a different lecturer discussing competency assessment stated that:

Under the system we are using now each topic is delivered and assessed, we set a ball park figure on what we consider is competent. Now there is another argument, what is the level of competency, there was a thought around which said 100%, we in this college and section decided we could not live with a 100%, where in life do you have to prove 100% on your first and only time of assessment. So we set a figure of 75%, now any student that does any of these tests, if they get 75% of the tests at the time of testing correct. He is ticked as having passed that stage or having reached that level of competency at the time of testing... (PL4, Lecturer, Interview).

Apprentice PA12 was asked if the assessment was good enough, she replied:

Yes, with the computer it is actually like multiple choice ... which makes it a bit easier, but your percentage mark is like 75% instead of 50%, so it works out the same I suppose. (PA12, Apprentice (hairdressing), Interview)

The previous system had a pass mark of 50% and now the requirement had been updated to 75% because now the system was supposed to be competency-based (National). This meant that the standard used was 75% of competency within the existing scheme. So it seemed the previous system was more theory-based with a lower pass mark, while the modular system placed more emphasis on practical skills. As competency-based training should be understood to mean that a tradesman or apprentice was competent to do a particular job a pass/fail assessment could only mean that the person was competent or not competent to do a particular job.

External Assessment

External assessment allowed for a 'hands on' method of supervision of apprenticeships with the active involvement of employer and tradesperson. So the apprentice could be individually assessed against recognised criteria, and, in case of difficulty, a remedy could be found.

Some employers had identified an area of interest concerning assessment. Apprentices were assessed on one area at a time, sometimes with a considerable time lapse between related skills. An employer mentioned the reality of company apprentice assessment:

I think what is tending to happen rather than these being completely progressive, which really means they should be up to date all the time, right through the whole four year apprenticeship. I think in many cases there is a dash done in the last month of the apprenticeship to update the things. I would say that quite often nothing is done until letters start coming from the Department of Training to remind the employers that the end is near, and they will need the assessment back. (PE11, Employer, Interview)

Many employers preferred the external monitoring role played by the Department of Training as the responsibility of assessing apprentices fell to someone else.

Time

Monitors (NATAS) were given two hours to complete an assessment visit. This could include administration matters such as briefing employers, tradesmen and apprentices on the system. Therefore, time on actual apprentice assessment would be less. Independent assessment was considered essential to provide 'crosschecks and balances' on apprentices' knowledge and skills and ensured that the industry standard was achieved. Like monitor (PM1), others considered that two assessments in four years was not adequate. His recommendation was that apprentices should be assessed every year to ensure that the correct procedures were in operation.

The main responsibility for training apprentices lay with industry, as the apprentices spent most of their training time in the workshop. TAFE was mainly responsible for theoretical training although some basic practical training was given usually, with out of date equipment. A lecturer pointed out that:

machinery we have got here is not up to date, but what we have got to remember is that TAFE only has, and only ever intended to deliver theoretical concepts, product training is wholly and solely an industry responsibility.
(PL5, Lecturer, Interview)

The amount of time spent at TAFE was about 144 hours per six months, this, according to the lecturer:

is the equivalent of one day per week for eighteen days, I bring them on a block release. Now that is equivalent for one day a week for eighteen weeks.
(PL5, Lecturer, Interview)

Off-job v On-Job

The employer was responsible for the on-the-job training of apprentices and this included the recording of achievement of particular skills or competencies at a tradesperson's standard. The employer had a copy of the trade training schedule that covered the requirements an apprentice needed to achieve competence in the NATAS scheme. The monitor's task under the NATAS scheme was to visit the apprentice and assess the skill levels in comparison with the schedule. It was important to note that

this was not at an apprentice level of achievement but at a tradesman's standard of competence within a particular task. If any shortfalls in standards were identified, it was the employer's responsibility to ensure the apprentice was trained to the required standard. TAFE was responsible for delivering and assessing the off-the-job aspects of apprentice training.

Indicative of employers concerns was the following comment:

People like foremen have got a lot of things on their minds and we find that one of the big problems are getting the foreman to do the assessment. Some of them do an excellent job of assessing once you can pin them down to it but my experience has been that quite often they run very late with producing the goods. That is a big problem and I am sure it is also a problem with other employers. (PE11, Employer, Interview)

Standards

Standards were an essential part of both the NATAS system, and the competency system (Modular). Apprentices needed to be assessed against the recognised industry standards within a particular trade. Therefore, external assessment provided an impartial and independent means of achieving this aim. The standard and ability of the tradesman responsible for apprentice training was another important consideration in this regard, especially in the area of on-the-job training standards. It seemed to be an issue as this employer contributed:

The validity is hopeless. There is no validity in the assessment system at all. As a matter of fact many good tradesmen that are coming through here are totally ashamed of what they see. It tends to denigrate the standard of tradesmen. So if we talk about the validity currently [February, 1995]. The current system is destroying the validity or the status of tradesmen. (PE9, Employer, Interview)

TAFE lecturers supported the problematic nature of this issue:

all these documents that are written by National Metals are competency-based, using competency-based format, except on the criteria of competency-based, since we have an industry standard, you write a syllabus to it. There have never been industry standards so the documents we have got are written in competency-based terms but the key stone has never been there. (PL4, Lecturer, Interview)

When companies had proved to the assessor that they could train apprentices to a good standard, these firms were allowed to do their own assessments. Monitor (PM3) established his own interpreted standard in the auto-electrical trade for the NATAS scheme (State). Improvements to the system were not implemented because this system was replaced by a Modular system (National). NATAS appeared to be producing skilled people, within this monitor's experience. However, he was unable to be certain of what happened to the apprentice after the apprenticeship had been completed. Some apprentices were sacked and others re-employed. Therefore, companies seemed to have made some rough and ready judgements on apprentice training standards.

TAFE was aware of the link between teaching standards of lecturers and the eventual standard of the student. Reports in the pilot were that part time lecturers were very closely supervised and trained before taking classes on their own. Previously, in the hairdressing trade, a good hairdresser from industry would come in for the required period.

This college's computer self-pacing system (Modular) appeared to be working well, according to responses. But this was qualified by a dependence on the quality of staff and supervision of the system. Students used a computer managed learning system to access a particular worksheet, to work through and practise, prior to any assessment. They repeated the worksheet indefinitely until they got the solution. Consequently, it can be seen that progress was closely controlled by this particular computer system. Problems were identified and solutions found for the students. Apprentices self-paced their own study and were prepared for any assessment. The student, said the lecturer below, also had a computerised record which could be accessed at any time and contained the whole history of assessment:

The computer marks it and tells them what their score is immediately and that also gives them a printout of the questions that they got wrong so that they go and revise them if they have got a fail. (PL7, Lecturer, Interview)

It appeared from comments that information was available but generally not sent out to any employers who were only interested in final examination marks. It was

surmised that employers, as a rule, were perceived to be too busy to look at individual module marks.

Employer PE9 stated, for example:

I have employed many tradesmen and they are not tradesmen, they have passed at minimum levels and cannot read a drawing, cannot put things together. So yes the current system is very fair for poor tradesmen, not fair at all for good tradesmen. They are a liability of the existing system ... no one knows how well they are assessed or not, so they are a liability of 100%. (PE9, Employer, Interview)

This employer continued:

Other companies in my industry, who are training apprentices, are using their apprentices as a relatively cheap form of labour ... A very good reason for having a good assessment system is to improve the status of tradesmen. Tradespeople currently in society have not got a very good status (PE9).

A different employer was asked if the standard within competencies of the modular system was at the required level. To this he replied:

I think they can probably do with some tidying up and I think that ... one of the big problems with the system when it came in was that they seemed to go off half cocked. TAFE was not ready for it, employers, a lot of them, did not even know it was coming. We were caught out to some extent we did not know just at what point it was going to be introduced. (PE11, Employer Interview)

This was an employer's view of the effect of change of system to a particular industry at the grass-roots level. The diverse nature of industry, especially small business, did not take kindly to change of systems. It seemed from the pilot that employers needed more time to absorb new ideas and required extensive briefing.

Shortfalls in Standards

There appeared to be gaps in some peoples' skills and knowledge, and a variation of standard from very good to very poor. The issue as to whether the system was producing skilled or competent people at the end of the process was answered in the following manner:

Are we producing skilled people ... a lot of people will say we are not. I believe we are but what you have to be very careful with is what you call a skilled person, everyone gets a certificate of trade studies. (PL5, Lecturer, Interview)

This was a very interesting answer because it raised the issue of a definition of what was regarded as a skilled person. A lecturer defined this as follows:

He is skilled to a level of being able to survive. He must continue to practise that skill, he must continue to keep up with new technology or he will very quickly become de-skilled and an apprentice, when we put them out, I believe, has got the base skills of a tradesperson, able to think for themselves ... without supervision. (PL5, Lecturer, Interview)

This definition reflected the basic description of what the apprentice training and assessment provided to industry. A basic tradesman that was capable of surviving in the workplace if he practised his skill and kept up with technology. However, this lecturer was not confident of the standard and stated that supervision was needed in certain areas. He went on to state that they were, 'competent to the level which they are trained' (PL5, Lecturer, Interview).

This employer was not happy with the general competency standards. He said:

I cannot use the people that are being produced. The tradesmen I employ I cannot use effectively and the apprentices that I have got I cannot use them effectively. (PE9, Employer, Interview)

This employer was asked if, in his opinion, skilled craftsmen were being produced after four years of training. To this he replied:

I think we probably are, it is probably more of a question of whether we could do it better than what we are doing, or whether indeed the system we have got is better than the system we have replaced. I think there are a lot of people tending to think now that maybe the old system was not so bad after all. (PE11, Employer, Interview)

The system in use in this organisation was the Modular system (National) which replaced the NATAS system (State). The above was a very perceptive answer with its emphasis on the system, or rather the organisation and method of training. Training of

apprentices (on-the-job) was for the most part working alongside a tradesman in the workplace, the major differences within systems would be managing, recording and assessing the training of apprentices.

Assessor Competency

Another matter to be considered was the competency of the assessor. This lecturer stated:

Assessors have sufficient competency in assessment techniques, most of our lectures have done teacher training... (PL4, Lecturer, Interview)

However although assessment techniques were used in TAFE the interpretation of industry standards could differ. Often there were different lecturers assessing courses, so it was possible that assessment would average out and be relatively fair to the student. This lecturer stated:

They never had the standards, they've got the cart before the horse, so really whatever we are testing against at this stage is the integrity of the lecturer's best interpretation of the industry standard. (PL4, Lecturer, Interview)

Testing

TAFE colleges usually operated tests without any industry guidelines. They often keep files of tests developed over time and the lecturers drew on these when assessing the students. However, they believed the tests were valid:

So I believe they are valid or they know what they are assessing because the questions are based on our best intention of that work. (PL4, Lecturer, Interview)

This employer (PE9) did not like the pass/fail method of assessment at the college. The standards of work were customer driven in this company, the customers were always asked for their requirements. Tradesmen were selected on their ability to do the required work, therefore it was important to know each tradesmen's abilities and capabilities.

In this case the employer was asked how tradesmen were assessed on the shop floor and he replied:

put them through a skills test and now I have actually employed some management advisory people we are working with, and we are putting together our own training programme and skills assessment programme for every skill that we need and when we bring people in place. They are going to do a four hour skills assessment test to the standard industry requires. (PE9, Employer, Interview)

Selection

The standards of tradesmen in industry were variable, according to this employer, which created problems for management and small business owners, especially when recruiting new employees. This employer was concerned about the issue mentioned below:

One of the reasons is that they are letting people into trades who are not tradesmen, and they are bringing down the total standard all around. (PE9, Employer, Interview)

Summary

To ascertain the assessment methods in used usually involved questioning the student, and matching statements with written or practical accounts of assessment. Every monitor, in the case of the NATAS scheme (State), had a trade training schedule that provided assessment criteria. These monitors, in most cases, only visited the average apprentice twice in a four-year apprenticeship.

Monitors who were specially selected experienced tradesmen under the NATAS scheme often developed their own basic criteria in the assessment of apprentices because the trade training schedule did not cover the criteria to an adequate depth and was open to interpretation. However, industry had been critical of previous and existing systems because they had not produced the tradesmen they required.

The NATAS system (State) had been replaced to some extent by the Modular system (National) which was run by the Office of Industrial Training. However, when the system changed to a Modular system (National) with its own assessment package, the assessment staff were reduced to minimal levels and the

responsibility was placed on companies to carry out their own assessment. This brought the resourcing issue into focus.

Industry was responsible for practical assessment of the on-the-job training of apprentices. TAFE was responsible for the theoretical aspects of apprenticeships and delivering and assessing the off-the-job aspects of apprentice training. There seemed to be merit in further exploring the perspective's of the key stakeholding groups suggested in Chapter 1 as each had a set of issues impacted on assessment.

For example, each college developed its own standards and guidelines for a particular trade. Therefore, a view expressed by an employer was that the assessment was not adequate for his needs and the information from the college did not provide him with sufficient indicators of abilities (e.g., the pass/fail assessment which further compounded the issue). The employers seemed to prefer the traditional college grading system, usually in percentage terms. However, competency meant that a person was competent in completing a task. A graded competency system where the task completed could be partially right, was a nonsense so the pass/fail preferences needed to be explored.

The first requirement of a competency-based system, particularly a national one, was an industry standard for each job-related task. That the required knowledge, and skills had to be achieved at a standard level, was another important requirement. These tasks arranged in an integrated and logical order produced a competency-based system. However, according to some employers, people with low standards were managing to get through the apprenticeship system supervised by colleges and employers.

The major outcomes of the pilot study taken forward in the design of the larger study were the categories of 'Assessment Methods' and 'Assessment' and 'Standards'. These had been considered the major categories. Also included in the larger study were nine sub-categories as minor headings. These were, 'perceptions on both NATAS and Modular', 'perceived validity', 'reliability', 'flexibility/fairness', 'external

assessment', 'time given to assessment', 'employers' responsibility', 'industry standards', 'variations in interpretation of standards'. Additionally, items such as 'perceived shortfalls in standards', 'competency of assessors', 'testing' and 'apprentice selection' were discussed.

Chapter 5

Discussed Findings Monitors

Introduction.

As explained in chapter three, this research sought to elicit perceptions of the key stakeholding groups concerned with the operationalising of the NATAS and Modular systems of competency-based assessment. The pilot study findings guided the way in which the data was to be relayed in the findings chapter. The difficult choice facing the researcher was whether to present the findings in terms of issues or to present them in terms of the groups as they 'talked about' these two assessment schemes. There was a need to let the respondents story be told, capturing the richness of the data. There was also the need that any emergent categories of meaning so produced might help comparison between the four selected groups, monitors, lecturers, employers and apprentices.

It was judged that by representing the groups as groups there would be a better chance of surfacing and comparing the different points of view that were not always easy to gain in the day to day operations of assessment programmes such as these. Notwithstanding this, the figure below was a reminder of the areas that were relevant to the various groups and brief indications of emerging issues. Overarching headings or focal points were presented as a framework for thinking about assessment, presented below in Figure 5. These would be retained as a feature to house emergent issues. The emergent issues, those the groups had in common and those more relevant to particular groups were considered to be the basis upon which the final discussion would take place.

Within the monitor group, reported on first in this chapter, there were nine emergent themes. These were: employee awareness; time allowed for assessment; TAFE; inadequate assessment; standards; over and underachievers; cross sector supervision and company versus industry and resources/funding.

A brief reminder of the two assessment systems under consideration, the state directed New Apprenticeship Training and Assessment System (NATAS) and the nationally directed Modular system which was introduced during the study thereby allowing an extra dimension of comment and responsiveness to change (referred to respectively as NATAS and Modular).

NATAS assessment was interested in individual skills assessment. It was conducted at the workplace by a skilled tradesperson who worked with the appropriate documentation (such as trade training schedule, TTS) to record performance. The assessment was done by lecturers at college according to a syllabus and items from the TTS. The Modular approach involved a grouping of modules appropriate to particular jobs. Off the job assessment would be typically conducted at a TAFE college.

Theory: (AQI) Assessment Quality Interpolation.

The theory that had developed from the respondents data could best be described as Assessment Quality Interpolation (AQI). The competency-based training and assessment quality appeared to have been distorted mainly due to diverse interpretations of the various systems by the actors involved. These inputs could vary from actions taken, decisions made, application of former methods and by interpretations of process by both individuals and organisations.

Interpolation could be defined as introduced insertions which had been made in the Assessment Quality of the competency-based assessment schemes (eg NATAS & Modular) and created unexpected changes in the process. Quality can best be described as the Industry standards required by a skilled tradesperson. Assessment refers to the NATAS and Modular schemes that operated within competency-based training and assessment.

The Assessment Quality Interpolation(AQI) was also present in the monitor data set and described by means of diagrams in the emerging themes summary section of this Chapter.

Figure 5: emerging categories and issues for key stakeholders

Group	Monitors	Lecturers	Employers	Apprentices
Category ASSESSMENT METHODS & ASSESSMENT	Not positive Issues like time resources and employer awareness			
EXTERNAL ASSESSMENT	Strongly supported Industry focus, experienced tradespersons pastoral role. Cross sector supervision			
EMPLOYERS RESPONSIBILITY	Small companies employers not all good assessors. Company v/s industry			
STANDARDS	Worrying, safety an issue, penetration and diversity makes standardisation difficult due to different interpretation			
THEORY	Off-job v On-Job Issues. Grading v/s pass or fail The % problem			
COLLEGE SYSTEM				
ADMINISTRATION	Inadequate resourcing and funding			

External assessment controls were conducted by monitors who, in the NATAS system, were key reference points. Some training consultants (who acted as monitors) were also a feature of the NATAS system and these were employed by the (then) Department of Training.

Monitors

Interviews with twenty monitors who were very experienced in the NATAS assessment system were conducted. They were selected for their ability to comment on trade, assessment and TAFE components of the NATAS, and, where possible, Modular system.

Monitors were a feature of the State-directed NATAS scheme. As such, many of their perceptions related to this scheme. In some areas monitors were involved with or exposed to the Modular system. Monitors talked quite extensively about assessment methods, standards and issues relating to the carrying out of effective assessment whilst retaining high standards. The comments below encompassed many of the trades and industries in Western Australia. Rather than compiling comments into composite ones, a representation of actual comments has been presented. This came about because monitors represented different trades (e.g., Metals and engineering (metal fabrication); cooking; hairdressing; electrical trades; automotive and plant mechanics; aerospace (aircraft mechanics); and plumbing (gas fitting). Although this meant some sense of repetition it was decided that the opportunity to have had access to different trades outweighed this effect.

Assessment Methods: monitors

The NATAS monitoring system was fully supported by monitors who were disappointed that the activity was eventually downgraded. Monitors were confident in the high selection standards resulting in a standard of monitors selected allowing valuable contributions to their respective industries. Monitors were reduced in numbers over the period of the NATAS scheme and the category of resources (mainly time) and funding were present in almost every conversation, whilst it was recognised by monitors that funding was limited. The consensus was that the assessment system needed more, not less, monitors to be more effective.

The NATAS scheme introduced the idea of in-company assessment, to be undertaken by company assessors and selected monitors. NATAS had as its primary objective in-company assessment. Roles and responsibilities were that employers received information, in the form of trade training schedules, on the scheme and were responsible for on-the-job training of apprentices. Monitors employed by the (then) Department of Training were skilled tradespersons. Their role was to monitor the in-company training, and mainly be responsible for the quality control aspects of the scheme. Apprentices received the training designed for the NATAS scheme, both in-company and at college. Subsequently some transferred to the newer Modular system depending on trade involvement in the new scheme.

An important issue for monitors was both the desired clarity of the assessment system and the problems associated with informing others perhaps not so familiar with it. Monitors such as this one, (M34) found the explanation of the scheme difficult during training even though he found the written information well organised for the task in hand. Information on the scheme was provided to employers in booklets. The intention was that progress of the apprentices would be updated. Monitors on their visits checked that the system was in place and it was up to standard. This was a major innovation on previous apprentice training systems within Western Australia. Prior to this there was no formally recorded assessment in place in the company workshop. Structurally, assessment methods were conducted using trade training schedules and within that assessment, forms were a major vehicle for collecting information and the following quotations demonstrate there were some problems in these areas.

Monitors (M32) for example often found that assessment forms had not been completed in the company by the company assessor. Where this was the case the monitor then had to work through the form with the assessor to verify what had been completed. Some company assessors were not fully aware of the implications or expectations of the apprentice training scheme and so sometimes every skill was approved up to standard. Therefore the monitors found that some apprentice skills had not been achieved yet had been approved and this had to be reported to the

training consultant. However there was little feedback to the monitors so they had to assume that remedial action was taken at a higher level.

The following quotations indicated the two roles performed by monitors, namely that of apprentice monitoring and apprentice system monitoring. (NB: // has been used to separate extracts from respondent data.)

Well there's been two ways in my early experience with it, it was a strictly apprentice examination against those standards, could the apprentice do certain tasks and you would require them to display that over a group of different tasks within the overall, not all of them were the tasks you would require to do but you would select a few. But in recent times what's happened is that the role has become that of an industry monitor (M33)//. So we don't actually go and monitor that apprentice, we go and monitor the employer. There's a big difference. A lot of people think we are monitoring the apprentice, we are not. All we are doing is validating the assessment the employers made on that apprentice. (T17)// you're really assessing the actual trainer to see that they're training properly so we sort of talk quite a bit to the trainer and find out what sort of work that they're giving the apprentice and then we've got to talk to the apprentice to make sure that they are both the same (M30)// My understanding of the validation as we know it is to validate the assessment made by the employer of the apprentice's training in the workplace situation. (M25)//

Of more importance perhaps was the apprentice monitoring with each apprentice being expected to prove competency against relevant trade standards. The second role (supervision of employers' assessment) was perhaps less effective in achieving results because many of the apprentices were not assessed externally. However these were assessed in-company. Monitor (M34) brought out the interesting point that the main aim in the NATAS example was to assess the employer's training methods rather than assessing the apprentices. The apprentice check was mainly to ensure that the employers were training correctly. This was not meant to be the case and it seemed that this pragmatic approach by the Department of Training was probably brought about because of the limited numbers of monitors and the lack of funding. Within this thinking, it would be easier to check systems than the numbers of individual apprentices. There were ambiguity and perceptions of monitors and employers also concerning the intention and methodology of the NATAS system.

Monitor (M30), indicated that the external role was useful. This person felt that an outsider could be useful in solving training problems between trainers and apprentices. Sometimes both had different perceptions of the training and assessment requirements and advanced ideas about apprenticeships. This was categorised in terms of emergent categories as 'cross-sector supervision' and it seemed to be deemed as very valuable by monitors.

Monitor (M24) in the aircraft industry suggested that even within the limited time period available he looked at the company assessor and then the apprentice and then in general terms the work the apprentice was involved in completing. This was limited by the availability of aircraft, so the apprentice work assessed would depend on a measure of luck in so far that the visit occurred when the relevant job was being conducted. It would seem that aircraft apprentices were assessed by general questioning of their knowledge of aircraft engineering rather than observation of practical skills, although this did take place on some occasions. The apprentice assessment of these aircraft tradesmen conducted by monitors was in the main general knowledge of their work, combined with the assessment procedure. of the company assessors.

Often larger concerns set the industry standards of a particular trade because they had the resources and relevant skilled manpower. However, such was not the case in the Western Australian assessment setting. Most of the apprentices in this study worked for the smaller companies, as the last major airline trained all its apprentices in the Eastern States. So the emphasis was placed on the employer, sometimes the smaller employer, to conduct continuous assessment using the forms provided to give some form of structure to the process. The difficulty here was seen as differences generated by each employer's interpretation of the assessment form. Also a perceived problem was the methodology where whilst monitors were sent to assess apprentices and trainers, training consultants associated with the NATAS system and employed by the Department of Training, concentrated on procedures. However where this took place, monitors suggested, many below standard individuals slipped through the process using this method.

Still on the topic of individual apprentices, monitors said that safeguards were in place so that when necessary the assessment system would allow for an apprentice to be validated when there was some concern about the completion of documented training. It could be seen that although the assessment system was under scrutiny, according to monitors the apprentice did appear to feature in the assessment process. A main area of concern was the time available for assessment and validation processes' to be completed effectively.

NATAS: monitors

It is important to note the legal framework surrounding the TAFE and employer responsibilities in the NATAS system.

Workplace and TAFE based training and assessment procedures have been introduced based on the skills the apprentice should acquire over the term of the apprenticeship. When the parties complete a Probationary Employment Application, seeking to establish an apprentice, and if the employer is not previously approved, a Training Consultant from the Office of Industrial Training will visit the employer with an Employer Resource Survey. The employer then completes the Employer Resource Survey to show training capacity. On approval to train:

- 1. All parties will receive a detailed Trade Training Schedule to plan the apprentice's training.**
- 2. A Workplace Assessment form will be sent to the employer to record the apprentice's skills during the duration of the apprenticeship.**
- 3. An Industry Accredited Monitor or Training Consultant will visit the employer and apprentice during the apprenticeship (usually twice) to validate the employer workplace assessment of the apprentice's skills to date.**
- 4. After successfully completing the apprenticeship the apprentice will receive a Trade Certificate. (*Apprenticeships: A Guide for Employers and Apprentices*, 1992 Office of Industrial Training, WA Department of Employment, Vocational Education and Training. p.7)**

The NATAS scheme included the trade training schedule and a monitoring system conducted by specially selected tradespersons, who were known as monitors. The trade training schedule was produced by close cooperation with industry and was in the form of a list of skills required to be completed to achieve competency. The standard to be achieved was that of a qualified person in that particular trade. The

monitors who were tradespeople conducted the assessment based on the trade training schedules within industry. The individual firms were responsible for the training of the apprentices using the trade training schedules as guidelines for the on-the-job activities. This seemed a major improvement on the previous system as long as it was operated correctly by industry.

Monitors followed the procedure as given below:

Well there is a booklet or a training schedule for the apprentices as set down by DEET stipulating the criteria that the apprentice must meet. I go through with the apprentice's trainer and also with the apprentice and discuss points about this form, discussing how they reach the assessment, to what level the apprentice has reach...(M29)// Sit down and go through the form with him, how he has assessed that apprentice, how he has reached the assessment procedures,(T17)// Well we talk to the trainer first and find out what sort of training they do and when and how often, that type of thing, then we talk to the apprentice and we question them on the whole thing that we've got in front of us and then we usually see some work (M30)// I would give him a little test or a talk first and then go out and make him do a practical test on-the-job in the workshop (M34)// I run through the assessment form as filled in by the both of them together, if it's not by the both of them together then I make sure that the apprentice agrees with everything that's being done. And then I set specific task that have been indicated as being achieved on the monitoring form and I make a judgement in conjunction with the talking to the assessor or trainer on the skill level that the apprentice is at (M31).

This gave a clear idea of the practical assessment process as carried out by monitors. The monitoring technique appeared to question the process and observation of a demonstration on some of the skills required.

The employers assessment of apprentices were considered by monitors to vary. This was because most employers were not trained in assessment. These employers would typically make up their own rules based on previous experience. Also their interpretation of the workplace assessment forms differed. Monitors reported that standards varied with the resulting impact on assessment.

Monitors felt that this would make it very difficult for them to ensure that all apprentices were up to the trade standard required by a particular industry. One

reason given was the limited time to make an individual check of every apprentice consequential on the employee validation tasks. Monitor (M25) (electrical trade) defined his job activity to be in the main, validating employers' assessment of apprentice training under the NATAS scheme. For this monitor, the employer's procedures were the first consideration followed by the apprentices activities. Whilst procedures dictating this might have been satisfactory, it was felt that some hands-on apprentice assessment of the apprentice was sacrificed.

Furthermore (M25) was in favour of NATAS and considered it was a good training system. However he felt that the trade training schedules and the workplace assessment forms needed to be reviewed, which would have been normal in any system. He was critical of the employer's involvement in the assessment scheme where paperwork was lost or not completed and it was difficult to make appointments for assessments. Some employers, monitors said, needed external assessment to keep them up to the mark so that apprentices were ensured of impartial assessment. The difficulties that the monitors experienced in doing their assessments gave strong signals that some employers were not following the formal apprentice training and assessment arrangements. Some it was felt might only have given the apprentices workshop experience which may or may not have been planned. This monitor (M25) was talking about the electrical trades where safety was a sharp focus. The example of a lost workshop assessment form at the end of apprentice training in this setting would be a matter of great concern.

The ideal monitor was described in this person's view (M25), an employed tradesperson (who was able to comment on the latest assessment developments). The danger, he said, of employing a retired person in this role (which was often done) was that they would be out of date in industrial terms relatively quickly. They also needed support from their employer for their monitoring role for obvious reasons. Monitors said that the trades needed to select monitors very carefully because they reflected and maintained the industrial standards that were the yardstick of a particular industry.

The trade training schedules (TTS) included items that were not universal for all companies. Therefore for the relevant forms to be completed some assessors were placed in a difficult position, and some forms were completed when the apprentices

had not covered the work. This tended to reduce the credibility of the forms in question and there was a need for this aspect of the system to be reviewed.

Now it's part of the schedule and in theory they have to do it to finalise their apprenticeship so someone's ticking that and saying they've done it when they haven't done it, which makes a nonsense of that point so why not make nonsense of the rest of the points (M32)// when you find out as a professional yourself and being for the first 23 years in the trade you could definitely find out there was something a bit, something was not happening there. (M26)// that the employers haven't got enough work on, some haven't got their heart in it to put the training in (M21)// I feel the employers are the ones that aren't doing the right thing, they make it real difficult for us (M25).

Monitor (M31) (plumbing and gas fitting) tended to think that the NATAS assessment system worked, because apprentice training was not an easy thing to accomplish when a considerable number of skills had to be achieved and knowledge absorbed and this in a diverse industries. It would appear that industry needed a final year competency test to improve and for that matter maintain standards, especially when uniform standards is the ideal in any trade.

Monitors seemed to think that NATAS was not basically a bad system with its criteria such as the trade training schedules and its assessment conducted by the monitoring process. An overall sense was that the replacement national Modular system improved formal assessment criteria but at the cost of dispensing with the monitoring system which appeared to be highly regarded.

Modular: monitors

The Modular system (National) was introduced in 1995. It differed from NATAS (State) in a number of different ways. Firstly it was divided into modules with an integrated assessment component. The students were assessed at the end of each module. Secondly there was no external assessment by monitors from the trade. The emphasis was placed on company assessment for on-the-job training and college assessment for the off-the-job training. Also some monitors were tradepersons, small businessmen and part time TAFE (Technical and Further Education) lecturers and as such were involved with the Modular system in their other activities. It is important to

note that not all trades changed to the Modular programme which was implemented gradually, over a period of time.

The Modular system was introduced to take the place of the NATAS scheme and generally at time of the data collection a number of trades were following the Modular scheme of apprentice training and assessment. However in the changeover period some monitors were involved with the new system and were able to comment in the following manner.

Monitor (M16) was an expert in the metal fabrication field and so his comments should be considered with this in mind. He thought that the Modular assessment programme in question was implemented rather rapidly and so put a strain on the system developers to create the programme within specified time limits. This meant that the possibility had to be considered that the modules were not up to the industry requirements. (M16) gave an example:

for instance we had under this competency-based programme, the training on and off-the-job has had to be complementary, I can appreciate that but when a course producer has cast iron welding and plastic welding all in one module, it is extremely difficult to work to the rules to deem a person competent in that module. (M16, Monitor, Interview)

The metal fabrication example was relevant because it would be extremely unlikely that any company would do both, and it would be difficult to assess this module because it would be an either or situation. This was a strong indication that the course producer developed the module on a theoretical rather than a practical grass roots basis:

I think it should be more defined to the employers of what's required. Ninety percent out there don't understand their obligations to the actual training, they think if they send their apprentices to school they're training the kids and that's it. They have problems with me coming out on to the site saying well he's not really up to the standard (M31)// So really at the end of an apprenticeship it is the amount of the assessing has revolved almost entirely around what happens at college, not what happens on-the-job (M23)// I'd go to someone who was already apprenticed for two years and they had never seen anyone, she'd never been assessed (M30)// there was no monitoring of what experience they were getting other than learning something at TAFE (M32).

Monitor (M31) (plumbing and gas fitting) had some reservations about the apprentice assessment system. Like earlier statements by monitors, it would appear that employers were not always aware of the requirements of the system. This was a major problem for monitors. Some employers were under the impression that all the training was to be completed at college. The lack of clearly defined standards of apprentice training often ended up a matter of opinion between the monitor and the employer.

Monitor (M31) implied that employers were not entirely happy with the Modular assessment system indicating that this process was imposed by an outside body. The monitor believed that the blend between time based and the competency-based assessment was at the right level, however thought that more emphasis should be placed on to on site training. The competency-based training carried out on-the-job also needed to be monitored by trained assessors to be really effective. These factors, monitors said needed to be in place, namely defined standards, competency-based training, trained assessors and end testing to produce results, as any shortfalls would result in system failure. Concerning monitoring, an increase in monitoring visits would improve the scheme:

In the apprenticeship system there is an on-the-job assessment and an off-the-job assessment and basically we check the off-the-job assessment. Unfortunately, the competency-based system, I do not think is working as well as it could. If I could add this, very often TAFE are run off their feet and I guess the off-the-job training would be also.(M16)// I think again there's so many apprentices that the staff that they've got they don't have enough to be able to spend the time to completely give them the full requirements (M24)// so what I see it kind of falling down is the actual , how do you say, integrity of the training, all right, be in a TAFE environment you'll have a group of people with different backgrounds, different companies and so on which, from the lecturer's point of view, he has a module to teach (M36).

The structure of a Modular programme at TAFE (Technical and Further Education), where similar or related modules need to be carefully planned and supervised, to produce sound training with proper competency standards. This also needed to be linked to on-the-job training where skills could be practised in a work environment, to achieve this was easier said than done. TAFE (Technical and Further Education) had a wide diverse and fragmented industry to service and any Modular programme would

not fit the needs of all the clients. Therefore the basic core modules had to be established with relevant elective modules available to cover the majority industrial base. The Modular system had increased the amount of assessment and administration required to be completed by the lecturers as was shown by apprentices who could achieve competency after many attempts under this system.

Training consultant (T18) and part-time lecturer was involved in the Modular system for the metals and engineering trades. So at this stage it was a development from the NATAS system and the training was designed and developed for this State. The Modular system broke down the apprenticeship requirements into a series of modules which could be assessed individually and also grouped together in different training profiles. It was different from NATAS in one important respect, there was no external monitor. This increased the formal assessment load for the lecturer because each module had to be verified. However it should be noted that every trade was responsible for its own training requirements and so developed its systems at its own speed. The State -trained apprentices tended to be well-rounded tradespeople which appeared to be a local requirement, rather than the criteria established as a national norm by the Eastern States:

now talking to employers, and I guess it will come out in the survey, that they are not happy with the national system, mainly because it does not cater for the types of industry that we have in this State, unfortunately. (T18)//,one of the big problems is that there has been no evaluation on any of the previous systems.(M16)// You know the system changed three times before this. You've had the old system, you've have the NATAS and you have this (Modular) (T17)// I do not agree with the changes they want to make purely and simply because they are costly, they are going to be cost effective for the government but what they are going to do is to break down the system and the system has taken five years to put together (M19).

The national system of apprentice training was basically a very sound idea to standardise all Australian apprenticeships. It was also quite difficult to introduce such a change nation wide without causing problems within individual States. However each State tended to have a different industrial base and as such a rigid system would not necessarily have catered for all adequately. It was also important to try and incorporate the skills and knowledge in existence into anything new, and allow for

considerable flexibility and have an efficient review function to sort out problem areas. Also training was inclined to develop over time to cover local needs and so it would seem sensible to listen to the advice of specialised industry. When the system was described as not adequate for local industries, this was a serious matter to be investigated rather than ignored:

The assessment criteria for our modular system, the old one, I talk about the old one, that was developed was very tough and students had to perform to a very high standard before they could actually get through.(T18)// it is what the industry is offering because they actually try and do standards, we don't, We take direction from them (T17)// I'd set up something that industry truly wants, that industry has the biggest say in it and because the only way you are going to get out of it what industry wants out of it (M31)// you've really got to see what standard they are working at, are they being trained, are they being trained properly, are they getting enough training (M30).

This highlights the importance of standards within training programmes and the fact that these cannot be reduced without some impact on general apprentice standards within industry. Industry needed to train to the skilled requirements of a particular trade and any new change had to be careful to reflect this within training programmes. There appeared to be some evidence that the national training programme did not fully serve the requirements of Western Australia.

Conclusion

The Modular system was only recently introduced and the intention was to replace the existing NATAS. This had taken place in some trades but change was often a slow and difficult process and needed industrial cooperation. Apprentices were usually at TAFE (Technical and Further Education) for a period of three years of a four year apprenticeship and so at this stage the first group had not reached the end of their training period.

Monitor (T18) discussed the situation in metal fabrication. One of the difficulties of Modular training when skills and knowledge were broken down into modules and achieved in relative isolation to other skills, was that, sometimes standards achieved fell below par due to lack of use or reinforcement over a longer time span.

Therefore there was a need for some form of final competency-based test that ensured that all the skills achieved in the previous modules came together in a relevant manner for the industry. This was an important point, otherwise the credibility of the apprentice scheme would be destroyed in the minds of industry.

Also a completed module gave the trade the impression that the apprentice was up to standard at that time which may not have been the case. There was a need for continuous experience in using the relevant skills to build up accumulated job knowledge required. This had to be monitored to ensure that the skills learnt in modules were not learnt in isolation but incorporated, and so achieved the main aim of training the complete tradesman working to trade standards.

Changes to any training system had to be handled very carefully as most systems had their good and bad aspects. Some had not been developed to their full potential, often due to reasons unrelated to delivery such as lack of funds, political will or even lack of industrial or union cooperation. These factors in the real world could distort or retard any potential first rate programme. Therefore any 'quick fix' attempt that looked good on paper could end up as a failure on the shop floor. This was not to say that the apprenticeship schemes had no value, rather the problems existed in the implementation of programmes. Sometimes it may have been better to develop existing courses over a longer period than completely replace these schemes. It should be said that most people involved in apprenticeships were trying to establish a first rate training and assessment procedure that would enhance Australia's skill base. However there appeared to be a gap in understanding between the system designers and the people who administered and implemented the various schemes.

Changes in the NATAS system due to financial restrictions resulted in monitors placing the emphasis more on the system rather than the assessment of individual apprentices. So apprentices were only checked using a random method of selection to ensure the company was operating correctly. This was not a satisfactory method of apprentice assessment because it allowed people to slip through with full qualifications that were not deserved. The completion of the apprentice paperwork did not necessarily mean in all cases that the apprentices were competent according to

the experience of monitor (M29). The emphasis should be placed on the competence of each individual apprentice, rather than completion of paperwork or financial considerations.

The best method of practical assessment was to see a task performed by the apprentice, as each process could be subjected to questions which would have indicated the level of competency. A skilled craftsman was in an ideal position to identify any shortfalls in task completion. The problem was not the tasks that were checked but in the many other tasks that went unchecked due to lack of time, for example jobs that lasted over several days. It should be noted that however well the assessment was completed that it was only in the nature of a spot check of selected tasks.

The following examples were the general consensus of opinion among monitors:

I think there are some holes in the assessment system because you don't really have the time to properly test an apprentice and you quite often find that you don't have the facilities to properly assess them in the workplace because you've got to basically go on what's available in the workshop (M29)// so you know it was very hard in a very short time to really get an accurate assessment of where an apprentice was at (E27)// so I like to get about half an hour to three quarter of an hour with the apprentice (M25)// Well to a maximum, I think we were allowed, I emphasise that, we were allowed, which to me wasn't sufficient (M26)// It would be dependent on a particular training and the competencies expected by industry. I would say anything from four to six hours (M16).

Monitors had reservations about this assessment system because of time restrictions and the lack of facilities within workshops for apprentices to be tested. They often had to use theoretical questions so that the assessments were more subjective than should have been the case. However experience and local knowledge gave an indication of the standards set by a particular company but the situation was far from ideal. The bottom line appeared to be that the monitors ensured that standards were maintained. Although these were the real problems that a monitor had to face in assessment visits, there was considerable room for improvement within the system to ensure that they had the resources to do the job properly.

It is important to remember that the monitors in the NATAS scheme were a very high standard of tradespeople selected by the Department of Training and approved by the relevant industry. This meant that it was very difficult for the apprentice to cover up any lack of ability. This was perceived by monitors to be a major reason for their success at maintaining trade standards.

This former monitor (E27) (motor mechanic) described his method of assessment which included the company method of assessment as well as individual apprentices interviewed. The apprentices were questioned and demonstrated their skill and their performances were evaluated. The companies assessment form information was then recorded and sent in to Western Australian Department of Training. The employers were mainly responsible for assessment and so it was very difficult for the monitors to do a thorough job within a limited time period. He found the process did not allow him to get an accurate assessment of the apprentices ability in all cases.

Monitor (M28) (metal fabrication and welding) tried to look for the problem areas in a workshop prior to assessment. This was a very intelligent method because of the limited time allocation to the assessment process. He tended to question and gave practical tests to assess ability according to his own standard. This was a good method and the only drawback was that it was limited in scope because it did not even attempt to cover all the knowledge and skills required by the future tradesman. He also found the variations of standards that he was presented with a major problem, because without a set guideline where was the line on competency to be drawn. This monitor was placed in a difficult position with some apprentices who were competent in some modules but not in others but who might in time have achieved a satisfactory performance. His assessment was more of a spot check but it could have resulted in failure for a potential tradesperson, which placed a major responsibility on the monitor rather than the system.

Assessment: monitors

Assessment is the process of collecting evidence and making judgements on the nature and extent of progress towards the performance requirements set out in a standard, or a learning outcome, and, at the appropriate point, making the judgement as to whether competency has been achieved.

Another way of describing assessment within competency-based approaches to learning is to say it is criterion referenced. This means that it measures a person's performance or identifies their achievement in relation to criteria and not in relation to the performance of other learners or trainees. (*Framework for the implementation of a competency-based vocational education and training system*, Vocational Education, Employment and Training Advisory Committee (VEETAC), February, (1993).

It is important to remember that present day tradespersons were trained differently. In the past some just served their time before being regarded as a tradesperson. Obviously their experiences would have differed between trades and many would have been trained abroad or in the services. The main purpose of assessment according to this monitor (M28) was to measure competence of the individual against some form of guidelines. This in other words means assessment was the measurement of competence against trade standards. This assessment if carried out correctly produced the end result of a properly trained tradesmen up to the required trade standard.

That the new assessment and indeed apprentice training scheme was better was not always the universal view, as the following monitor shows. Monitor (M28) seemed to favour the traditional method of apprentice training, namely serving a period of time to achieve competence in the particular company. He was happy with the assumption that after a reasonable period most people would learn the skills required for the trade. He did not mention that this might not be an efficient method of training because of the time involved.

One employer (E27) suggested that all the skills and knowledge that a potential tradesperson required to work to the industrial standards of a particular trade needed to be accessed. The problem was how to achieve this full assessment of the individual apprentice. The solution required some form of practical demonstration of the relevant skills of the apprentice. This could best be achieved by an approved

tradesperson spending time with the individual who completed normal tasks either in the workplace or at an approved centre. This ensured that the apprentice training was at the required standard for that particular trade irrespective of method or time involved in training.

Whether what we are doing now is the right way to go about it, I'm not, I don't really think it is, but to keep the standard of tradesmen at an acceptable level or improve the level that we produce tradesmen, without an assessment we have no real guide of knowing which way you are going and no control over the final product (E27)// the cost of motor vehicles and the cost of repairs and maintenance of them, that if the customer themselves is not getting what is considered to be the standard. I feel that the trade itself is letting itself down and the customer is being hoodwinked. (M22)// because everyone probably has a different perception of what an apprentice should be at the end of his apprenticeship (M25)// obviously the main purpose is to make sure the apprentices after four years are qualified to tradesperson standard (T17)//.

Employer (E27) made a cogent point by saying that without assessment there was no control over the final product. This former tradesman did not think the standard of apprentice was up to the mark, but was very concerned that the apprentice system should produce better tradesmen. He was also not sure that the system was adequate for the task, because this problem was only apparent at the end of the process. Therefore one needed some method of quality control to see if this four year process produced results. The above indicated the relationship of assessment to the standards of tradespeople and how possibly it impacted on the industry and community.

Assessment Reliability: monitors

Reliable assessment uses methods and procedures which engender confidence that competency standards and their levels are interpreted and applied consistently from learner to learner and context to context. Without reliable assessments there can be no comparability of credentials. High quality competency standards are fundamental to reliability. (*Framework for the implementation of a competency-based Vocational Education and Training System*, 1993, Vocational Education, Employment and Training advisory Committee (VEETEC), February).

One of the more important aspects of NATAS was the introduction of the monitoring of apprentices by skilled tradespersons, and monitors in many cases in spite of the

schemes limitations were perceived to have done an excellent job. The standards that they introduced based on their own skills generally improved the standards in the various trades. Monitors recounted that many of them made very serious attempts, often in their own time, to ensure standards had been maintained.

Over and over, the theme of lack of time to have done assessments emerged from monitors' responses. Monitor (M22) within the operational time limit was only able to look at about six tasks in his assessment visit. He said this was a very small proportion of the available tasks to be assessed and as such was a snapshot of the apprentices ability at that time and place. He implied that this might seem adequate to some because it would give an indication of ability of the apprentice but one could not be sure that by using this method there would not be skills and knowledge gaps at the end of training. In some cases apprentices not up to standard got through the assessment system. To monitors this meant that the reliability of the system to produce the expected results was in some doubt.

Monitor (M30) was concerned about the control of the apprentice assessment system. It appeared at her level that the system was inconsistent, with some apprentices not been visited during the early stages of their apprenticeships. She considered the system was reliable if done properly but felt it did not come up to the mark on all occasions. For her, the system obviously had gaps if apprentices had not been visited. This was because the major part of the assessment should have been completed on-the-job, and both apprentices and employers needed to be fully aware of the assessment criteria and relevant standard:

Is it good enough... I am afraid it is not... The biggest problem is reliability. I do not necessarily blame the module entirely for that...I feel that the monitors that are validating and assessing have not had enough training to provide reliability. (M16)// but not very reliable for the types of industries that we have in this State, because more and more I am getting comments from industry that they now have to train the people for their needs because TAFE cannot provide that under this new system, so for that reason it is not very reliable for our industry. (T18)// I think it is a reasonably reliable indicator because of the fact that people are aware that assessments are being done (M21)//Yeah it was reliable if it was done properly (M30)//.

The monitors described above were company monitors or assessors who had completed a two day training course under the previous NATAS programme. This was very basic training even for tradespersons who were expected to deal with the problems and difficulties of on-the-job assessment of apprentices. The module had to be interpreted correctly in relation to standards required by industry. The fact that the training department monitor had reservations about the module and the workplace assessment was taken very seriously because they were in a position to know the overall situation at grass roots level within their particular trade. It was obvious that it was very difficult to get a general industry standard if the company assessments from company assessors were not reliable.

Consequently it was seen that monitoring alone was not sufficient to establish standards but it was also necessary that training in the interpretation of standards to establish any form of reliability of assessments had to be given. Comparatively speaking, the NATAS programme was perceived by monitors as not perfect in regard to established standards. However it was seen by respondents to be a major improvement on the previous scheme (time served). This was because of the documentation of skills and knowledge within the trade training schedules (TTS) and the establishing of a monitoring programme within the trade. The Modular system that succeeded NATAS was also recognised for including standards. However, the responses indicated that not everyone was convinced that they were the right standards required by the respective trades.

Assessment Validity: monitors

Competency standards assessments are valid when they assess what they claim to assess. Validity of assessment is achieved when:

- * assessors are fully aware of what is to be assessed, as indicated by the units of competency, learning outcomes and clearly defined performance criteria.
- * evidence is collected from activities and tasks that can be clearly related to the unit of competency or learning outcomes specified for the course or training program
- * evidence demonstrates that performance criteria have been met
- * evidence is sufficient. (*Framework for the implementation of a competency-based Vocational Education and Training System, 1993, Vocational Education, Employment and Training advisory Committee (VEETEC), February, p.15).*

According to monitors, the assessment system was doing an adequate job. The problem was that it was not a full assessment of apprenticeship activities within the apprentice system. Therefore because there was no comprehensive assessment of all apprentices, some would pass when they were, in fact below standard. Monitor (M29) considered that a full days testing in a controlled environment was the minimum length of time required to be valid. This sounded reasonable when one considered the amount of skills and knowledge that the average apprentice had to acquire during a four-year apprenticeship. A contrasting argument was that as the companies completed most of the assessment this was not necessary:

The validity for instance, I think, the national system is in fact several years behind what we had before. It is oral information and developed by people that have no idea of industries within this particular State. (T18)// System is valid providing like I said that there is some standard that it is being assessed... against and that is one of the problems that you have is that there are different standards...like there is a different standard and there is a different interpretation. So this is where the validity tends to vary a little bit and that's what I'm saying, that's why I think there should be an independent body. (M24)// The assessment process, is it valid? It's only valid, it would only be valid if it were left up to some uninfluenced or a third party that's not at all influenced by the company's operations. That is the only way it can be valid. (M28)//.

It was difficult for people who had hands on experience of training assessment programmes to contemplate a perceived reduction of standards within new programmes.

Monitor (M22) discussed the validity of the system. He gave the impression that there were loopholes within the system. This made it very difficult to be assessed properly. The apprentice training system should have had a comprehensive range of what had to be assessed which would have included skills, knowledge and standards. These needed to be organised and described in clear terms, so that all levels of industry would be able to understand and action in the workplace.

The monitor (M22) referred to a serious problem with this system and supported the views held by others that there were different standards and different interpretation of

these standards which made any form of assessment extremely difficult bringing into question the validity of the system as a whole.

Assessment Fairness: monitors

Assessment is fair if it does not disadvantage particular learners. If learners understand clearly what is expected of them and what form assessment will take, and if the assessment places all learners on equal terms, and the assessment procedure supports their learning, then the assessment should be fair. (*Framework for the implementation of a competency-based Vocational Education and Training System*; 1993, Vocational Education, Employment and Training advisory Committee(VEETEC), February p.19).

NATAS appeared fair according to the monitor (M22) because both the apprentice and employer had a copy of the trade training schedule and they should have been aware of the requirements. So the system appeared to be fair but how it was carried out in practice was another matter. If either the apprentice or employer had not taken an interest or maintained the paperwork required the procedure could have easily broken down. Monitors because of the limited visits allowed, were unable to be certain that the system was being maintained properly in all cases.

The main advantage of external assessment was that it was fair and could be seen to be fair. Employers and apprentices could if necessary have problems resolved by an impartial outsider, and monitors often found themselves in this unpaid role of mediator.

Monitor (M29) explained the system to young apprentices, which included everyone's rights and responsibilities, this was a major improvement on previous systems in terms of fairness. This at least allowed for early remedial action to be taken if any problems developed. As all parties were made aware of the training requirements the system had the potential of achieving its training objectives.

Difficulties in terms of fairness occurred with some relationships at work and it was possible that this effected the assessment process and perceived fairness. The

advantage of independent assessment was that these real or imagined personality problems were arbitrated by another person, increasing the chances of objectivity and fairness.

Monitor (M35) did not think the system was adequate and questioned the fairness of the procedure. It was difficult in his view to assess apprentices who had never received the relevant training, also it was difficult for small employers to complete the requirements of the trade training schedules (TTS) (NATAS). He was expected to assess, in some cases, apprentices who had no chance of being trained to the relevant skills required by the industry, because of lack of facilities. The only solution to this unfair situation was to attach apprentices to other organisations to fill in the training gaps, but this required organisation usually by an outside agency and so was expensive in both time and money.

The introduction of Modular had not convinced training consultant (T18) that it was better or of more use than the system it replaced. Opinions expressed appeared to have been suppressed in a heavy handed manner, which was not an intelligent way to treat a professional who may have been in a better position to know the needs of local industry. If the above comment was accurate the administrators of the national system risked losing credibility with industry.

Grading

A major concern of industry involved in competency-based training was that the system did not identify merit in apprentices. The assessment was based on competence at a set standard and the apprentice did or did not achieve it. There was no grading structure as a general rule. Therefore the really excellent apprentice and the poor apprentice were regarded as competent if they reached the skill standard which was possibly the minimum standard approved by their trade or industry. Monitors reported that industry had been used to a traditional grading of students from the colleges and tended to resent the new pass or fail system introduced by the Modular scheme.

On the grading issue a training consultant (T17) was discussing the relative merits of the previous final exam as opposed to the firm's final assessment. The competency-based assessment system meant apprentices were either competent at the set standards or not. Apprentices were allowed as many attempts as necessary for this standard to be achieved. The examination based on a syllabus was usually graded to show the amount of information produced on a sliding scale of marks or percentages. This assessment only partially covered the necessary knowledge as the pass mark was usually only 50%, and suffered time limitations which had an impact on its effectiveness as an assessment tool:

The assessment criteria for the national system is based on...it first of all came out as 100% competency on various subject areas. It was proved to be very tough to get 100% competency. Hence the competency level of the modules has now been dropped to such an extent that it is now a joke in the Engineering industry. It dropped to 75% competency and now it is down to 65% competency. (T18)//, he's passed the modules or he's enrolled in these modules. Well did he get 84% or 94%? There's no percentage marks on that, that's no good to me. (T17)// Not a true one, I don't believe. Competence-based training to me means that a person can demonstrate, after training they can demonstrate a new skill or different knowledge that they did not have before the training (M23)//.

The above would only be rationalised if the questions were divided into essential and desirable categories, but all the essential questions would have had to be completed at 100% performance. However under the competency-based scheme all questions were considered essential and one cannot water down the scheme in this manner without reducing standards. This training consultant being aware of this, had on his own initiative retained the standards especially in the area of safety and machine operation. However if others followed instructions to the letter and operated at the 65% competency rate this eventually would have had an impact on standards in industry. Given the importance placed on individual safety by industry this will be discussed later as one factor that may be latent within the competency system:

You cannot have 65% competency on safety, you cannot have a 65% competency on a machine, that is potentially dangerous. So I have in fact

changed my teaching methods to adopt what I feel is the competency required for industry, not what the government or the national system has come up with much to the disappointment of.. the hierarchy want to see as many apprentices pass as possible. (T18)// in the Aviation industry, we don't get chances, not very often do we get chances or second chances so we like to know that the standards are being put out , you know, people are reaching the standards that's required. Safety is about the most important (M24)//.

Standards were the issue here, and, more to the point the standards required by industry. This was an important matter, one that was causing great concern among the people involved in assessment, and who had to make decisions on the relative skill levels of apprentices. Obviously every organisation wanted to produce as many skilled apprentices as possible, but if there was any doubt about quality this would in time defeat the objective of a pool of skilled tradesmen within the State.

External Assessment: monitors

NATAS (ASSESSMENT).

(i) Work Place

NATAS is based upon the apprentice being trained to perform skills to a recognised industry standard; that of a newly qualified tradesperson. The assessment by the on and off-the-job trainer is criterion referenced and the apprentice is assessed as having achieved the skills or needing further training /remediation. The Trade Training Schedules list all the tasks and skills that the apprentice is required to have achieved in order to qualify for their trade certificate.

(ii) College.

During the college training program, the apprentice is instructed and assessed in the college listed skills (essential and additional) of the Trade Training Schedule." *Australian New Apprenticeship Training and Assessment System (NATAS)*. Commonwealth / State Joint Project Final Report. WA Department of Employment and Training, APRIL (1991, p.24)

The standard and background of the NATAS monitors who completed the assessment was very high. Some as above had extensive experience in both the trade and TAFE and therefore really were in a position to comment on this issue. The training at TAFE was mainly theoretical with a little practical experience depending on the skill involved and machinery available. However the main point here was that the employer was responsible for the major amount of practical work because of the limited time

spent at college. So the main emphasis of the assessment process had to be focused at the training being conducted within companies. The monitor played a vital role in ensuring that the standard of apprentice training was maintained often in many diverse organisations. Company practical training was the key to the eventual standard of the apprentice although theoretical training was seen by all key stakeholding groups as being necessary:

When you come to a situation where there is a problem with the apprenticeship, be it from the apprenticeship side or from the employers side you do not have anyone going on the ground floor and actually doing an outside monitoring of the system. So these are the questions which have to be raised under the new system, who is going to look after for want of a better word a disadvantaged apprentice. An apprentice who ends up on a suspended apprenticeship or even a cancelled apprenticeship,(M20)// We have had a few apprentices who obviously did not like the system in the sense of because they did not put in the effort in the first four years. They ended up in the situation where they were put back for further training, because they did not achieve the standards required.(M19)// problems arising between conflicts which I was not supposed to enter in but you could see was affecting the work or the training of the apprentice....conflict between employer and apprentice (M26)//.

This was quite an important matter because the Modular scheme which at this stage was replacing NATAS, did not have a monitoring function. Employers were made responsible in the main for the assessment of apprentices and monitors were being disbanded. So monitor (M20) made a valid point about the external supervision of apprentices. There were problems with apprenticeships and the monitors played a major role in reducing these by finding impartial solutions.

An interesting and unexpected internal change in the monitor role, one well reported and supported was pastoral care of the apprentices. Monitors reported that the role that was forced upon them out of circumstances caused by the treatment of some apprentices. Some key difficulties were expressed. Sometimes expectations of apprentices and employers differed, also cultures and previous experiences came into play, as many small businesses were run by people whose backgrounds were from outside Australia. The school system with graduate teaching staff were producing students with high expectations and also very developed ideas of self worth. However

sometimes problems developed when such students started work in traditional organisations. Here, some of the workers were not educated to the same levels as modern apprentices. The workers were part of a workplace culture that had different expectations of junior workers. These tradespersons when they were apprentices, were treated in a certain manner. They in turn treated the new apprentices in the same way.

Monitor (M26) also supported the pastoral care idea by saying that there were problems between employers and apprentices, especially conflicts which were not strictly his responsibility, but if not solved would seriously disrupt any apprentice training. This was commonly expected by monitors who said that this was often the first work experience of young apprentices and the workplace was a culture shock. Employers expectation of young workers with long hours and low pay did not coincide with the expectations of modern youth. Sometimes the treatment of apprentices fell below accepted levels in the modern workplace and some apprentices both male and female had reasons for complaint. The monitor was the only outside person of some authority to whom the apprentices were able to turn with their complaints which placed the external assessor in a difficult position. However many such problems were solved to everyone's satisfaction but this did take up considerable time, leading to the perceived problem of time limitations.

Time Limitations: monitors

The visit time allowed for an assessment completed by monitors (NATAS) was an important point because it limited (or extended) the possible effectiveness of the evaluation of the apprentice. Two visits in a four year period could be adequate for a good apprentice but it was suggested that this should be regarded as a very bare minimum in assessment terms. The amount of company assessment as well as apprentice assessment within a two hour time frame, left very little actual contact with the apprentices, said monitors. Employer (E27) mentioned that only a few items were checked from a comprehensive list within the time, and so this must only be regarded as a superficial check at best. This person was not confident that the apprentice was given a true assessment on his job skills which he saw as a concern in the motor

industry, especially in the heavy motor vehicle mechanics and light vehicle mechanics trades.

Employer (E27) made the point that monitors needed to be flexible and not work under rigid time constraints. He gave the example of a nervous apprentice who might not show up well on a quick monitoring visit, especially when he was being assessed to the trade standard. Monitors needed to be qualified and well selected and then trusted to use their time wisely in the evaluation process. The main issue here was the result of the process, namely apprentices qualified to the recognised trade standards:

On the one individual, two, like second year and the end of third to fourth (M30)// A good hour, sometimes longer, some of them are fairly incompetent and they don't read the forms and we have to spend longer to actually fill the form out again or else I fill another one out, that takes me longer and by the time I travel there and back it's a good two hours without a worry, possibly longer sometimes. (M31)// Now in some cases two hours was quite adequate but in other cases two hours wasn't enough... it meant you ran overtime. (M22)// One was in the second year of the apprenticeship and the other one was usually in the final year (E27)// Well the big thing is that you've got to spend more time watching people that are doing it (M24)//.

Monitors were required to visit each apprentice twice during their apprenticeship. This was the minimum requirement but some apprentices were missed by the system. These visits were only about two hours in duration and in that time monitors were expected to check the company assessment system which was mainly paperwork, as well as the individual apprentice, or in large firms a sample of the apprentices.

Furthermore, (M22) stated, 'we couldn't go through all of them because we might have thirty to do'. So it could be seen that some limitations were placed on the assessment which were only carried out about twice in a four year period. Selection of areas to be assessed were left to the monitor because it was impossible to complete the full assessment within the time limitations placed on the visit. So it was only a partial look at the standards of apprentice training and as such it was reasonable to assume that some below standard apprentices had slipped through the system and entered the trade.

Monitors were on average expected to visit twice in a four year apprenticeship and the normal visit was of two hours duration. However the assessment of the apprentice was usually conducted in under an hour, this seemed to the monitors to be a very short time in which skills, knowledge and general ability was assessed.

Standards: monitors

Monitor (M28) found the problems associated with the general industry standard because of the diversity of industrial workplaces. Companies often specialised in different areas and worked to different standards. They often trained staff to minimum requirements needed by their respective workshops which also increased the problems associated with apprentice training and assessment. Also the skill requirements differed between organisations, and companies concentrated on these rather than others listed in apprentice schedules, unless they were supervised. The standard used for the assessment by this monitor was his own, derived from his work experience. This might not have been a bad standard in itself but the problem was that many monitors appeared to work to their own standards due to lack of direction.

Monitor (M28) referred to the trade training schedule (TTS) which was a feature of NATAS. He made the point that it had an open structure and mainly outlined the intended training rather than defined the criteria in detail, especially the standards requirement. The lack of defined standards created major problems for assessors because it was perceived to be very difficult to measure competence in this situation. Although the trade training schedules were a major innovation in the apprentice training field they were found by monitors to be open to very wide interpretation. This monitor found it difficult to assess competence without standards and made the point that everyone was open to some form of bias in decision making. There was, he said, supposed to be a general industry standard but the interpretation allowed for variation in assessment of apprentices which made it difficult for uniform results to be achieved.

Monitor (M33) used the trade training schedules (TTS) which were an integral part of NATAS as his guide to assessment. However the assessment standards used were subject to variation depending on the particular workshop. He tended to use what he described as the basic standards which were apparently open to some interpretation depending on the particular organisation being assessed:

if you asked me if everyone who completed their apprenticeship had got to a certain level, I would have to say no to be honest because the people training these people might not have received the correct training as far as training people, if you know what I mean. They might just pass on what they think is right which might not be right, so consequently that apprentice, until he goes to another part of the trade, or finishes his time, will not pick up bits and pieces. (M34)// I mean the problem really is that you've got tradesmen who aren't up to standard training or setting the standards for the next generation and I think really to break the cycle, we need to do something more (M32)// I guess in view of my own background I wasn't assessed as having achieved a competence I did a certain amount of time and thereafter I became a tradeperson (M28)//.

This was an important point in regard to final standards at the end of apprentice training. Monitor (M34) suggested that not all apprentices that complete their apprenticeships were up to standard. The reason was the variation of training given to apprentices within their companies. The companies themselves were not necessarily qualified in apprentices training, although the training was given in good faith, the standards were too low. So some apprentices who passed their training had gaps within their required skills and knowledge. This, made an established trade standard very difficult to achieve without having some form of external monitoring.

Monitor (M34) had difficulty in assessment, because of variations of work within industries. Some apprentices specialised in certain areas and did not cover others irrespective of what was contained in the trade training schedules (TTS) (NATAS). The electrical industry, for example was divided between the outside construction and internal maintenance, and the apprentices trained with these options were different although they had the same qualifications. So the monitor had to use different guidelines to assess the different type of apprentice. There was a serious need to define jobs more closely in the electrical industry or to ensure that qualifications really

not produced it could be concluded that the fault lay with the standards, training or assessment processes.

Shortfalls in standards were the most common and important themes across all of the key stakeholding groups but especially in the case of monitors who considered themselves (or at least their role) to be an integral part of standards acquisition. They suggested that industry itself was aware of shortfalls in apprentice training within Western Australia. Some colleges and lecturers were receiving negative feedback from business and this, monitors said an indication that something was not right:

Yes there has been stated competency statements put within each competency. They have been eroded. I must state, they have been changed over the years to an extent, once again I must say, a bit of a joke as far as my fellow lecturers are concerned because the amounts of leeway we get with the marking criteria are quite horrific and do not fall within industry standards anyway, and there is no way industry would tolerate the sort of criteria in the marking standard. (T18)// if we are producing a tradesman of a sub-standard, you know the downside of this is that lives are at stake. (E27)// They set the standards....sometimes non-existent, sometimes unclear and I would question the reliability of the standards in quite a few instances (M16)//.

Tradesman (M23) also had reservations about the standard of apprentice training. He observed that the training he had received was wider based and more developed than what was in place now. Obviously over time industries changed and there was a move towards more specialisation, but as a general rule basic skills did not change much in traditional industry. This showed the importance of the industry defining in clear terms what basic standards they required their tradesmen to achieve during training:

In the past, an Electrical Fitter did a much wider range of work and when I did my apprenticeship we didn't have instrument fitters, auto electricians so an electrician seemed to cover a much wider field. Now you cover a narrower field so I guess that if you're looking at the breadth of training that they get now it is not as wide as it was in the past. (M23)// the standards are a broad base over all trades and nobody has kind of broke them down and said ok this is the standard for the cookery trade (M19)// The employer might have said straight out that's the standard we are at but it wasn't my standard (M22)// one of the problems with today is the training is too narrow (M25)//.

This example showed that specialisation often occurred over time and training needed to be adapted to changing circumstances. However training could be too narrow or too wide, it was the responsibility of the particular trade to establish the trade standards and requirements. Otherwise employers would train their staff to their own particular needs rather than to the interests of the trade.

Monitor (M26) appeared to think that the system was producing both skilled and non skilled people which was not satisfactory when you considered that these apprentices had been in the training situation for up to four years. It seemed that industry was accepting in the worst case scenario, a variation of apprentice standards, which were being recognised at skilled industrial level.

Assessors Competency: monitors

Monitors under NATAS were selected from skilled tradespersons. There was little formal training given and so most had an independent approach to the assessment process. However as a group these monitors were experienced and worked hard to achieve acceptable standards for the trade. They worked closely with the training consultants and they proved to be one of the success stories of NATAS They were a yardstick within the system and as such generally appeared to have improved the trade standards.

It must be remembered that these monitors were selected because they were skilled tradesmen and as such would be able to evaluate competence. Their experience within the trade helped them identify training needs of apprentices. Sometimes for example it seemed that assessment forms were fully completed when it was obvious that the training could not have been given by the company in question, which created ethical problems for the assessor. Nevertheless the practical assessment was limited by the facilities available which restricted the amount of skills that could be evaluated. These sorts of issues limited the effectiveness of any assessment process and as a result caused doubts about the product of such a system:

The monitors need to be brought together so that they themselves can say well how do you go about assessing a particular skill. How do you conduct your workplace assessment if you need to do one? Because I mean that as much as anything is going to set the standards. The skills that you assess are on the trade training schedule but there is no real standard associated with them. It is left largely to the monitor themselves. (M23)// when I come out with a guideline for myself as a monitor (M19)// I would go out and I would have my level , what I considered that boy, apprentice or person should be trained at (M22)// I have to drop my standard in order to meet the requirement of not the TTS because the TTS doesn't provide any requirement it is just to provide the requirement of that particular place (M26)//.

Monitors were allowed to interpret their own standards and there did not appear to be any attempt to coordinate a general view on this issue. This was probably a weakness of NATAS or maybe a lost opportunity to make the process more effective. Another view indicated that the monitors were of a sufficiently high standard with the ability to assess apprentices up to a basic industry standard so coordination was not necessary. However the impression given by monitor (M23) was that he would have preferred to discuss standards with his colleagues.

There was a major difficulty with setting basic standards within a trade which most apprentices could have achieved. The higher achieving apprentices were not easily identified so did not motivate others to achieve excellence. Most people worked the system, and if there was no obvious advantage to be gained most apprentices would only do what was necessary to pass the training. This was a limiting factor and needed to be well understood by the course designers, the most important point was that the standards required to be set at the right level for the particular trade.

It could be seen that there was more to the difficult question of standards. These were achieved easily at college without time limitations and in a controlled situation, but not so easily in a business environment with normal work pressures. The emphasis was on the work standard and students needed to build up speed over time and finally be assessed at trade standards. The defined standards did not appear to be up to trade requirements and so more work was required in this area. This was shown by the monitor using his experience to define his own standards. It was very difficult to carry out assessments on standards which were open to different interpretations or not

precise enough for a particular industry. This was not an easy thing to achieve but it only had to be done properly once to establish a uniform standard.

NATAS monitors operated without guidelines as to the acceptable standards and had to interpret the trade training schedule using their own trade experience. So even among the monitors the standards varied because there was no form of coordinated policy in this regard. However to be fair, all these monitors were tradesmen and so it was reasonable to assume that most would be able to interpret the necessary skill levels required by apprentices. The only problem was that these standards were not uniform for the industry. The question asked should be; Was this situation acceptable to the trade or for that matter the general public?

Monitor (M26) gave his opinion on the trade training schedule (TTS) (NATAS) which he considered to be a good basic standard but needed to be reviewed to a higher standard. Some changes and additions were necessary so that a higher professional standard was insured. However, he felt it was an excellent focus on an assessment visit where all concerned could discuss the training requirements. Some employers did not get involved with the system either due to lack of training or lack of interest. This tended to show the value of the NATAS monitoring visits where all concerned were confronted with the training issues.

Furthermore, (M26) suggested that standards varied from monitor to monitor but they all followed the trade training schedule (TTS). These standards also varied between the different organisations that made up industry. He felt that set standards would be difficult to apply over the whole industry. However, he suggested that there were some organisations that had very high standards but this was not always the case. This variation of standards within this particular trade made his apprentice assessment very difficult to accomplish in a uniform manner. This created quite a problem for an industry which was attempting to train all apprentices to some recognised standard and a suggested solution would be some form of external assessment.

Monitor (M26) found that standards and expectations of the general public tended to be rising. Some apprentices were disappointed with their training when they discovered differences between the standards operating in companies. This aspect of the NATAS trade training schedule (TTS) needed reviewing prior to its replacement.

Monitor (M32) confirmed that he used his own standard for assessment of apprentices. However he had reservations about tradesmen who were responsible for training apprentices and implied that some were not up to standard. This was an important issue because tradesmen could produce carbon copies of themselves if they were not monitored. Therefore the selection of the tradesmen responsible for apprentices was an important consideration for employers. The reason why NATAS monitors improved standards as a general rule, was they were specially selected by industry because they were of a high standard of tradespeople, a theme that was strongly developed in the monitors category. This meant, though, that they used a trade standard because no standard was formally defined. So it seemed that the training of apprentices depended on a certain amount of luck as to the type of company and standard of tradesmen assigned to train apprentices.

When reviewing the present period of apprentice training, consideration had to be taken into account that the previous training of tradesmen varied, because standards in the past were lower in some cases, and a few were qualified abroad. For standards to be improved it was necessary that clear definition of requirements were devised, then carried out by apprentice trainers capable of imparting this information.

Testing: monitors

Some students achieved competency faster than others depending on external factors such as ability, good training and type of organisation. Monitor (M28) stated that in the past he experienced annual trade tests which excluded the very bad from progression to the next stage of training. So previously there was some form of evaluation of training, and of course the very bad eventually dropped out of the system. The important area to be considered was the final standard of those who passed, and the relationship they had with the trade standards. The standards that the

trade required were the yardstick of the whole process and the assessment system needed to be capable of achieving this objective and also eliminating the sub standards.

Monitor (M29) believed in giving apprentices practical tests in a controlled environment. This provided standard tests for a whole trade and industry and as such was more effective than the present system. The country areas were serviced by a mobile van which would take the assessment facilities to the apprentice in question. The only drawback to this scenario was that monitors found it an expensive operation.

Monitor (M33) used both practical and theoretical tests with apprentices. However he was more inclined to use practical tests because the TAFE (Technical and Further Education) assessments on theory were reliable. TAFE lecturers also had received some training in assessment techniques and it was an integral part of the TAFE training package.

Monitors were in favour of practical testing as an integral part of competency-based training. Recording was also embraced, hence the requirement for paperwork.

To be really sure in the plumbing industry, probably a day, minimum a day. I mean I could take, I've taken apprentices for a week and put them out with different tradesmen and contractors and that is perfect but I don't think that would be required,(M31)// Well I think practical tests are very good. Only the biggest problem with practical tests is the time involved it takes to run a test. Different trades it works out different ways but my trade, there is so much involved and it can take so long to do a complete practical test... like to do an engine overhaul (E27)// I think more practical because you can rely pretty well on the results of the TAFE theory component (M33)// you need some sort of controlled environment where you've got ready access to sufficient equipment to test the apprentice in various areas be it in a workshop or a mobile van (M29)//But if I was to provide an overall test after four years of various components of his modules, throughout the three years or four years, whatever it might be, then I can ensure the employer that that particular person would be a first or second-class tradesman or he is not a tradesman at all (T18)//.

Employer (E27) when talking about the motor trade also suggested that some apprentices were being trained well but others were not and this seemed to have

become almost part of the accepted training lore that has developed around the competency-based system. Many respondents particularly in the monitors group had discovered a variation in standards of competency.

Selection: monitors

The following expressed a common viewpoint:

In my experience generally is that people that are very good on theory are not quite so good in practice and vice versa. The practical people are not so good on theory. (M21)// There are lots of people out there that are not...well...very literate in the trade areas, therefore we adopt different methods of assessment (T18)// I've had kids in the past that have done their four year apprenticeship, they haven't achieved competence but they are very hard working people, very honest genuine hardworking people who will within the trade find a place (M28)//.

The content of apprentice training was divided between theory and practice, the theory was completed at college and the practical work in a company. Generally apprentices were better in one area of training than the other, but the apprentices that were good at both were usually of a high standard. This was often a major problem for the individual business as one aspect of training without the other limited development of the individual and the organisation. The ideal situation was that both practical and theoretical skills were up to acceptable standards for industry. Consequently selection of apprentices was a very important area that warranted careful consideration.

Summary

Emergent Themes: monitors

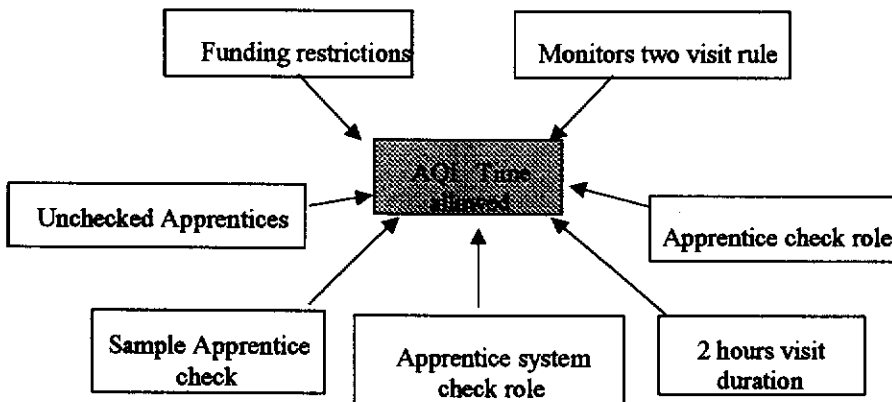
What was the monitor story saying about NATAS and Modular assessment? NATAS monitors, as stated earlier were employed by the then Department of Training. They were skilled tradespersons and they performed two roles, namely that of apprentice monitoring and apprentice system monitoring. Formal function was to monitor in-

company training, and mainly be responsible for the quality control aspects of the scheme.

Key issues that emerged from this group were as follows.

Time allowed for visits was considered to be insufficient by monitors in the NATAS framework. They were required to visit each apprentice twice during their apprenticeship. These visits were only about two hours in duration and they were expected to check the company assessment system (which was mainly paperwork), as well as the individual apprentice, or in large firms a sample of the apprentices. Two hours was the minimum requirement in theory, but, some apprentices were missed out by the system

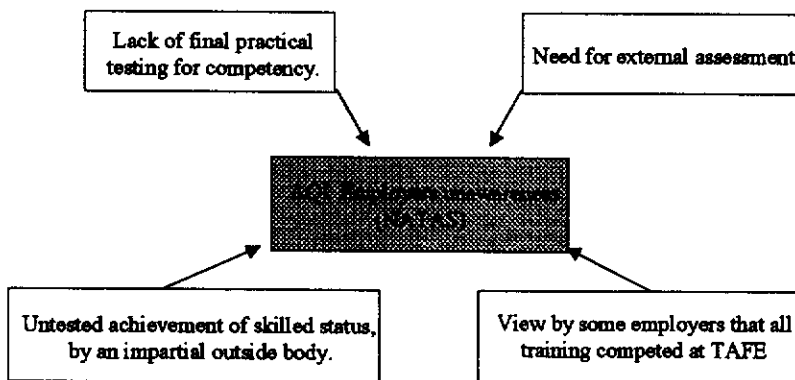
Assessment Quality Interpolation (AQI) inputs that impact on the theme time allowed.
Monitors Theme 1.



Employers unawareness - It would also appear that some employers were not aware of the requirements of the NATAS assessment system. Monitors were unequivocal in saying this created major problems for assessment. Examples given such as this one where some employers were under the impression that all the training was completed at the colleges were commonplace. Still on the theme of employers and the company, setting the need for external (and skilled) assessors was strongly endorsed. It was a

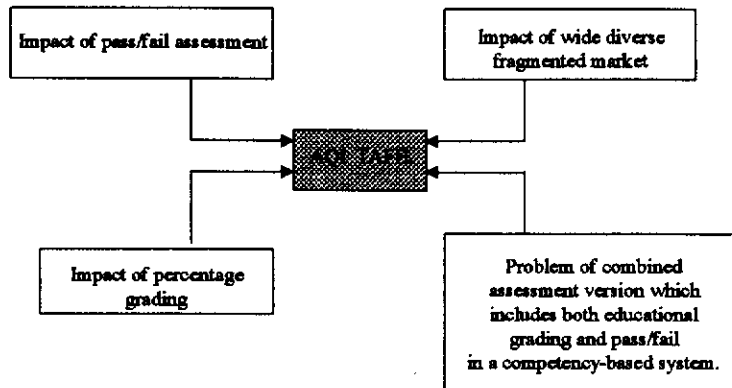
matter of some concern that every apprentice prior to achieving skilled status did not have to prove his or her competency to an impartial outside body within any assessment system.

Assessment Quality Interpolation (AQI) inputs on the theme Employers unawareness.
Monitors Theme 2.



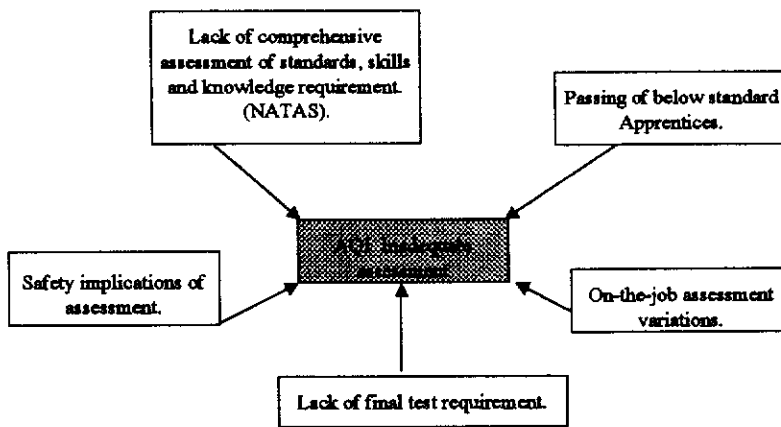
Technical and Further Education TAFE was recognised as having a wide, diverse and fragmented market to service. There were many comments about TAFE and it was evident that there was a conflict, perhaps transitional, between the preference to give grading which was in the educational model and the requirement to follow competency guidelines. It would be interesting to see whether or not these perceptions of monitors were in harmony with lecturers themselves.

**Assessment Quality Interpolation (AQI) inputs on the theme TAFE.
Monitors Theme 3.**



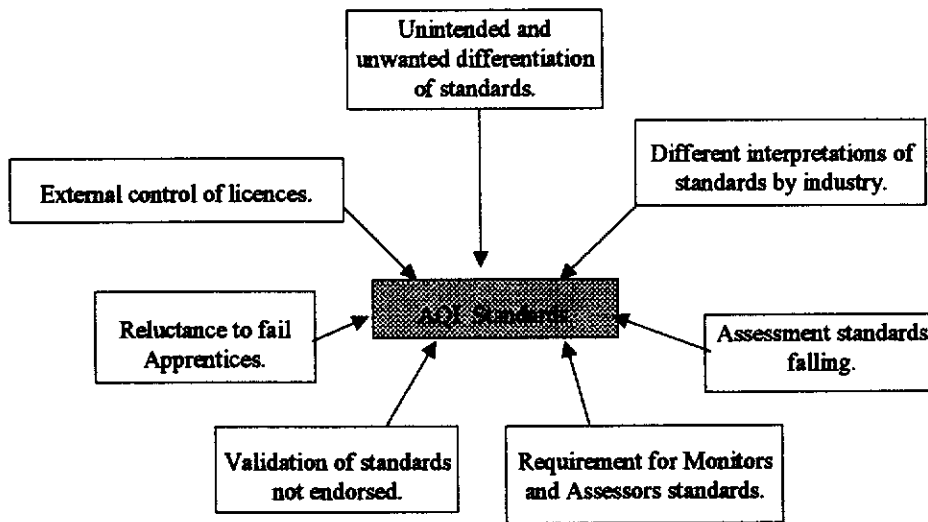
Inadequate assessment The NATAS assessment system was doing an adequate job but there were several problems. One was that it was not a full assessment of the apprenticeship system. Therefore because there was no comprehensive assessment of all apprentices, some passed when in fact they were below standard, rendering the assessment invalid. Monitors insisted that all the skills and knowledge that a potential tradesperson required to work to the industrial standards of a particular trade needed to be assessed and also the connection often made to safety elements and the dangers in some industries had to be kept in mind. There were various assessment design suggestions many around the need for assessment to be more comprehensive with, for example, a form of final examination prior to trades person status. Some monitors suggested a final end test of at least a minimum of a days duration to be a requirement for all apprentices. The ideal testing system was for the apprentices to be given an actual job to complete and then be tested to the recognised trade standard.

Assessment Quality Interpolation (AQI) inputs on the theme inadequate assessment.
Monitors Theme 4.



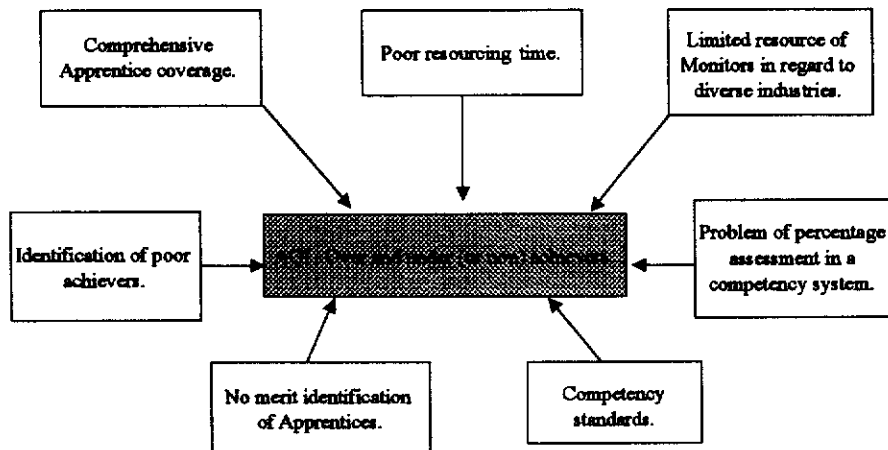
Standards – A main problem here was an unintended and unwanted differentiation in standards as well as different interpretation of these standards within the system. This impacted on validity and as there was no overwhelming endorsement from the monitor group of a highly validated system in the case of either NATAS or its successor, the Modular system made any form of assessment extremely difficult and brought into question the validity of the system as a whole. Monitors themselves mentioned that the system needed a high standard of monitor or assessor to ensure high standards of apprentice training. Monitors suggested, alarmingly that assessment standards appeared to be falling rather than rising which was not what was expected when a new system on a national basis was established. The important point of final assessment of standards needing to be external to the companies before a tradesman’s licence was issued was suggested and the general opinion was there was either a reluctance or inability to fail apprentices, although the view shared here, was that it was better to have a few apprentices failures than have the reputation of an industry damaged.

**Assessment Quality Interpolation (AQI) inputs on the theme standards.
Monitors Theme 5.**



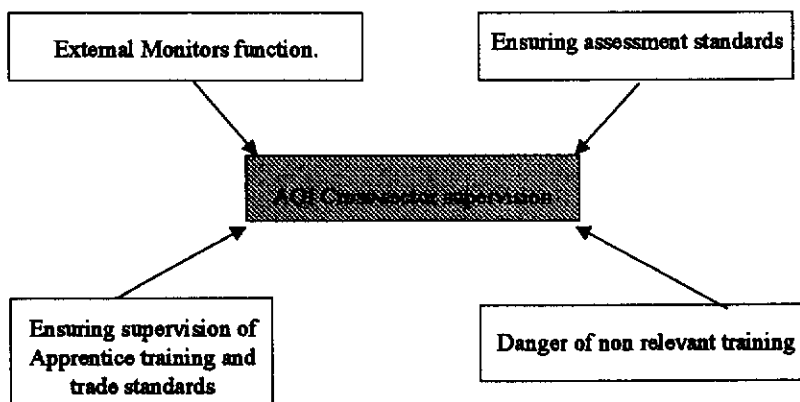
Over and under (or non) achievers A major concern of industry representatives such as monitors who were involved in competency-based training and also had experiential discernment on apprentice achievement was that the Modular assessment did not identify merit in apprentices. They thought that this was important to the point where this was a strong theme in the interview conversations. Competency meant the ability to complete a job to the standard required by industry. Therefore if this was not completed or achieved there was a failure or non achievement of task. To talk of competency in percentage terms showed a basic lack of understanding of the system in question, in other words they were either competent or they were not competent. Underachievers were also considered to be a hazard for the competency-based system although for different reasons. The system, if it were comprehensive enough in terms of trainee coverage would differentiate non-achievers. Two main problems were diagnosed concerning this finding. These were the resourcing problem, and this meant both the resources in terms of time allowed each assessor and the resources needed to supply monitors across diverse industries. In a setting where there seemed, from the monitor's viewpoint at least, an essentiality about the on-the-job training assessment components, poor resourcing was severely criticised.

Assessment Quality Interpolation (AQI) inputs on the theme over and under (or non) achievers.
Monitors Theme 6.



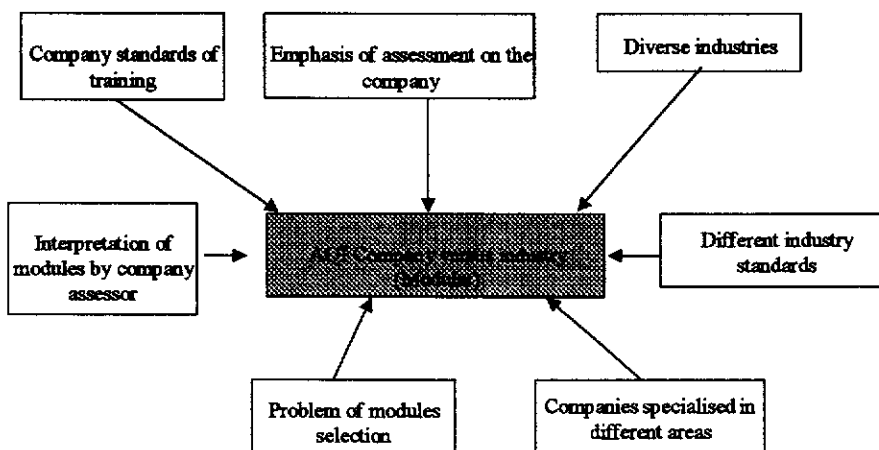
Cross-sector supervision Supporting the need for external figures who were outside but connected to the trades being assessed, monitors emphasised peripheral functions such as keeping apprentices on track with trade-related training, and providing a supervisory figure, otherwise there was a danger that apprentices would be given work that was not relevant to their stage of training. Further that others in the assessment role set made sure that all parties involved in apprentice training were kept up to the mark and standards within the trade were maintained.

Assessment Quality Interpolation (AQI) inputs on the theme of cross sector supervision.
Monitors Theme 7.



Company versus industry -The Modular system presented one particular problem for industry. Within this system the emphasis of the assessment was on the employer. Consequently the interpretation of the modules were to be carried out by the company assessor for on-the job training. This meant that the standard of training of apprentices would be the company standard. Some respondents mentioned the problems associated with the general industry standard, because of the diversity of industrial workplaces, companies often specialised in different areas and worked to different standards.

Assessment Quality Interpolation (AQI) inputs on the theme of company versus industry. Monitors Theme 8.



Chapter six begins with the addition to the monitor findings of the lecturer respondent set (see figure 6).

Chapter 6

Discussed Findings

Lecturers: Technical and Further Education (TAFE)

Figure 6 : emerging categories and issues for key stakeholders

Group	Monitors	Lecturers	Employers	Apprentices
Category ASSESSMENT METHODS & ASSESSMENT	Not positive Issues like time resources and employer awareness	Not positive Process checks in Large classes a concern. Time resources a concern because of multiple tries		
EXTERNAL ASSESSMENT	Strongly supported Industry focus, experienced tradespersons pastoral role. Cross sector supervision	Employers need advice in choosing modules at TAFE		
EMPLOYERS RESPONSIBILITY	Small companies employers not all good assessors. Company v/s industry	Employers used grades. Employers frustrated at college paperwork. Too complicated not user friendly Employers/lecturers disagree on pass/fail		
STANDARDS	Worrying, safety an issue, penetration and diversity makes standardisation difficult due to different interpretation	Doubts on standards Variable instead of uniform Reliability as subjective marking by lecturers		
THEORY	Off-job v On-Job Issues. Grading v/s pass or fail The % problem	Grading mindset and concern at the 100% pass 100% fail mentality		
COLLEGE SYSTEM		Administratively more paperwork.		
ADMINISTRATION	Inadequate resourcing and funding	Variations between colleges		

Introduction

TAFE (Technical and Further Education) lecturers was the term used by the researcher to cover many staff levels within the further education college system. The TAFE (Technical and Further Education) group of respondents were stratified by lecturer, senior lecturer, head of department. This was to ensure a cross sectional view from within the college system. Some of the above, as well as administrators such as associate directors were involved as project managers with industry and so it could be seen that there were close links between different perspective's within the research groups. The colleges were responsible for the off-the-job training, which was for the most part, theoretical type of instruction for both the NATAS and Modular schemes. The enterprises served by TAFE covered a wide range. Examples included are engineering, plumbing, cooking, hairdressing, electrical, painting, metal trades, automotive and furniture removals. To give a sense of the responses across a similar range of assessment topics to the monitor, manager and apprentice ones, a broad selection of responses would be given followed by emergent themes which appeared to be of interest or concern. The comments below were directly based on interviews (contained in the Appendix B) conducted on this group of twenty respondents from the TAFE sector.

Theory: (AQI) Assessment Quality Interpolation.

The AQI concept was explained in Chapter 5, and the Assessment Quality Interpolation(AQI) was also present in the lecturer data set and described by means of diagrams in the emerging themes summary section of this Chapter.

Assessment Methods: lecturers

This study took place in the midst of the change from the time-served to competency assessment context (defined as Pre-NATAS, NATAS and Modular). Apprentices would attend TAFE during the first three years of the apprenticeship for all systems. However, courses needed to have been structured to meet the design and assessment

requirements of competency-based systems (mainly Modular) across a diverse range and size of industrial and service organisations. At the time of the study, the competency method was not yet adopted by all industries and organisations and the resulting tension was evident in the lecturer responses.

Lecturers stated that under the Modular scheme there were a variety of assessment methods in use. The assessment methods included testing the practical as well as theoretical aspects of the apprentice training. So some modules were assessed using multi choice questions, assignments, short answer questions and practical tests. The college tried to compile a selection of methods for each module so obtained a fairer assessment of ability. The following referred to assessment methods:

Most lecturers use some sort of question and answer sheet, some sort of description in terms of what's required, they have to complete a task and complete it to a satisfactory level (A44)// Assessment methods: I guess the methods vary from trade to trade (A39)// in some modules we may have written tests , we may simply have project work, we may simply observe student or apprentice at work (A40)// we use a whole range of methods in that we do practical assessment, we demonstrate ,imitate, we check faults and we see what the finished product is there (L41)//.

This indicated that the training at college was structured and apprentices had their workload explained and an indication given of the standard required. The task was also demonstrated by the lecturer and the student learnt until competence was achieved. However, both lecturer and apprentice had to agree on competence achievement prior to assessment of that particular task. This method depended on a job sheet which included an explanation of what was required, and so the result depended largely on the standards described by this system as well as the competence of the lecturer.

Lecturer (L50) used self paced learning and so students were assessed when they considered they were up to the required standard. The important point here was the emphasis on skills achievement rather than where the skills were acquired. The competency-based scheme allowed for many attempts for skills achievement and so the college had to build this type of flexibility into their system which at times could

create difficulties with class organisation, with students progressing at different rates. Assessments were conducted in controlled circumstances with the skills being demonstrated in front of the lecturer rather than the student providing evidence of skills achieved. The example of hairdressing showed that it was not sufficient to bring evidence of work completed such as tinting, except to show the student was at the standard to undertake assessment.

A lecturer (L51) suggested that there was a variety of assessment methods in use depending on whether the assessment was practical or theoretical. However the changeover from a State method to a National method caused some difficulties within the colleges system because people were familiar with the existing practices and some procedures had to change. This indicated the difficulties of the lecturer who was at the training provider end of any apprenticeship scheme and who had to change procedures while providing the training. So all forms of accumulated assessments such as tests, would or would not be relevant and would have had to be redesigned which was a major additional workload until they were re-established.

Lecturers tried to assess the material provided by the Modular scheme at the trade standard but there was no guarantee that there was not variations of standards between different colleges. The problem identified here was that the modules were assessed at different times over an extended time period, which meant that standards of skills were subject to variation due to time lapse. These problems were reduced by close liaison with industry but skill standards could only be retained with constant use. Therefore if possible Modular training needed to be closely associated with the work experience aspect of apprentice training.

Assessment: lecturers

Assessment

Assessment is the process of collecting evidence and making judgements on the nature and extent of progress towards the performance requirements set out in a standard, or a learning outcome, and, at the appropriate point, making the judgement as to whether competency has been achieved.

Another way of describing assessment within competency-based approaches to learning is to say it is criterion referenced. This means that it measures a person's performance or identifies their achievement in relation to criteria and

not in relation to the performance of other learners or trainees. *Framework for the Implementation of a Competency-Based Vocational Education and Training System*. Vocational Education, Employment and Training Advisory Committee (VEETAC) February, (1993)

Assessment Validity: lecturers

Competency standards assessments are valid when they assess what they claim to assess. Validity of assessment is achieved when:

- * assessors are fully aware of what is to be assessed, as indicated by the units of competency, learning outcomes and clearly defined performance criteria.
- * evidence is collected from activities and tasks that can be clearly related to the unit of competency or learning outcomes specified for the course or training program
- * evidence demonstrates that performance criteria have been met
evidence is sufficient.

Source: *Framework for the implementation of a competency-based Vocational Education and Training System*. Vocational Education, Employment and Training advisory Committee (VEETEC) February 1993, p.15)

Lecturer (L56) had serious doubts about the validity of the assessment in the scheme. He questioned whether the assessment identified true understanding of the material, when some of the acceptable answers were vague interpretations of the same. The example given of Occupational Health and Safety, in view of its importance, needed to have an assessment procedure that provided for an answer that showed a clear understanding of the issues involved. The retesting of a failed student was a weak area in the scheme, as any subsequent assessment without a different test would be passed more easily. This rather defeated the objective of maintaining standards, because it meant that the system would not necessarily fail any low standard apprentice.

The previous apprentice training curriculum at college had evolved over a long period and in the administrators view (A40) had the advantage of being more integrated. So that drawing and practical components related well together. Another important difference was that the learning requirements were organised in large components rather than in the smaller modules in the present system. This meant that large amounts of learning were merged with all the advantages of integration of different

aspects of the course. The present system because of the smaller modules could result in gaps in training which was less of a factor than in the previous method. The old course also had the advantage that every apprentice did the same curriculum and it was easy to manage. However, Modular had a wide range of choice which made it more adaptable to a changing and diverse industry.

The main problem with Modular, said the lecturers, appeared to have been that the original curriculum had flaws and it was an unwieldy process to have obtained changes for improvement to the system. Curriculum review was considered a problem and needed careful and prompt attention. The wide range of choice of modules provided the employers with selection difficulties, a view that was a strong emergent category. The scenario was described where employers were provided with core modules as well as many electives. It was found that large companies with training staff managed this selection process often better than the smaller companies. Colleges are getting over this problem of interpretation by such devices as the use of liaison officers to give advice on the best match of curriculum to particular organisations.

The following referred to validity:

Well I suppose the only real criteria as far as validity is concerned is from the scores and students getting jobs,(A42)// Validity I think I started out by saying we don't have any structured process for monitoring and moderating marks.(A44)// we're all humans and our method of assessing when the human is involved could be questioned although what one particular person measures as competent another one might not consider competent (L48)// The assessment should be valid and you should actually use the same sort of criteria against all the products the students produce.(L49)//.

Lecturers were given a degree of autonomy in the assessment process and appeared that this was not always monitored by colleges. Variations must, it was said, exist between individual lecturers even though they appeared to be working to a common standard. There was some criticism in the findings about the validity of apprentice performance both at the college and at the workplace. Employers were critical of some of the apprentices as they were involved in on-the-job assessment in the workplace and therefore were in a position to have seen the results of training. When

college assessment did not agree with the employers evaluation of apprentices, problems occurred.

Lecturers appeared to have had a flexibility of approach to assessment which created problems when there was a requirement for dispute resolution. College staff due to the nature of their work were inclined to teach in different styles from autocratic to democratic, and so disputes between staff and students occurred. Students did not like to fail, colleges did not like large numbers of failures and employers did not like to see that selected apprentices had not achieved success. These are some of the pressures placed on assessment systems and so a clearly defined standard was of major importance in a valid assessment process.

Assessment Reliability: lecturers

Reliable assessment uses methods and procedures which engender confidence that competency standards and their levels are interpreted and applied consistently from learner to learner and context to context. Without reliable assessments there can be no comparability of credentials. High quality competency standards are fundamental to reliability.

Source: Framework for the implementation of a competency-based Vocational Education and Training System, Vocational Education, Employment and Training advisory Committee (VEETEC) February 1993, p.16

Some respondents stated:

In some cases I guess it's the difficulty is that you tend to measure against the rest of the class whereas in other areas such as competency-based the student is measured against the actual task at hand and there is the set standards for each competency.(A39)// he personally or she personally would be sort of trying to improve themselves and tending to measure themselves against the assessment criteria rather than the teacher perhaps measuring across a class.(A42)// whereas the normative reference system where they would gain a 50% which indicated that they are not as good as the person who got 90% or even 100% (L41)//you're relying on them on their interpretation and that may well be finding it varies quite a bit between lecturers (A40)//.

Some lecturers appeared to assess against the group norms in less defined theoretical areas but were inclined to be more objective when competency-based training was assessed. Competency-based training was usually defined with set standards and so

assessment was measured against a recognised criteria. This showed the importance of clearly defined assessment criteria which set the standard for objective assessment. So both norms based and criterion based assessment was conducted in TAFE (Technical and Further Education) depending on the type of training involved.

Respondents said:

we have had some problems back from employers that, compared to the older type apprentices doing the other scheme, these ones aren't seen to be as good or don't seem to remember or retain the information as good because as far as reliability goes, once they've actually been assessed and been able to do that competency they don't do it any more so there's no actually come back and see can they do it in three or four or six months' time.(L37)// The rationale is that some of the experts seem to think that a person is deemed competent once, then he's competent again, not necessarily correct (L49)// I think the reliability factor leaves a lot to be desired (L52)// So we are forced in a sense to do the total assessment at the end of module(L41)//.

A senior lecturer (L41) indicated some of the problems associated with assessment reliability. Some skills needed to be demonstrated throughout a course but the Modular course design required them to be achieved in a particular module otherwise the student was unable to progress to the next level of training. This created problems for the lecturers and college administration and their solution had been to group modules together and test all at the same time. The danger of any system such as a Modular system (National) was a lack of flexibility where the system could override common sense or the trade requirements. The responsibility lay with the course designers. They were expected to ensure that this did not occur with a comprehensive review procedure.

Fairness/Flexibility: lecturers

Assessment practices endorsed for the implementation of CBT must be flexible if they are to be appropriate to the range of delivery modes, sites of delivery and needs of learners. There is no single approach or set of approaches to the assessment of performance in a competency-based system. Assessment is fair if it does not disadvantage particular learners. If learners understand clearly what is expected of them and what form assessment will take, and if the assessment places all learners on equal terms, and the

assessment procedure supports their learning, then the assessment should be fair.

Source: Framework for the implementation of a competency-based Vocational Education and Training System, Vocational Education, Employment and Training advisory Committee (VEETEC) February 1993, p.17)

This was seen to be an important consideration for lecturers. The diverse nature of industry created problems for a variety of reasons. Apprentices arrived at college with different levels of experience. Some were unfamiliar with certain pieces of equipment whereas others had regular experience with them in their place of work. This introduced an unfair component within a competency environment. A lecturer (L41) mentioned that there was a danger of bringing the pass mark down to the lowest common denominator and so lecturers had to ensure that the industry set standard was maintained. The competency-based standard was open to some interpretation and so apprentice assessment was difficult to achieve and seen to be impartial to all concerned.

Some lecturers discussed fairness:

some students you know putting a hell of a lot more work don't get really get any more extra, any more recognition as someone who just puts in the basic or just enough to scrape through so sometimes the assessment may not be fair in that way. (L37), // The fairness of it, I suppose, it's not fair to those students who are by nature better than other students, better manual dexterity (A42)// As far as I am concerned a big disadvantage of the competency-based system is that all the students get a P for pass or an H for hold and it does not recognise excellence. (L49)// you can give them a pass or a hold and they just don't know how they are performing when they are fed with a pass or a hold (L56)//.

The competency-based system with the pass or fail (hold) assessment gave students the impression that a basic pass was all that was required. If students got no further recognition some would only work to a basic level which would further reduce the future standard in the trade. Another method of getting over this problem was for the lecturers to have given further reports to employers on the higher abilities of excellent students, above the competency standard.

An interesting aspect of fairness was being fair to high achievers. It was strongly felt by the lecturer group that being fair to the better student would have included giving him/her some incentive for achievement and in fairness to this the accompanying recognition. This was said in many different ways and in this sense the fairness concept one of the components of the “grading mindset” theme. Lecturer (L43) was representative of this category with the view that the pass or fail (hold) of the competency-based assessment did not give the better student the incentive to achieve higher standards. The industry set standard was the only criteria that the student was assessed against and so when this was achieved the student moved on to further modules. The achievement of fairness was also linked to a more general levelling down of standards so that the competency framework could be seen as not being fair to the trades that wanted to go for overall excellence.

The assessment standard, said lecturers, might have brought down the average skill level of a trade to a common minimum level. This was because all standards of apprentices had to achieve the same minimum results. Often in the past the exceptional apprentices had become the benchmark for the work standard among fellow tradesmen and as such had influenced the improvement of general standards.

In a practical sense, being fair and expressing this through pass/fail competencies produced results where the sacrifice for fairness in assessment could well have been quality. Senior lecturer (L47) in the plumbing area explained that the practical modules were assessed using the pass or fail (hold) method whereas all the others were assessed on the percentage basis. Some of the examples given above were passed at the sixty-five percent level which was then ratified by the Office of Energy. A competency-based type of system which was mainly assessed on percentage terms was in operation with in some cases approval given by organisations responsible for trade standards. The sixty-five percent pass rate also meant a thirty-five percent fail rate on skills that needed to be achieved at a hundred percent level.

Lecturer (L49) in the catering trade believed that the purpose of assessment was to measure competencies against clearly described criteria. The student should be capable of achieving the competencies to get a pass. He also believed this criteria

should be as objective as possible which indicated that there was an element of subjectivity in the assessment process. His suggestion to achieve this was some form of rating scale but this solution tended to be very time consuming. This was a major problem because a large part of class time was taken up in the practical assessment process. So he was inclined to assess on the basis of the finished product, and in this cooking example, the bottom line was the standard required by a good restaurant for customer satisfaction. This meant that there was an element of subjective assessment although this was being carried out by an experienced chef and lecturer. This was not so much exhibiting fairness as responsiveness to market forces.

Lecturer (L49) also appeared to have reservations about the assessment process and suggested that due to lack of time, progressive assessment gave way to final product assessment, and in so doing, some fairness was lost, because comprehensive assessment needs both progressive and final assessment.

External Assessment: lecturers

During the college training program, the apprentice is instructed and assessed in the college listed skills (essential and additional) of the Trade Training Schedule. *Australian New Apprenticeship Training and Assessment System (NATAS)*, Commonwealth/State Joint Project Final Report. WA Department of Employment and Training. APRIL (1991, p.24)

Lecturer (L46) representing the views of the engineering trade supported the idea of an independent quality control function which was part of organisations such as the Department of Training. The department would set up monitors to evaluate the training of all trades by employers, training providers or TAFEs. They could, said this lecturer, have ensured that all standards were uniform and up to trade requirements. This external monitoring of training with the cooperation of industry resulted in a perceived higher standard of trades person, but they had to be supplied with adequate resources and staff. Financial restrictions had impacted seriously on the quality control aspect. The system should have been driven by the job requirements and the extent of assessment necessary to have provided the expected result.

Lecturer (L43) favoured the idea of a mentoring system of a large group of apprentices following their own selection of modules. The mentors would be drawn from a wide background which would have included both colleges and industry.

Another lecturer (L51) believed a solution may lay in combining work place learning with work place assessment. He suggested a 'shopping list' of necessary skills that needed to be achieved by a painter and decorator which could be assessed on site. This was a very practical and user friendly idea and could easily be incorporated into a competency-based scheme, but the assessors needed to be of high quality and competent. So he suggested a partnership between employers or training providers and colleges with maybe some form of independent assessment acceptable to all parties. Also the assessors needed to be trained to a high standard so as to maintain and increase standards within the trade.

Standards: lecturers

Administrator (A42) believed the purpose of assessment was to meet a certain criteria and in addition the requirements of a particular job. These were assessed against industry standards but he suggested that industry was not entirely sure what these standards should be. This was an interesting point because it would appear that some industries worked within a range of standards. The example he gave of the plumbing trade which at this time still did not have a defined national standard. Assessment and standards were closely linked and it was difficult to see how one could effectively function without the other, in other words a shortfall in one would directly effect the other. The lack of a set standard in competency-based training would make it difficult to assess the necessary competency. The lecturers and other assessors would depend on their own interpretation of the assessment criteria and this made a uniform product highly unlikely. This meant that apprentices would finish training and enter trades as skilled tradesmen having been assessed at a variety of different standards. Obviously some of these standards would be acceptable but other would not be up to trade requirements.

Lecturers stated:

The reason or the purpose for assessing apprentices is to obviously make sure the end product is going to be suitable for what industry requires (A40)// is to determine whether or not they've reached the established industry set competency standard (L41)// we should measure them against a set list of criteria and we should say can the student do this, yes or no and this should be with competencies (L49)// I suppose some mechanism must be used to actually ascertain whether the students or trainees have reached a desired level of competence so that they can actually go out and do the job (L37)//.

Lecturer (L37) linked assessment to the desired level of job competence which should have been the main objective of any apprentice assessment. This meant that assessment was to a recognised standard which was compatible with industry. However it was very important to get the right assessment process, linked to the right standard which can only be obtained from the trade in question. If this was not the case the apprentice training was ineffective and there was a waste of financial resources for all concerned.

Although the training was being given without a defined standard, the lecturer (L48) believed the college was producing what was required. However he mentioned that the person was not skilled in all facets but they still would be a valuable asset to industry. The reason given was that most students were in demand from industry and were employed prior to the end of their courses. This was an interesting argument and obviously the college was providing training but was this the training or standard required by industry. Companies employed people with some training if there was no other options available as something was often better than nothing. Consequently the question was not what training was given but rather was that training up to the trade requirements and the only way to have ensured that this was the case was to have some form of quality control.

The National Metals Modules scheme replaced NATAS (State), and so the apprenticeships became more universal for this trade within Australia. However some of the learning outcomes were not considered relevant to the West Australian scene. The learning outcomes also tended to be more general than required by the industry. The previous system in Western Australia was more specific and more up to date with

the local requirements. The problem with a broad learning outcomes was that there was a variation in interpretation by the assessors which must have had an impact on final standards. Therefore the national scheme produced a range of skill standards depending on individual lecturers or even institutions assessment procedures. This showed the necessity of getting the right procedures in place. This was difficult because of the diverse nature of industry but the correct assessment criteria had to be achieved to provide meaningful apprentice training to trade standards. The first stage was to establish national trade standards and the second stage was to continuously review the system until the required standard was achieved. This would become apparent when the product reflected the standard that the trade or industry required.

The National Metals Modular scheme had only been running for a couple of years at the date of this interview (15 March, 1996) and so it was difficult for this lecturer (L37) to have assessed the effectiveness at that stage. However some people in industry did not like change and so negative views were originated for this reason. Industry because they were directly involved would have been the first to notice any change in general standard and so their views should have been carefully evaluated by the originators of the scheme. Lecturer (L37) pointed out the real effectiveness of the scheme would be apparent when the apprentices had finished their four years of training and were out in the workforce.

Lecturer (L37) had reservations about Modular and preferred the previous (State) scheme. Although the practical tests in the new scheme were better, the objectives were so broad that interpretation was difficult without some backup system of notes or instruction. Although the lecturer admitted he was slightly biased, it was important as the training provider that he was fully aware of the scheme in question, because it was apparent he had doubts of the validity of the apprentice training and assessment.

Administrator (A38) mentioned that the theoretical standards had been comprehensively defined. However the practical standards depended on the lecturers interpretation of what was required. He was aware of the problems associated with the lecturers own background qualifications and the interpretation of the industrial

standards. This indicated that some work needed to be done in this area to reduce the wide range of variation that existed in the trade.

Respondents stated:

I do not think there is enough emphasis at the company level. I think the companies do really get away with some kind of blue murder. A lot of things I omitted earlier on was to talk about the drop in standards of apprentices that has happened over the years, and in the Refrigeration Industry in particular (A38)// I am getting back on the national system that's on my agenda at the moment, the problem I see is the system is designed to, could have the effect of deskilling our traditional skill trade areas (L51)// most of our assessments I suppose is done against industry standards although quite often industry doesn't know what the standards are, this is particularly the case in the plumbing area (A42)// yet a lot of individuals they assess it or interpret differently so actually your standards may not be the same or certainly may not be the same across institutions (L37)//.

An administrator mentioned that in his view the standards had dropped in the refrigeration trade. He thought the reason was that Government departments had stopped training apprentices. Obviously large organisations had a greater potential to train apprentices well and often set the trade standard of their industries. Therefore as the above had taken place it was no surprise that trade standards had fallen. A possible solution was the greater involvement of Group Training Associations to fill the training gap for industries so affected by change, found by Misco (1997).

Competency-based training and assessment created problems for TAFE (Technical and Further Education) especially when students did not pass various modules and were placed in the hold category. The college administration was not designed to cater for people who did not pass the various courses in the time allowed. The reason was that college funding was linked directly to the curriculum hours, and this did not take into consideration students who did not pass the course at the first attempt. An example provided by the research, indicated up to sixty electrical students in remedial classes were trying to pass various modules. This showed up a number of things the apprentice training was not be up to standard or the apprentices were of low quality, or the competency-based assessment was for the first time revealing the real situation in regard to national standards. However it also indicated that the college

administration had not been flexible in changing systems to cater for competency-based training, and if that was not a fair comment, it implied they were unable to convince the relevant government to change its financial arrangements.

Administrator (A39) like many others considered the assessment process rather subjective in some cases. During a period of change some trades were operating a competency-based training scheme but others were not, although the intention was to eventually change to a competency-based system. The electrical area had introduced a computer based testing process which allowed apprentices to be assessed at their own pace. However two failures meant they had to complete the module again. Moreover on the non competency-based training, the practical tests were measured against a finished product in percentage terms. The finished outcome being the required standard the apprentice was expected to achieve. The theoretical tests were based on short answer and multiple choice which had proved adequate for assessment purposes.

College staff had developed assessment methods for competency-based training. The initial problem centred on the individual interpretation of the standard to achieve a uniform level of subject monitoring. Many colleges gave their staff training in competency-based methods and established college norms on learning outcomes and performance criteria. Administrator (A44) mentioned that the emphasis was then placed on assessment rather than subject delivery, however now the balance has been restored. The reason for this was the competency-based system increased the assessment process which occurred after each module. Also when each student was learning at their own pace in a large group the resulting different assessments took up more of the lecturers valuable time. Employers had also found difficulty with the assessment process especially when apprentices performances at work differed from the TAFE (Technical and Further Education) assessment. The problem boiled down to the interpretation of standards and the human factor. Lecturers may pass one and fail another from the same firm and the employer might take a different view of an apprentices ability. The employers did not fully understand the competency-based pass or fail (hold) method of assessment because most were used to traditional percentage

marking. The traditional method allowed them to identify excellence among their apprentices which often had employment implications. Employers also found that the pass was not a satisfactory indicator of what they regarded as competency, because it only indicated that the student had reached that standard on one occasion. The standard of any competency could only be maintained by reinforcement of training at the on-the-job level and if this was not the case, the apprentice competency would be suspect. So it could be seen that achievement of a competency only meant an achievement at a particular time and place and not a constant level of job competency. The problem of ensuring the reliability and validity of standards of training was a sentiment expressed by many. Although the lecturers had the assessment criteria in terms of a model descriptive, learning outcomes and performance criteria, it seemed that each lecturer's interpretation was different. This meant that standards differed, depending on the level that was taught to the apprentice. If lecturers were able to interpret the syllabus in such a manner it meant that the criteria was not adequately defined. This was an important point because a wide range of standards produced by such a system, rather defeated the objective of a national uniform standard for each trade. College seemed aware of this situation and tried to standardise projects to reduce the differences but found that lecturers based on their experience were establishing their own levels of competence. They had to rely on the opinion of employers as to the adequacy of the apprentice training.

The assessment was conducted against the competency standard set by a particular industry. However at this stage the standard appeared flexible depending on which part of the industry was approached. There appeared to be a vast difference between a five star hotel and the corner restaurant and so this created major apprentice training and assessment problems for colleges. They were using the same skills but they were applying them to different cuisine which means assessment had to differ. The emphasis of the assessment was directed to the individual competencies rather than as in the past to the finished standard. This was a problem when training was broken down into component parts which were individually assessed. However this should not have been an either one thing, or the other situation, because effective assessment should have looked at the elements of competency as well as the final standard.

Respondents mention competency:

so therefore the person is not competent and that is not necessarily so because as I've said before they've achieved the first two stages of the filleting and the crumbing quite competently so may be we should say well the person can't cook rather than can't prepare so there's all these sorts of things that come into play. (L41)// what the government wants us to do is bring in a broad based person. Whether that person is skilled in all facets is questionable (L48)// are the assessment processes good enough, I'd say to be honest, probably not (L49)//.

The competency-based system with its breakdown of jobs into smaller elements such as tasks which when assessed produced interesting situations. The apprentice could for example burn the product, but could have been competent in the preparation aspects of the job. This was something that the average employer would not understand and so it was important to review some aspects of the assessment system. There should have been a priority on the satisfactory final completion aspects of any job rather than the completion of some component. The product should have influenced the system rather than the reverse.

Lecturer (L52) (electrical) referred to standards:

This year, our third year apprentices, first time ever we taught this sort of module so we are looking very much at what the Eastern states reckons is a fair thing. I find a lot of it too hard. Yes we had, for example last year was the first time we taught a module called NE09 and we had 100% fail rate, serious, it wasn't isolated to this college it was throughout WA (L52, Lecturer, Interview).

Lecturer (L52) expressed the opinion of many that the assessment criteria varied between the different states and the programme in Western Australia was subjected to changes. It also appeared that standards varied as shown in the above module example, where a hundred percent fail rate was registered with his college but was also reflected at other TAFE colleges in Western Australia. This was a serious matter because electrical training should not vary to this extent nationwide. The above situation had a variety of possible causes such as poor student selection, inadequate training, low standards, and the wrong assessment criteria in use. This also showed the importance of an overall or national standard linked to effective assessment.

Lecturers explained the assessment criteria situation at colleges:

Against what criteria we assess ,well, firstly there is the competency standard but that can be very nebulous, depending upon what area of the industry set the standard (L41)//so once again you've got some difference between states and colleges which is supposed to be a national level you know set of competency (A37)// What it is that we are trying to assess. A little bit cloudy at this stage and this is probably after four to five years of working with competency-based training (L43)// For the State yes, now the assessment criteria is very much a college thing so we could be a lot higher as opposed to other colleges or may be lower, that's something that's happening that I feel is very bad. It should be State wide (L52)//.

A lecturer in the electrical trade suggested that each college had devised it own assessment criteria based on what they considered to be the standard of the trade. Although this would have been a genuine attempt to develop a fair system it was important to note it would have been difficult to standardise assessment between individual colleges. So some colleges would have been working to higher or lower standards but all supplying apprentices to the relevant industry. It appeared therefore there was no genuine State standard in operation but rather a series of standards which this lecturer did not consider to be satisfactory. It was difficult to see how a uniform standard for a trade could have been achieved without some form of State or National standard in operation.

Lecturers continued:

I often muse about who is checking the checker while the checkers being checked (A38)// I don't think it is a fair assumption on our issuing of certificates to say a person is competent (L41)// now a lad could come from another college and it could be totally different so I feel no it's not good enough. I would like to see a lot more dialogue between all the colleges and a standardised approach so, no I don't think it is good enough in that respect. (L52)//.

Lecturer (L52) reflected a general opinion in the electrical department, he felt there should have been a requirement for a standardised approach for assessment of apprentices. This could only be achieved if the interested parties got together to reach agreement within the State or if a National standard was introduced from outside. He indicated that students being transferred from other colleges tended to arrive with totally different work standards. This made it impossible to achieve a uniform State

standard for apprentice training and had serious implications for the eventual trade standards in the community.

Some lecturers were of the alternative opinion that the industrial standards were broadly defined but could be interpreted by experienced people. A lecturer (L53) mentioned that the assessment due to lack of available time was mainly conducted on the finished product rather than on the training process. The reason for this was the complexity of skills needed to complete a process and the number of students in a classroom prevented individual supervision and assessment at each stage of training. Assessment was usually conducted by observation of the student class with help given to those in difficulty during the cooking process. Also some students brought workplace experience to the classroom and so the apprentices displayed different levels of ability at the college. This created problems in the training and supervision area especially when students were of a poor standard.

Shortfalls in Standards: lecturers

Lecturer (L43) made the point that the learning outcomes were not sufficiently comprehensive and so additional criteria was added by lecturers to the assessment process. This indicated that more work had to be done so that the requirements for each learning outcome could be defined. A review of the situation was a useful suggestion. It would appear that the learning outcomes were too broad in scope which allowed for a variation in interpretation which was counter productive in assessment terms. The lecturer indicated that the situation was far from clear which made apprentice assessment difficult to achieve, even when the staff was experienced and motivated.

Lecturers concluded:

Standards in use I believe, we are getting mostly from European literature, we've got a great influx of American literature, put the two together, we should come up with the best of all worlds. It's a fact I believe that in Australia we also take too much time looking at them so that by the time we come up with a standard, the standard has been surpassed (L43)// If you were looking at the best mix there needs to be an opportunity for the off-the-job lecturers to get down into the workplace and talk a lot and have a better

dialogue with the employer (A40)// Standards, we don't currently have a standard that everyone uses, in terms of the assessment process (L48)//.

In the above quote lecturer (L43) made an interesting point about the development of standards in Australia and the dependence on European and American ideas in relation to this issue. Standards developed from outside had some relevance but the local situation also had some input. The development of an Australian standard obviously had to take priority. Standards also needed to reflect the Australian situation and requirements but not be lower than other countries. Lecturers generally produced the Australian standard within the nations colleges but some of these had no recent industrial experience. This needed to be addressed by more liaison between colleges and industry to ensure that the trade standards were not lowered or out of date training was being delivered.

Lecturers mentioned how some standards were set:

To some extent we had some help in the Mechanical Engineering area in that there are some assessment packages that were created possibly, probably half of the modules that we were currently delivering would have assessment packages so that's helped us in comparison with some of the other study areas where they don't have any assessment packages at all. (L46)// some are modules not only electrical but other areas were they actually included stuff which was thrown out in WA years ago so they assessed things which we don't really see relevant as well (A37)// our lecturers have identified the learning outcomes, we have resource materials and as study areas we have examined each of the modules and developed resource materials to cover that (A40)// In trade related material it is often difficult to write questions that will ask the kids to explain the understanding of a situation and if they were to do that, like we used to have (L56)//.

The competency-based training in the mechanical engineering area was being introduced at this stage but some modules arrived at TAFE without assessment packages. This meant that the lecturers devised their own assessment methods for some of the modules. This was not an ideal situation but lecturers agreed that it was very common when new systems were being introduced.

A counter example to the shortfall argument was given by lecturer (L46). He mentioned that his college was in the process of setting a standard within this area by use of subject experts. It also appeared to be setting up assessment tests to be placed on computers. The use of a computer allowed for the individual student to be tested

in his or her own time which increased the flexibility of the assessment procedure. This showed the emphasis and importance placed on the assessment process by this college.

Lecturers said:

What we do in our practical side is not 100% competency-based, we do some projects that we do are similar but we're still doing a percentage mark on most of our projects (L47)// a 50% was the pass mark and from there it went either upwards or downwards and it sort of that gave the students the incentive rather to ascribe harder to achieve a higher mark whereas now the assumption is that if a person is competent, they all get a 100%,(L41)// the employers couldn't relate to a P to where they were they used to get 50 or 60 or 80 so they really had a better idea how the person was going (L37)//.One college in this category had to overcome the competency-based assessment resistance of employers by introducing some subjective criteria that distinguished between average and superior apprentices. These were described as aptitude, initiative and attendance but appeared to have had limited success with both employers and parents. However they proved to be indicators of work performance and students that were good at TAFE (Technical and Further Education) were usually good in the workplace, although there were always exceptions to the rule.

In terms of the current system being good enough, I would say obviously not, that's why we're getting requests from employers, and industry training counsellors saying that we really should be looking at some sort of a grading system so if we look back to 1991 or times like that, our P or H, it's too simplistic to say that that is a satisfactory outcome obviously doesn't suit the industry or the student,(A44)//.

This seemed to be a fair opinion by this administrator but showed there was a problem area between colleges and employers which had to be addressed by further information and training. It was in this situation that a shortfall in standards became a relative concept. Competency-based assessment was measuring different criteria, from the normative based 'special' assessments. The former was measuring successful job completion to a set and full standard and the latter was measuring the completion of a syllabus at other, less set, standards.

Summary

Emergent Themes: lecturers

From the discussions with lecturers there were seven emerging themes. The themes were, in an overall sense not too far removed from the things that concerned the monitors as can be seen below. However, there was a difference in perspective and this would be explored in conjunction with the other two groups, employers and apprentices.

Employer and TAFE provision

In general, there was a willingness by colleges and lecturers to play a part in the new arrangements but there was some apprehension about their reception by employers. An exceptionally strong theme was the need for employers to be better informed so as to understand the college role in the apprentice assessment process. The respondents reflected a well-held view that colleges were happy to provide the training but they thought that the system was not clear to industry. It was feared that this would result in differences between employers requirements and TAFE provision. Administrator (A40) felt that there should have been more research on what employers required for apprentice training. There seemed to have been a serious need for an advisory role to be played by lecturers to assist employers in their selection of relevant modules. This was not so critical for the larger concerns with training staff as in smaller firms. Conversely, colleges needed to know which modules were required and would be supported by local industry before provision was made.

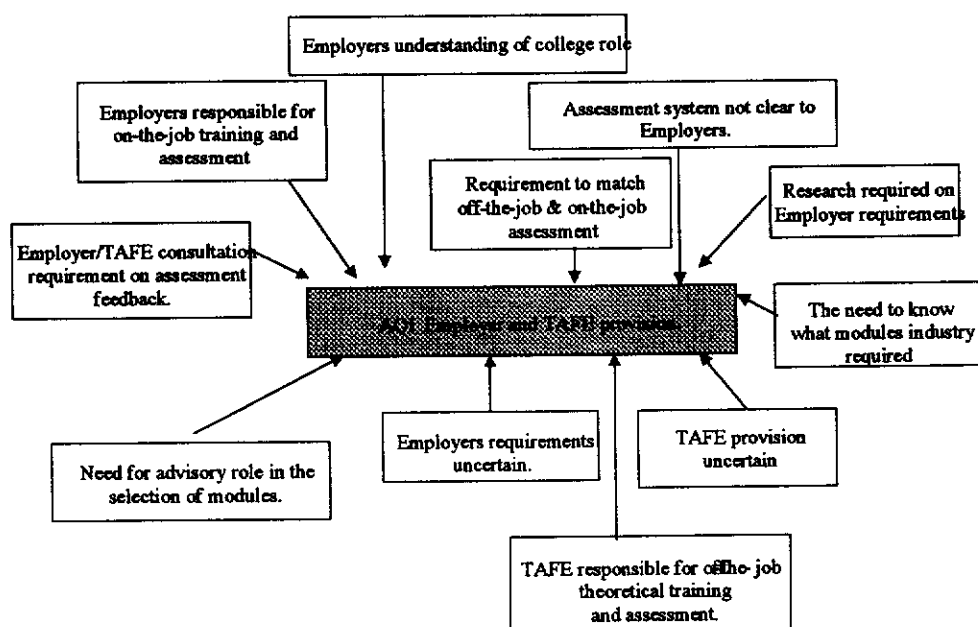
The apprentices pathway through the variety of available modules was known as the footprint, which best described the eventual profile of the apprentices training. The duality of college and employer provision was often referred to by lecturers. Colleges were responsible for the off-the-job component. On-the-job training was the responsibility of the employers. That there was a need to match both forms of training to produce an effective apprentice was the view of lecturers. Employers and colleges needed consultation on a local basis to establish the training programme for each

industry, including some of the special benefits available to industries such as progress reports:

The reason that we have assessments is because our employers wish to know where the students are on the course, so the course that we have is a modular course with assessments at the end of each module and our employers are given a report at the end of every six months so that they know whether their students have passed all the criteria in each module (L45, Lecturer, Interview).

Assessment Quality Interpolation (AQI) inputs on the theme of employer and TAFE provision.

Lecturers Theme 1.



Time available for college

An interesting category involved lecturers' perceptions of employers' assumptions concerning who had the most time to achieve assessment.

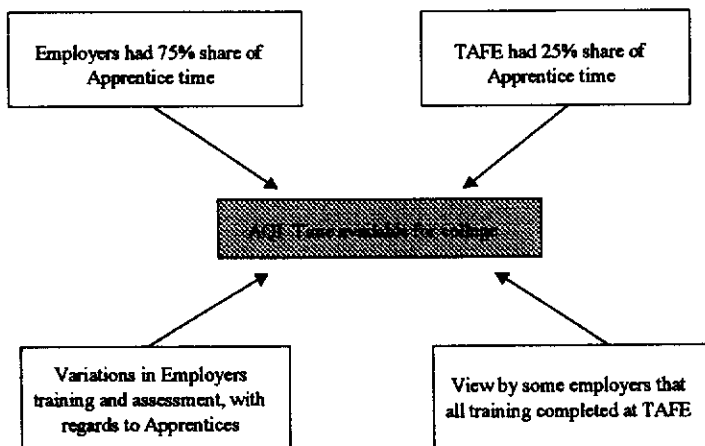
Administrator (A38) indicated that employers had the lion's share of the apprentices time and the college which then had only a limited time to impart the theoretical background to the practical training. However, it was felt that many employers assumed that all or most of the training was completed at college. The employers it should be noted were responsible for the major share of training in terms of apprenticeship time. However the training given varied with the individual firm from organised training to work experience. A lecturer mentioned the time available for college training:

Actual apprentices generally put in about three years of 36 weeks a year, that's a day a week generally, about 744 hours of training over three years when you look at a four year apprenticeship all the rest of the time is... (L37, Lecturer, Interview).

This made the point that the colleges only had a limited time to impart knowledge to the apprentice. During a normal four year apprenticeship, the apprentice attended college during the first three years. The rest of the time was spent gaining experience within the company situation usually under the supervision of a tradesperson. The fourth year was spent entirely within the employing organisation and was designed to bring the apprentice up to the work speed of the tradesman.

Assessment Quality Interpolation (AQI) inputs on the theme of time available for college.

Lecturers Theme 2.



Specific/general training at college

It seemed from this emerging theme that it was difficult to strike a balance between the general theoretical content (which would be industry related) and the very specialised content required by employers.

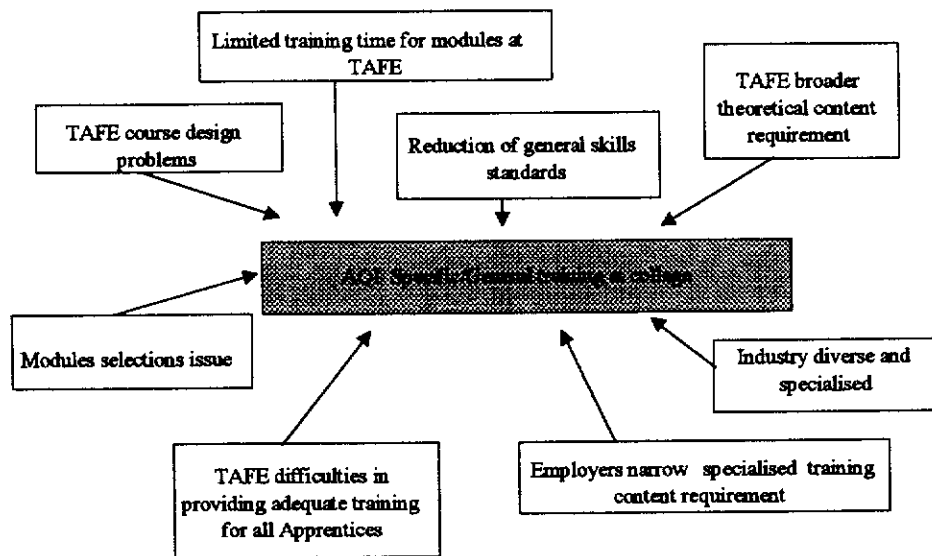
An administrator said:

The industry tends to be very very diverse and specialised and you find companies operate totally in what we call domestic refrigerators and totally in commercial refrigerators, the definition and demarcation becomes very difficult at times and you wonder whose got the definition and if it is right, but nonetheless the companies stay very very specifically in their little patch and so it does vary a lot. (A38, Administrator, Interview).

He said that industry was very diverse and inclined to specialise, which created training problems for apprentices. Colleges had difficulties in providing adequate training for all apprentices. Companies as a rule were only interested in training to their own requirements and so apprentice training and assessment was inclined to be narrow in scope while college training out of necessity had to be conducted in a broader manner. Colleges were very aware of these types of problems when designing apprentice courses.

Lecturer (L51) favoured general training for the building industry which was run in parallel with specific modules for specialist areas within the trade. Some people in the building industry could not get credit for training because they were not in a specific trade category. This lecturer was concerned that a broad general standard in the building trade did in fact reduce standards of all areas to a bare minimum which would in effect deskill the traditional skill trade areas. The other problem that the colleges had was a limited amount of training time to achieve the required number of modules and in fact any other specialised modules. This was more difficult in specific areas such as painting and decorating which also had to incorporate other building modules within the limited time available. It then became a selection issue as to which modules was included or omitted from apprenticeship training.

Assessment Quality Interpolation (AQI) inputs on the theme of specific/general training at college.
Lecturers Theme 3.



Time Resources

It was not surprising that lecturers found some difficulty in making time ends meet. Even though many of the lecturers were tradespersons it seemed that they had to choose the theoretical aspects of training and assessment.

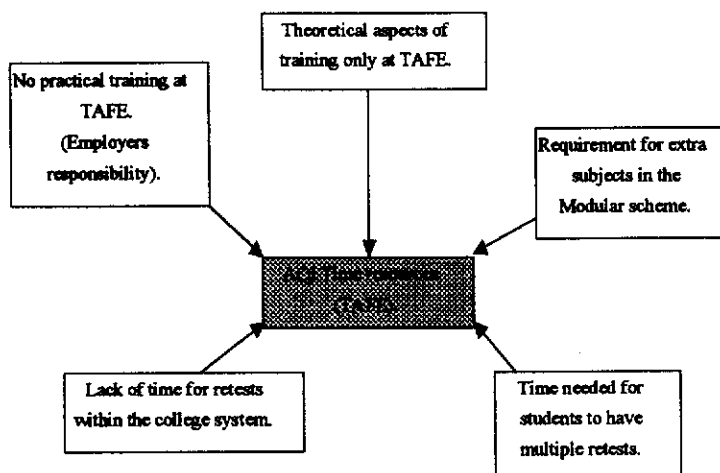
Lecturers explained in their interviews that a main emphasis on college training had to be on theoretical aspects because of the time limitations and the fact companies were not equipped to complete this training requirement. Consequently in the main the colleges completed the theoretical side and the organisations completed the practical on-the-job training. The design of the Modular system also included subjects such as communications, health and safety, union regulations and rules. These, said the lecturers were extras which also took up time within colleges. As well as the pressure of modular subjects, there was an impact on process flow caused by the availability to apprentices of multiple attempts to demonstrate competency. The time for these retests varied enormously.

A lecturer (electrical) said:

The assessment method is very much varied, this particular module, we gave them that document, they had one week to bring back the completed assignment, that was the end of module assessment (L52).

The other problem identified within the college system was the limitation of time for retesting of failed modules. It would appear that skill levels were achieved but sometimes over a longer period, some students resat the tests until they were successful. Coping with various interpretations and ideas about what the college role was/should be was an additional strain on time resources.

Assessment Quality Interpolation (AQI) inputs on the theme time resources.
Lecturers Theme 4.



Adequacy of assessment

There was an overall feeling in this category that assessment arrangements had some inadequacies. One very strong theme in the category was that of inadequacy of things like checklists. This inadequacy produced a level of variation as teaching staff made their personal interpretations. In such industries as the hospitality industry this was seen as quite serious.

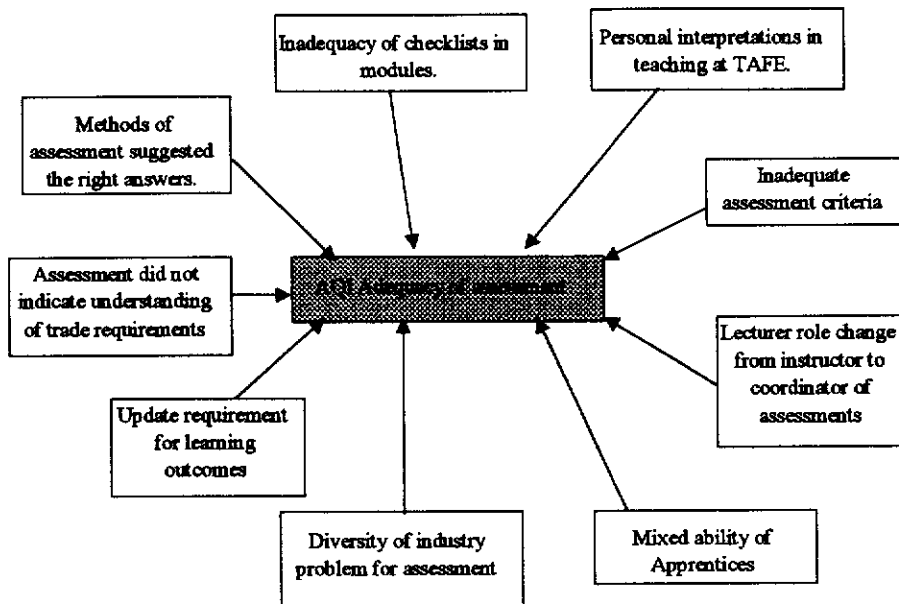
Lecturer (hospitality) (L43) mentioned that each of the modules had an assessment criteria check list, but in his view these were not adequate and the gaps had to be filled by the teaching staff. This meant that assessment by different staff differed due to the extra (and personalised) criteria introduced by lecturers. The hospitality industry which depended on standards of excellence and variations of interpretation by assessors based on inadequate criteria would, it was felt, have found difficulty achieving some uniformity. The learning outcomes were the key to this system and it

judged by lecturer responses more work needed to be completed so as to ensure that they were up to the requirements of this particular industry.

Lecturers also made the point that the hospitality industry because of its diversity depended a great deal on the lecturer expertise and input into the course. There was, they said, a need for constant liaison and discussion between staff to create assessment improvements. This industry was going through a period of change and so assessment needed to develop alongside the change process.

Lecturer (L56) did not feel the assessment method was adequate because the methods were inclined to suggest the right answers. Therefore the students did not study the subject material which rather defeated the objective of the training programme. A lecturer (L56) was concerned that the assessment did not show up the apprentices' understanding of trade related material. He changed his role in the new system from teacher or instructor to that of a training coordinator to students who were responsible for their own self paced learning. Consequently, whereas in the past he was able to ensure that the apprentice understood the material, now everything depended on the design of the competency-based system. Nevertheless this was not an easy situation to achieve in a formal programme which had to cater for mixed ability groups of apprentices. Lecturers were of the opinion that the students with low ability or poor motivation would have difficulty passing the course in the new scheme.

**Assessment Quality Interpolation (AQI) inputs on the theme adequacy of assessment.
Lecturers Theme 5.**



Grading mindset

The move from percentage grading to performance to standards was one of the most supported categories. Although lecturers were often tradespersons, and trade tests were commonplace, the notion of levelling down, of producing the double negative of disincentive for high achievers and disadvantage to low achievers were of great concern.

An overriding concern within the lecturer perspective was the tension between the traditional assessment mindset of grading and the competency assessment of performance to a standard. The notion that the grading mentality was being even unconsciously applied was evident in many lecturer responses. Lecturer (L37) was one of several who mentioned that there appeared to be some doubt as to level or standard that the apprentice had to attain. Lecturers worried that competency levels were not clear. This would not be a problem within the competency mindset because in a competency-based scheme the apprentice was either competent or not competent or in other words he or she would pass or fail (hold). However within the college

system of assessment with the traditions of a grading structure, tests were often given percentage points.

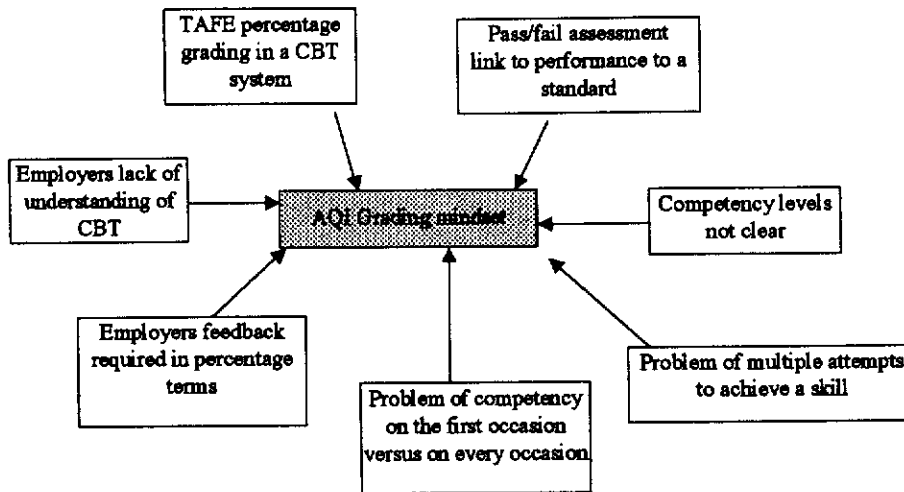
A lecturer mentioned the standard:

Well this is where a lot of people have got some other comments on that is what we're finding is that once students seem to realise now that competency, the lowest level of competency, doesn't matter how good they are or better than that, they're are still only going to get a basic pass and no other further recognition. So it's actually some students who may really get say, in the old system, where you used to have may be subjectively or objectively gave them a percentage, 70, 80 or 90 from what they did, how they did it, the time they did it, now there's actually no difference, they can do it, or they can't and if they can't do it, then they can have another go and then they do it again. So everybody, there's really no recognition now for excellence if you like (L37).

Administrator (A42) also disagreed with the competency-based concept especially the idea that the student was able to have many attempts to achieve a skill. This in his view went against the industrial requirement that work had to be completed within certain time limits. He also had reservations against the pass or fail (hold) assessment of a competency-based scheme because students could not be easily graded from very good to average.

Both employers and apprentices had to be educated in the competency-based method of assessment or to introduce changes which would be acceptable to industry. Employers were putting pressure on colleges to report competency-based results in percentage terms which suggested a lack of understanding of the system. Another problem pointed out, was that a person was deemed competent when the task was completed on the first occasion, but did not include the competency achieved after time and practice. This was an important point as the former indicated the standard on one occasion and the latter on every occasion.

Assessment Quality Interpolation (AQI) inputs on the theme grading mindset.
Lecturers Theme 6.

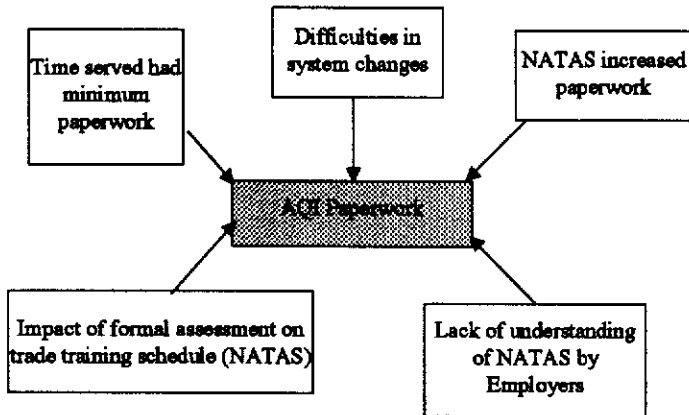


Paperwork The following indicated the difficulties of introducing or changing any apprentice system. Prior to NATAS the apprentices completed a syllabus at college and worked at the company (this was known as time-served training). The introduction of NATAS resulted in a sudden increase in paperwork, and the formal assessment of apprentice training against a trade training schedule which had an impact on the college syllabus.

Administrator (A38) gave his views on NATAS:

I do not believe that system worked, our perception at the time was they were not defined enough, we went along with the experiment and the papers were sent out to companies on the pilot scheme, myself and the staff spent the best part of the week interviewing either personally or by telephone frustrated employers coming in with these forms, what do I tick, how do I tick, what comments do I make and so forth, does not match the syllabus, are not you guys doing your stuff any more, why are we now doing your job and all that sort of thing. (A38, Administrator, Interview).

**Assessment Quality Interpolation (AQI) inputs on the theme paperwork.
Lecturers Theme 7.**



Chapter seven begins with the addition to the monitors and lecturers findings of the employer and employer bodies respondent set (see figure 7).

Chapter 7

Discussed findings

Employers

Figure 7 : emerging categories and issues for key stakeholders

Group	Monitors	Lecturers	Employers	Apprentices
Category ASSESSMENT METHODS & ASSESSMENT	Not positive Issues like time resources and employer awareness	Not positive Process checks in Large classes a concern. Time resources a concern because of multiple tries	Not positive Issues like adequacy of assessment. CBT causing concern due to some differences between curriculum developers and industry	
EXTERNAL ASSESSMENT	Strongly supported Industry focus, experienced tradespersons pastoral role. Cross sector supervision	Employers need advice in choosing modules at TAFE	Employers need help in reducing training variations of apprentices. Self assessment not adequate.	
EMPLOYERS RESPONSIBILITY	Small companies employers not all good assessors. Company v/s industry	Employers used grades Employers frustrated at college paperwork. Too complicated not user friendly Employers/lecturers disagree on pass/fail	Employers not good assessors. Issues like CBT module selection a problem Dislike of pass/fail assessment	
STANDARDS	Worrying, safety an issue, penetration and diversity makes standardisation difficult due to different interpretation	Doubts on standards Variable instead of uniform Reliability as subjective marking by lecturers	Doubts on training standards Variable instead of uniform trade standard Need for qualified assessors	
THEORY	Off-job v On-Job Issues. Grading v/s pass or fail The % problem	Grading mindset and concern at the 100% pass 100% fail mentality.	Grading mindset Pressure on colleges for a % system rather than CBT pass/fail.	
COLLEGE SYSTEM		Administratively more paperwork. Variations between colleges	Variations in college resources in regional areas	
ADMINISTRATION	Inadequate resourcing and funding		Emphasis on documentation completion	

The Employer's Perspective

Introduction.

This group of respondents (nineteen) apart from managers, included representatives from the Department of Training (WA), Group Training Associations and other business associations. The managers represented both large and small industrial concerns and the Group Training Associations covered a large group of apprentices within the State. Therefore, the viewpoints expressed was seen as illustrative of the groups' opinions of the above associations. There was also an element of overlap of the above respondents who represented a cross section in the trade and industry, since this was a research device to group the perspective's in this manner.

Within this limitation the data produced (interview notes in the Appendix B) represented the current thinking within the various trades and training organisations. There were eight emerging themes within this group resulting from the discussions with employers (and employer bodies). These were specific/general training at college/GTAs, adequacy of assessment, employer and TAFE provision, testing, standards, grading mindset, paperwork, and cross-sector supervision. In order that comparisons of responses could be made across a similar range of assessment topics by monitors, lecturers and apprentices, once again a broad selection of responses would be given followed by emergent themes which appeared to be of interest or relevant.

Theory: (AQI) Assessment Quality Interpolation.

The AQI concept was explained in Chapter 5, and the Assessment Quality Interpolation (AQI) was also present in the employer data set and described by means of diagrams in the emerging themes summary section of this Chapter.

Assessment Methods: employers and employer bodies

The category of Assessment Methods now discussed involved two main issues practical assessment and qualified assessors. The following sentiments expressed by a manager represented the view of most other employers and employer bodies. Manager (M59) suggested that the most appropriate methods should be used for

assessment. He was in favour of the student demonstrating skills and knowledge before the assessor to establish competency levels. This was a very practical method of ensuring that standards were being achieved and could be related to actual job functions. The assessors, in his view, should have been experienced tradespeople with an understanding of assessment and the overall apprenticeship scheme. Generally speaking, they were the best-qualified people, to carry out apprentice assessments on-the-job to the trade competency requirements. He also pointed out this activity was not easy but necessary if the industry required quality and skill in its workforce. So it was essential that some capable person in the workshop should have been in charge of apprentice training and assessment and this activity would not be entirely left to the colleges.

NATAS

New Apprenticeship Training and Assessment System (NATAS).

Apprenticeship training in Western Australia is changing from a time served to a competency-based system.

(Definition contained in Glossary of Terms and Phrases p.4).

The monitors were originally established because the self assessment by employers under NATAS had proved a failure. Therefore, as previously mentioned in the monitor respondent group, specially selected tradespeople were employed as monitors and they supervised the employers assessment of apprentices. These employers were given guidelines as to apprentice training and were subjected to a monitor's visit. In hindsight these monitors took their job very seriously because they had an interest in maintaining their trade standards and achieved success, in raising apprentice standards generally, despite limited visits. They also established a close working relationship with employers and an invaluable local knowledge of their respective trades which was difficult to quantify in financial terms. However, when the monitoring system was removed the impact was felt in the trade, and a liaison link and support mechanism to both employers and apprentices was eliminated.

The trade training schedules (NATAS) were part of a State-devised system run by the Office of Industrial Training of Western Australia. These schedules provided a type of

structure of training and assessments both in colleges and the workplace. The tradesman would check the apprentice against the 'schedules' and the Office of Industrial Training would in turn monitor these. However, changes in industrial training in Western Australia progressively reduced the staff of the Office of Industrial Training and this important monitoring function was passed over to industry to complete. Group Training Associations and large employers had tended to fill part of the gap in the assessment process, but in the true sense independent monitoring of apprentices did not now take place in Western Australia. However a Group Training Association (hospitality) for example sent in its own staff to complete assessments in the member companies and therefore saw the value of independent assessment.

Further a Group Training Association (electrical) based its assessments on the trade training schedules (TTS) NATAS (State) with a few additional standards devised by themselves. The people who conducted these visits were trained company assessors with a background in the industry. They went beyond the benchmark criteria established by the trade training schedules and had adapted them to their own needs.

Depending on the area in the trade, different assessment systems were in operation according to a manager (M57) of a Group Training Association. The trade training schedules (NATAS) (State) were used for the cooking, baking, pastry and butchery areas, and modules (National) were in use for the food and beverage aspects. Within industry generally there was a move towards a national training system and some trades were more involved in the system than others at this stage (March, 1995). The national competency-based training system was composed of modules that could be assessed against criteria in both the on-the-job and the off-the-job situation. The intention behind the system was to have a uniform standard and criteria throughout Australia, where workers would be able to move throughout the country with full recognition of skills and qualifications.

Some employers and trades have even at this stage retained some form of NATAS without the external monitoring process. This even with the government encouraging the move to a Modular form of competency-based training. Most employers in some trades did not have a clear understanding of competency-based training. They preferred to maintain the previous system (NATAS) which they understood and

which allowed them to tick off the skills when the apprentice achieved them. Manager (M68) indicated that the standards of apprentice training varied in the plumbing and painting trades, and in some cases four year trained people were not up to the standard expected of a apprentice in the fourth year, as perceived by the trade. This was important as the next step for a fourth year apprentice was to have skilled tradesperson status, and it must be remembered that there was no final test or examination now. It was possible to train apprentices, depending on quality, in less than four years such as in a training centre where it was planned, controlled and organised. The only drawback was their time in the trade was somewhat limited which did have some impact on the workshop experience that every skilled person required to back up skills and knowledge.

Manager (M69) of a Group Training Association pointed out that the assessment of apprentices was done by qualified assessors and they, in fact, worked closely together to establish a common standard. This allowed for a uniform in-house standard but showed that NATAS was open to some interpretation even by qualified assessors. However, this did show the NATAS was capable of producing skilled tradespeople when qualified assessors completed the assessment process. This Group Training Association (electrical) had obviously produced apprentices to the satisfaction of the Office of Industrial Training by continuing with NATAS. This indicated that basically NATAS proved satisfactory when run competently. Most schemes would fail if they were not supervised correctly or lacked adequate finance to operate to planned requirements. However this was not to say that the Modular scheme was necessarily inferior the fault possibly lay in the manner in which it had been operated or assessed.

Employers found when NATAS was replaced by the Modular method monitors were discarded, and the assessment responsibility was passed on to the individual organisations, or contracted out. It was acknowledged that monitors were of a high standard and were given credit for the standards that they maintained within a diverse industry. The financial saving of replacing monitors, who were paid at a minimal rate to cover costs, had appeared, judging by employers' responses, to have resulted in a lowering of trade standards. The financial impact was difficult to estimate because it was spread throughout the industry and also the community:

The assessment criteria that we use is based on the NATAS system which, after viewing many systems, is the best system that we can find that encompasses a wide range of training for our apprentices. Unfortunately the Office of Industrial Training, since the modular system was introduced, has created another sort of assessment system which is utter crap so we go back to the NATAS system for all our apprentices. We monitor them at the end of their first year and half way through their fourth year (M69)// look at what the criteria specifies for that module and get the apprentice to perform that whole module and from there obviously we mark off and assess it off our own records and then transfer it to the trade training schedule (NATAS) (M57)// when we first went to modular there was a problem because there was inappropriate resource material, there was no assessment criteria stipulated in the modules (M60)// certainly there has been a lot of criticism that those standards are not as useful in trying to assess people as they should be (T73)//.

Manager (M69) and his Group Training Association in the electrical trades who were responsible for training large numbers of apprentices appeared to have returned to NATAS after they had found the assessment of the Modular system was not satisfactory.

The Office of Industrial Training in Western Australia generally tried to replace NATAS by the Modular scheme which was designed to be competency-based. Some trades made the change but others retained the old system (NATAS) in some form but without independent monitors. This Group Training Association in the electrical trade obviously monitored the apprentices twice, once at the end of the first year and then part way through the fourth year. This allowed trainers to fill in the training gaps, when they were identified, to ensure a well-rounded apprentice. This Group Training Association paid contractors to train apprentices who also attended TAFE and this was supplemented by in-house training. Consequently, it seemed that these apprentices had their training controlled, assessed and closely supervised by professional staff.

Manager (M69) would have increased the monitoring of apprentices seconded out with contractors in industry. This was an indication of the value of constant monitoring and supervision of apprentices. The assessment criteria would be based on the NATAS model with his organisation providing the monitoring staff. This was a

possible solution for an organisation such as a Group Training Association, but might prove more difficult for a small firm without an external monitoring facility.

Modular

(Definition contained in Glossary of Terms and Phrases p.4).

The Mayer (1992) report (Australian Educational Council 1992, *Putting General Education Together*) introduced the idea of key competencies into apprentice training and assessment. This was because apprenticeships were inclined to be inflexible, with the emphasis on time served rather than training completed. The new regimen resulted in organisations such as the National Metal Modules Curriculum Council developing modules which would be evolved into a national system of standards and competencies. Records of these key competencies were kept in student record books, which in theory moved with the apprentice nationwide if necessary. The assessment was to have been on going and linked to each module. It was to have been conducted by the employer.

The NATAS scheme in view of financial restrictions, was only expected to produce a minimum of two visits to apprentices during the four year apprenticeship. This naturally produced difficulties and so a decision was taken to move to self-assessment by employers. Consequently as explained by (T67) the Modular system dispensed with external monitoring when it replaced NATAS.

Employers were aware of the necessity of the competency requirement in trade qualifications as indicated by opinions of the respondents below. Manager (M60) stated that the electrical apprentices were expected to complete twenty-four modules which included eighty learning outcomes to achieve their certificate of trade studies and their eligibility for an electrical licence. An apprentice logbook was in use to identify competencies required to achieve the above:

Well either observation which is they see what you do basically, verbal questions and sometimes a test situation (M57)// The methods on how it could be done essentially the best method is to give the person the task and let them demonstrate their skill and or knowledge. If that in some scenarios is

impossible to do then another method may be a questionnaire or may be another demonstration or something like that method. (M64)// the best way of assessing most things is by observation over a period of time in actual conditions (M65)// is a method of show me what you can do and actually do it and by doing that you are also conducting some training at the same time. (M59)//.

A manager (M64) believed the best method of assessment was observation of task completion by an apprentice. The above was the perfect situation when an apprentice could be supervised closely but it was more difficult when large groups were involved. Assessment was about the student demonstrating their skills and knowledge and this was best done when a task or job was completed because of the comprehensive range of skills and knowledge displayed. However, this was not to say that other methods could not be used or did not have value in other situations such as theoretical knowledge assessment.

Many other managers shared the opinion of executive officer (M65) who believed that observation over a period of time was the best method to adopt but even this did not necessarily tell the full story. Assessment in a TAFE (Technical and Further Education) was quite unlike a busy cafe where the conditions were quite different with the product having to be produced quickly. So two types of assessment were under discussion and so under these conditions the same apprentice could end up with conflicting results. Executive officer (M65) made the point that whatever assessment was used it must be the best predictor of the demonstrated skills and competencies with the available resources. This emphasised the critical importance of the correct assessment method for each skill to ensure that competency was achieved. When in doubt the assessment in use had to relate to the expected job competency as much as possible in a testing situation.

Furthermore, there were unsolved problems associated with ineffective assessment and the implementation of the curriculum. A training consultant (T73) believed that the assessment methods used in the competency-based scheme had been ineffective. The competency standard had not been capable of being assessed in relation to the curriculum. The written standard and the competency-based scheme had not been fully evaluated, to see if they related to the expected apprentice skills. A general

opinion among employers was the existing competency-based scheme had not been thought through fully so as to be made compatible with workshop training.

Manager (M59) had reservations about whether the assessment process was good enough. He was of the opinion that it was, if the relevant procedure was followed. This was not often the case. The emphasis was placed on the college or off-the-job training and attainment of a number of modules was accepted as competency achievement. Industry was inclined to rely on colleges to carry out the formal training even though many had limited resources for practical training. This manager was concerned that this had an impact on skills levels in the trade. Training skilled people took time and was an expensive process but done properly it produced quality tradespeople. Therefore, it was important to get the training and assessment system capable of producing the expected results. Some apprentices had been poorly trained and his organisation had to retrain some in basic skills.

The Office of Industrial Training in Western Australia was being dismantled and training assessment was passed over to industry. A training officer (T61) said that apprentice training was going through a period of change both at State and National level for the electrical trades. Also, all the TAFE colleges had become autonomous in Western Australia, which created difficulties for uniform assessment to take place. This produced a variation in assessment standards, which was of major concern to this trade, and impacted on both the off-the-job and the on-the-job areas of assessment. The Office of Industrial Training's assessment function was now performed by selected private contractors which resulted in varying standards. Group Training Associations were a solution to the problems generated by these changes and industry was increasingly moved in this direction to ensure that apprentice training was up to the required standard.

A training consultant (T67) believed that private training providers with training centres, where trainers worked on-the-job with the apprentices was the way forward for apprenticeships. The employers were then totally responsible for assessment. This was possibly a perfect solution for large organisations, but it was still possible for smaller concerns to have the same benefits if they operated with Group Training Associations, who had their own training centres. This would have increased the

professional assessment completed at the on-the-job level, which was an improvement. Moreover, for such a scheme to have been effective industry would have had to be involved in specialised training centre programmes. Also this type of scheme would have needed to be operated with fully trained assessors with an independent role and not subjected to organisational pressures. Nevertheless, this system would be inclined to operate in training terms rather than the broader education and training balance that was achieved at TAFE (Technical and Further Education).

Industry was the first to know if there was any shortfalls in apprentice training and so it was important to listen to the voice of representative bodies so that effective action to address the problems indicated was taken. Group Training Associations had the advantage that industry could control the type of training its apprentices received and also had the flexibility for specialist types of apprentices to be catered for in a very diverse industry. The data sent a clear message that apprentice training needed to be controlled and supervised, especially in the Modular type schemes, which had increased the amount of assessments required for apprenticeships.

The following examples of new contactors (GTAs) responsible for monitoring, showed the variations in procedure in use. The Group Training Associations, because they were training specialists, had been involved in disputes as to lines of demarcation between training, industrial relations and licensing which sometimes were not very clear. The status of skilled persons and the standard of training of the apprentices, were directly related and these issues had been put under pressure by the recent changes in the training system which may or may not have been producing the expected product. This particular association had not been satisfied with the government system in place, so had established their own skill centre to train to their training requirements. They had now been approved to do all the training for electrical contract licences in Western Australia and supervised some two hundred apprentices. Consequently, this organisation had taken responsibility for trade training of a particular industry which was the solution to a difficult training problem, that of establishing a uniform trade standard.

Manager (M57) of a Group Training Association in the hospitality industry used both the trade training schedules NATAS and Modular scheme depending on the specific area of the trade. However, standards and criteria varied between these two schemes. Because of this the Group Training Association had its own assessment and recording procedures that was then transferred to the relevant scheme. The national modules, for example, were designed with the emphasis on skills and knowledge achievement without taking into consideration the time involved which was crucial in business terms

There was also the difficulty of the diverse nature of the hospitality industry where the apprentices were able to work in hospitals, cafes, restaurants, bistros or hotels where they learnt different skills. Group Training Associations got over this problem by rotating apprentices around different establishments so ensured they were capable of operating in any part of the trade. However, smaller companies outside these groups were inclined to train their apprentices for four years on site, which meant that their skills were limited to that particular area. This showed the difficulty of establishing uniform standards in a trade because although the training structure appeared the same, the individual work experience of the apprentices was widely different.

Manager (M71) a representative of a large company found that new methods had to be adopted to keep up with modern technology and considered it an advantage having specialist staff to control the apprentice assessment system. Obviously this organisation had devised its own grading system for on-the-job training to monitor the apprentices training effectiveness over a period. They made the point to ensure continuity, they installed the company assessor as the supervisor in charge of the apprentice, but this process was monitored by their human resource officer who interviewed the apprentice on a regular basis to ensure training was completed. This organisation realised that assessments needed to be reliable and consistent to achieve results. However it was important to point out this was a large establishment but

smaller firms would not necessarily have the same advantages unless they were members of a Group Training Association:

What's happening now is that the Group Training Schemes are taking over where a lot of the employers have dropped out of the training system. With the change of Government policy where the Building Management Authority and the Water Board and other organisations like that in the past have trained apprentices in significant numbers, and they were naturally sent out to industry or they left and went out to industry, (M60)// so we're seeing a greater swing away from the traditional training styles and more into Group Scheme style of training (T61)// what they think they should be doing is either individually if they are large enough or in groups using group training schemes, take responsibility as an enterprise for a particular apprentice (T73)//.

Most apprentice training was driven by the larger organisations in a particular industry because they usually had established training departments that ran structured training programmes which mostly produced a high quality product. Manager (M60) from the electrical trade found that the apprentice training situation had changed in Western Australia. Some large organisations that produced numerous apprentices had moved out of this activity. They in fact trained most of the electrical/electronic apprentices in the local industry and so now skill shortages were developing in this area. Group Training Associations had been forced to fill this gap because individual small firms were unable to produce the numbers lost and the quality required. The electrical trade had identified a skills shortage situation and had been forced to find solutions to resolve the problem. So a reduction in this activity was a serious blow to any industry.

Assessment: employers and employer bodies

Assessment

Assessment is the process of collecting evidence and making judgements on the nature and extent of progress towards the performance requirements set out in a standard, or a learning outcome, and, at the appropriate point, making the judgement as to whether competency has been achieved.

Another way of describing assessment within competency-based approaches to learning is to say it is criterion referenced. This means that it measures a person's performance or identifies their achievement in relation to criteria and not in relation to the performance of other learners or trainees. *Framework for the Implementation of a Competency-based Vocational Education and Training System*. Vocational Education, Employment and Training Advisory Committee (VEETAC) February, (1993).

Industry has found that it was very difficult to develop an assessment system, especially in a reform situation where a number of vested interests were involved. Also, because of the two views on the assessment process, either to assess the skill or the task, it had produced difficulties in establishing learning outcomes that achieved the desired objectives of both industry and the training providers. The answer was relatively simple. A system that incorporated both viewpoints had to be designed. This then became a design problem, not an assessment problem. The training and assessment of apprentices was a matter concerned with skills and knowledge and not a political agenda for governments, unions and industry.

A training consultant (T73) suggested that the reform process had major difficulties to overcome especially the change of the assessment approach from classroom based paper and pencil activity to a more practical competency-based system. The former had been in place for some time and was backed up by statistical information as to its effectiveness. The latter on the other hand looked at what people could do and could be more subjective, but there was no ready information available to measure success. The employers had been asked to take on the assessment responsibilities to which they were not properly trained, and often had other major priorities. Training providers were sometimes unfamiliar with the workshop level of assessment and as such should not have been responsible for designing such schemes.

These issues indicated there were problems with the workplace assessment situation, training consultant (T73) continued that the reforms resulted in rather mixed results. Employers were usually very busy people and lacked time for what they considered non-essential items, therefore any process had to be designed to be user friendly and relatively quick to be completed. The solution was to provide the employers with a list of related jobs for the apprentices to complete in their relevant training year. These jobs had to be designed to incorporate the various skills necessary and when the trade standards were achieved the apprentices could have been signed off on a continuous basis. A final and annual independent assessment would have provided the quality control function, and the incorporated skills in the various jobs would have been monitored by the training providers. This would have allowed the training providers to teach and assess skills linked to relevant jobs in a training environment. Assessment

could be conducted at the off-the-job, micro or individual skill level and on-the-job, with the macro or task level.

The following training consultant reflected the views previously discussed in the lecturers section of the research.

Respondent (T73) mentioned that the recent changes to a competency-based training programme (National) had problems because the training providers got involved with the process using the old methods and curriculum. This suggested that the new agenda was introduced rather quickly with people not trained to operate the system prior to implementation. Some courses were not competency-based but assessed using competency-based assessment methods. This caused confusion among the training providers and some of the training results reflected this situation. Industry had also suggested that the standards of apprentice training had fallen.

Assessment Validity: employers and employer bodies

Competency standards assessments are valid when they assess what they claim to assess. Validity of assessment is achieved when:

- * assessors are fully aware of what is to be assessed, as indicated by the units of competency, learning outcomes and clearly defined performance criteria.
- * evidence is collected from activities and tasks that can be clearly related to the unit of competency or learning outcomes specified for the course or training program
- * evidence demonstrates that performance criteria have been met
evidence is sufficient.

Source: Framework for the implementation of a competency-based Vocational Education and Training System. Vocational Education, Employment and Training advisory Committee (VEETEC) February 1993, p.15)

A problem identified in industry related to the variation in applied standards and different levels of assessment in operation with apprenticeships. (T58) a field consultant made mention of the variety of assessment methods in use for apprentice training in the hospitality industry. However, he was mainly concerned with the accuracy of assessment and its relationship to recognised industry standards. Consequently, many methods, depending on the situation, could have been used

effectively for assessment but these would have had to apply directly to the expected trade standards. A common sentiment expressed was that more work had to be done in integrating the assessment process both off-the-job and on-the-job. A training consultant (T73) was concerned that the classroom assessment and the workplace assessment had not been integrated well. Colleges had been responsible for the theoretical training and companies had been left with the practical training. However, the transfer of skills from these different environments were not fully understood, so what in fact happened was that each body signed the apprentice records when they considered the apprentice had reached the required standard.

Project manager (M75) suggested that assessment methods varied throughout the system in the metal trades. It was apparent that some colleges were better equipped than others, as those in the regional areas often lacked resources. The assessment methods varied from a computer assessment approach to more traditional methods, which had not changed over recent years. Generally speaking the theoretical area was covered by paper-based tests and the practical by lecturers examining the work against the assessment criteria set out in the module descriptive. However, he revealed that in the Modular scheme interest had been taken by colleges in both the off-the-job and the on-the-job components of the scheme. Employers were informed of students who had not completed the learning outcomes at colleges. The employer was then asked to complete the assessment on his or her own apprentice. Colleges only sent out lecturers to verify some on-the-job assessments, but in the main the decision was left to the employer without any further action taken. This was satisfactory and practical in most cases but the obvious loopholes were there for anyone to circumvent the systems' standards. It was difficult to ensure the same trade standards across the board if such a system was in use. The argument that anything else would be too expensive did not wash, either a uniform standard was there or not. It was wrong to suggest that everyone had been assessed to the same trade standards when the assessment systems varied to this extent:

First of all our assessment does need to be done but the concern I do have is that the controls on it, the uniformity of it, how it's sort of relates to what they actually need to do at the end of the day, that all these things match up and I'm not sure that we're actually doing assessment for the right purposes at the

moment, I have a view that there's a lot of assessment being done to fill in pieces of paper (M59)// you have to have a reliable source as far as the assessment is concerned and it's got to be consistent (M71)// The uniform assessment comes through the Monitors (T67)// despite the rigidity of the performance criteria and learning outcomes, how valid it is really depends on how particular lecturers carry out the assessments (M75)//.

Many others in the metal trades expressed the same concern as (M59) over the uniformity of the assessment process and its relevance to the actual workshop activities. Manager (M59) was also under the impression that the assessment did not relate to the training requirements. The emphasis was on documentation completion rather than the real purpose the identification of competency (Paperwork emerging theme). However, he emphasised the crucial importance of assessment taking place in any apprentice system which was not easy to accomplish:

I think that's the right way to go in terms of if you look at how it is written and what people are trying to achieve and I think that's the right way to go you say these are the standards we want, this is the sort of skills that we want and develop curriculum from that and I certainly think it is the way to go. (M59)// I think industry says we assess to find out whether someone can do a particular task not necessarily whether they have a particular skill (T73)// well that's defined by what we're assessing, what skill and or knowledge that you are saying that the person has or doesn't have (M64)//.

Manager (M59) was in favour of a competency-based training scheme with its ability to establish standards and place a structure on apprentice training. However it was important that any scheme ran correctly, backed up with adequate financial resources, equipment, fully trained staff and some form of effective quality control.

Project manager (M75) stated that the modules in use had specific criteria and learning outcomes and colleges were expected to meet these requirements with little room for manoeuvre. They were also working within limited time constraints to achieve the objectives and so were governed by the scheme's requirements. The Modular scheme was introduced without national standards that had then only recently been established. This seemed to be a strange state of affairs or indicated that the scheme was established hurriedly. This was the situation in the metal trades which

was of obvious concern even though the intention was to improve existing apprentice training.

Project manager (M75) continued, he did not believe that the system was good enough despite the performance criteria and the learning outcomes. The reason he gave was that the lecturers' assessments varied across the board. This situation occurred despite these lecturers being experienced in TAFE (Technical and Further Education) and so indicated that the systems defined performance criteria and learning outcomes were not in tune with the trades requirements in regard to apprentice training. An interesting development was the use of lecturers as industry liaison officers, a role that was last filled in the previous NATAS scheme by the monitors. It was found necessary to carry out this function to give some consistency to the apprentice training. Project manager (M75) admitted that validity of the system was unknown and suggested there was a need for some form of quality control to ensure consistency of assessment and training.

Assessment Reliability: employers and employer bodies

Reliable assessment uses methods and procedures which engender confidence that competency standards and their levels are interpreted and applied consistently from learner to learner and context to context. Without reliable assessments there can be no comparability of credentials. High quality competency standards are fundamental to reliability. *Framework for the implementation of a competency-based Vocational Education and Training System*, Vocational Education, Employment and Training advisory Committee (VEETEC) February 1993, p.16)

(M65) an executive officer suggested the need for a criterion for assessment to prevent an assessment being subjective. Although in any assessment there would always be an element of subjectivity depending on the individual assessor's interpretation of the assessment criteria. However, any evaluation system should have reduced subjectivity to the lowest possible factor. The Australian Modular system (National) was set up in a comprehensive manner and included a module descriptive which mentioned title, purpose, duration, assessment method, learning outcomes, content section, assessment criteria and conditions for the assessment and teaching to take place. This executive officer pointed out that it was important that the

assessment methods, assessment criteria and learning outcomes were linked. The reason for this was that the wrong assessment method linked to a learning outcome would not have produced the expected results. Obviously if the wrong assessment criteria was also used the final standard of the apprentices would be in doubt. The amount of time given over to assessment in the average module was also of some interest, as the time balance had to be correct between learning and assessment. The assessment was also supposed to have achieved its objective, and without validity and reliability this was not possible. Executive officer (M65) revealed that the methods of teaching needed to be appropriate to produce the behavioural change that was expected. Assessment had to be capable of indicating if this was taking place, and all had to be based on essential criteria. Clear specification as to the relevant standard linked to a learning outcome at every stage of the training process was necessary. He mentioned he was not in favour of the piecemeal method of assessment, or testing learning outcomes, or even modules in isolation, but rather what he called holistic assessment or testing related groups of learning outcomes or modules together.

There was a general need to test an overall competency in a practical manner, based on the trade standard but also directly influenced by the job requirement. (M65) an executive officer expanded his argument on holistic assessment and the fact that a capstone assessment also identified the testing of contingency skills in the workplace. The final test had to be designed to test the apprentices skills and knowledge to trade standards and had to include problem solving in a workshop type situations.

Furthermore, executive officer (M65) stated some of the difficulties of setting up an assessment system to achieve the objective, which was in this case valid apprentice training. He suggested testing the procedure in different colleges to establish if the results were similar or even by testing the system in real life conditions. This was a sensible suggestion and the testing of such systems on the workshop floor were an essential requirement prior to implementation. Skilled tradesmen should have been involved in the assessment process because these tradespeople were best qualified to judge the assessment system and evaluate trade standards:

The reason or purpose for assessment. Well there's a couple of things with assessment that I can make clear from the onset and that is where the assessment is

done and who does and how thoroughly. (M59)// is to give ourselves credibility so that when we say a person can do something then you've got to have the confidence that they can do that (M64)// is because you want to find out if something's happening the way that it should happen (M65)// so we can give ongoing feedback to the students themselves and also to the lecturers to know how far their teaching's progressing (M75)//.

Manager (M59) of a (training centre) brought up several important points on apprentice assessments. The assessment location and facilities, the assessors qualifications and experience, and what methods and standards were used, in his opinion these were vital for ensuring success at the highest possible level.

Flexibility/Fairness: employers and employer bodies

Assessment practices endorsed for the implementation of CBT must be flexible if they are to be appropriate to the range of delivery modes, sites of delivery and needs of learners. There is no single approach or set of approaches to the assessment of performance in a competency-based system. Assessment is fair if it does not disadvantage particular learners. If learners understand clearly what is expected of them and what form assessment will take, and if the assessment places all learners on equal terms, and the assessment procedure supports their learning, then the assessment should be fair.

Source: *Framework for the implementation of a competency-based Vocational Education and Training System*, Vocational Education, Employment and Training advisory Committee (VEETEC) February 1993, p.17)

The following were examples of the grading mindset emerging theme which reflected findings in previous groups of respondents.

Manager (M68) in the plumbing and painting trades admitted that he used both NATAS (State) and a National competency-based scheme. Also depending on which college provided the training, apprentices were graded pass/fail (hold), or fifty percent, sixty percent or seventy percent. This indicated that there was an element of confusion in assessment with the competency-based training scheme. Some colleges had been forced, due to pressure from industry, to retain a percentage marking scheme, with a competency-based course. A competency-based assessment should have only been indicated by a pass or fail (hold) situation. However, an apprentice training course covered by a syllabus had been graded in percentage terms because

completion of a proportion of the course had been considered adequate to achieve a pass or higher standard.

Manager (M64) was under the impression that standards varied within the trade and was not confident that the competency-based system (National) was better than the previous method. He believed the teacher group method, although more subjective, provided more incentive for the students to achieve results above the norm. The marking system encouraged the high achiever because of the superior grades the student could achieve beyond the pass mark. The competency-based scheme, with its pass or hold (fail) system, did not, in his view, appear to reward the high achiever. So all students achieved a pass grade and the group standard appeared to have fallen because of a lack of incentive for high standards to be achieved.

The competency-based scheme (National) was based on the achievement of the trade standard and not on any higher or advanced standards. Nevertheless, for this scheme to have worked this standard had to be set at the right level. The above grading problem would have been easily solved by a redesign of reporting system to employers which would include other subjective criteria, like attitude to work, provided by lecturers in the form of a report card. The other area of concern was the actual process of approving competency in the form of a checklist on work provided by the student that was open to abuse. He was not therefore, confident about the standards achieved in the competency-based system. This was interesting but meant that the competency-based system was not necessarily at fault. It meant that the assessment system was not adequate to provide the expected results. He pointed out, however, that the competency-based system mainly involved training, whereas previously it had been more education based.

Manager (M60) in the electrical/electronic trade revealed that his organisation had put together a course which was Modular in structure with the colleges providing the assessment. However although this appeared to have been competency-based training, the minimum level to pass the module was completion of seventy percent of the learning outcomes. The assessment criteria and procedures were structured around this percentage benchmark. The immediate concern that came to mind was which of the learning outcomes were considered essential or merely desirable. The manager had not made it clear that this distinction existed and so it was assumed on face value that

seventy percent of any of the learning outcomes rated a pass, this was an issue of some concern. Theoretically the thirty-percent failure rate of learning outcomes included skills and knowledge of some importance, especially in certain trades. The manager mentioned that a variety of methods of assessment were in use such as interviews, observation, and examinations using multi-choice, true/false or written types of answers. This indicated a comprehensive assessment system in use for the electronic servicing trade with a seventy-percent pass rate for the Modular system.

Training officer (T61) had reservations about the competency-based assessment system (National) with its pass or hold marking system. Industry was interested in training excellence and the motivation of apprentices so that they achieved the highest possible standard. They were interested in the student's achievements beyond the recognised standard and competency-based training and assessment did not provide this information. The whole of the competency-based system (National) was being undermined by this inability to provide this information and colleges had been placed under considerable pressure to introduce some form of percentage system that the trade could understand. This resulted in some cases of competency-based schemes with percentage marking reducing training standards. So that a percentage mark was given instead of a pass, for a partial competence achievement, which did not satisfy industry if they fully understood the significance of the marking system.

Changes within these very different types of apprentice training were part of the problem, and all concerned found the changeover difficult to understand and operate.

An example had been the correct selection of modules for each apprentice:

we feel that another eight modules on top would be necessary to bring these students to a skill level at what we would have of apprentices under the old system (A74)// we can't deliver 400 modules so we are trying to stream in one hand and balance the books if you like to meet employer needs (M75)// The other thing that we've been involved with is where we've identified the units of competence, seven in particular, we've also identified 20 modules which need to be delivered in each state for National consistency (M60)//

The electrical industry example had identified specific modules for their trade and also other related modules. This allowed for a national apprenticeship scheme that would enable tradesmen to be qualified to work anywhere in Australia. This was a major step

forward from a situation where each State defined its own training and standards. It was important to point out as mentioned before that there were numerous modules out of which about twenty-four modules were covered by the apprentice training programme. Therefore, the linking of particular modules to a defined skilled trade was of critical importance to establish a trade qualification. Obviously other modules would be taken at a later stage if there was a requirement both for the individual or the organisation.

Furthermore, manager (M60) found that the essential and additional skills, and knowledge, had been identified for on-the-job training and these had been entered into a computer system to manage the apprentice training activity. The on-the-job assessment had been a weak area in the evaluation of apprentice training because of the problems associated with a busy workshop where skilled staff had little time or inclination for paperwork. Most assessments were inclined to be subjective, especially in the smaller organisations with the paperwork completed at a later stage.

Flexibility in the assessment process was essential. Apprentice training could be completed on-the-job or off-the-job or what was more common a combination of both methods. Some situations lent themselves to different types of assessment so suitable methods had to be devised depending on the circumstances so long as they were effective and produced the results required by the trade. Training officer (T61), for example, a training officer from the electrical trade was of the opinion that the perfect system of assessment would be a practical demonstration for the on-the-job component and some form of graded assessment for off-the-job or theoretical training.

Many people in industry were not happy with the existing assessment situation.

Manager (M72) and others in the hairdressing trade believed that the existing assessment system had been a failure. Both the colleges and the employers were reluctant to fail students who produced low standards in their final years. This meant that these individuals were entering the trade as skilled tradespeople, often without the required competencies. This manager's solution to the problem of low self-assessment was to have the assessments conducted by totally impartial independent

assessors. They also needed to have independent funding arrangements so that they could not be unfairly influenced.

Some employers were optimistic and believed the new system properly supervised, would be an improvement on the old situation. Manager (M60) from the electrical trade was under the impression that the new course would eventually get back to the level of the previous standard, implying that the new course had been modified because it was below the trades' requirements for apprentice training. The trade thought the solution depended on standardising the assessment procedures, with a benchmark pass mark of seventy percent, on what was assumed to have been a competency-based training course. The only area of concern was the linking of a percentage pass to a competency-based scheme which was not designed for this type of assessment.

Employers identified skills shortages about this time. A training officer (T61) revealed that there was a severe labour shortage in the electrical trade that had increased due to industrial expansion. This was an indication of a lack of apprentice training by this trade in recent years. Skilled people could not be produced at a moment's notice and the short-term answer of bringing in skilled people from overseas was not an ideal solution.

Manager (M68) was not sure the standards were defined precisely enough for interpretation by the employers in the plumbing and painting trades. He believed that there was plenty of room for personal interpretation in the assessment process. This meant that the benchmark standard used would vary according to each employer's perceptions and a uniform trade standard would be difficult to achieve. The employers were not happy with the TAFE (Technical and Further Education) assessment which only informed them of the pass or fail assessment of their particular apprentice. They preferred the previous percentage assessment because it was a greater indicator of apprentice success.

External Assessment: employer and employer bodies

NATAS.(ASSESSMENT).

(i) Work Place

NATAS is based upon the apprentice being trained to perform skills to a recognised industry standard; that of a newly qualified tradesperson. The assessment by the on and off-the-job trainer is criterion referenced and the apprentice is assessed as having achieved the skills or needing further training /remediation. The Trade Training Schedules list all the tasks and skills that the apprentice is required to have achieved in order to qualify for their trade certificate.

(ii) College.

During the college training program, the apprentice is instructed and assessed in the college listed skills (essential and additional) of the Trade Training Schedule." *Australian New Apprenticeship Training and Assessment System (NATAS). Commonwealth / State Joint Project Final Report. WA Department of Employment and Training, APRIL (1991, p.24)*

The Office of Industrial Training in Western Australia as previously mentioned, had under NATAS, a monitoring role with regard to apprentice training. However, on the introduction of the Modular competency-based training scheme, this role was discarded and the office reorganised with the resultant loss of expertise in this area. The responsibility for assessment had been placed on companies and other training providers and there was no external assessment in operation. Consequently every training provider produced apprentices, who were expected to have the same standard as everyone else in the industry.

The research has presented some narrative which will be depicted later in a more aggregated form. This has been done to portray the rich data aspect of the findings.

The general trade required that training and assessment standards did not vary between individual companies, otherwise apprentice instruction resulted in a wide variation of different standards, which put in doubt the status of a skilled tradesperson.

Tradesman (T66) from the electrical trade was in favour of external assessment to ensure that employers were training their apprentices properly. However, it was important that these independent assessors were specially selected from tradesmen and trained in assessment methods. These assessors were expected to operate at uniform standards so that all apprentices were trained to the same levels. The easiest method to ensure competent apprentice training was carried out was to have external monitoring in place.

Manager (M57) reflecting the views of industry felt there was a requirement for external assessment said:

In the ideal world it would great to have a flexible system in place that recognises skills that are actually there that can be policed and I think that's the main thing that I'm concerned about there's nobody policing the system.(M57)// but if you get qualified people that have got a pretty firm hold on the shop floor and know what is required and view people actually doing the tasks they are required to do in the workplace (M59)// I believe that the monitors need to be trained people that monitor and ensure that these standards are adhered to (T66)//.

The above managers did not believe that there was adequate unvaried assessment in operation and many believed he had a serious point.

A project managers' (M75) solution to the problem of obtaining unvaried assessment was to select and establish registered assessors and also implement training programmes for on-the-job assessors. His main point was the need to have continuity to obtain reliability and validity. However, he was aware that this was a long process and would take time to establish. This also suggested that the monitors under NATAS were of value to the trade because they provided this function of uniform assessment. The other problem in this trade was that eighty percent of metal trades apprentice employers in Western Australia were small companies many with only one apprentice each. So there was need for some form of independent assessment to get valid and reliable results if referring to an overall trade standard.

Furthermore, project manager (M75) continued that the Metals Consortium had conducted some research on the views of employers on apprentice training in Western

Australia. They found that it was perceived that the National Agenda on apprentice training had been driven by the large companies. The smaller employer was not involved and furthermore did not understand the new system. They also did not have time to get involved because of other business priorities. Also the smaller employers were locked into the past and preferred the previous apprenticeship system which they understood. They were not sure of the competency-based learning outcomes and what they would produce. This showed the difficulties of changing a system and that it often took time for the introduction to take place successfully. The TAFE (Technical and Further Education) courses had difficulties in implementing the change of apprentice training schemes. Employers in the 'metal trades' also were not comfortable with the pass or hold (fail) marking system of the competency-based scheme (National). They required more feedback on their apprentices in such areas as learning outcomes, general abilities, work attitudes and future potential as tradespersons. They needed this information as independent confirmation of their own assessment of the students work abilities.

Tradesman (T66) believed assessment was important to maintain standards within industry. He also mentioned the need for a set criteria so that assessment would be as uniform as possible. These assessments had to be both internal and external to maintain standards within the trade. This was a very clear description of what the assessment process should be to get relevant results. Some employers needed to be kept up to the mark in assessment terms and that was why there was a requirement for external assessment.

The following example represented the situation found in small companies.

A proprietor (E62) believed the reason for assessment was to ensure that the apprentice was being trained properly, getting the right information and benefiting from the training process. The purpose was in fact to demonstrate the effectiveness of the training received by the apprentice. Previously assessed apprentices used a check list and a question and answer method of assessment. This proprietor did not use a trade test because he did not want the apprentice taken off the job. However, if he had any doubts about an apprentice's ability they could always be given a task to be completed under supervision to check on any skill shortfalls. This was probably how most apprentices were assessed in the on-the-job situation because apprentices were

often a valuable resource, especially in small companies. He mentioned that most employers expected TAFE (Technical and Further Education) to provide the theoretical knowledge while they provide practical experience and in his opinion there was no real training taking place on the work site. The on-the-job training and assessment had proved to be a weak area in training terms and there were major variations in the formal training given to apprentices. The only safeguard in the past was the external monitoring conducted under NATAS but this was discarded under the Modular scheme, when it replaced NATAS in most trade areas.

A manager (M72) in the hairdressing trade (comprised of small concerns) made the point that the assessment procedure should have been validated by the industry, which meant some form of independent trade assessment rather than company self-assessment. The standards in use had to be trade standards and not an individual company's interpretation of the trade levels required. Adequate funding by industry or government or both, only, could have ensured a reliable system. Otherwise the system was starved of adequate resources for effective operations.

Manager (M72) continued that an independent assessor selected by each industry was the way to establish the fairest method of assessment. These assessors only loyalty should be to their individual trades, and it was important that they had to be respected skilled tradespeople with an ability to assess others. Industry was the body that set its own trade standards and was the organisation that played the monitoring role. Assessment procedures were developed by other organisations such as colleges or training providers but these had to be approved by the relevant industry. The bottom line was to produce skilled tradespeople and that objective was the corner stone of any apprentice training and assessment system.

A training consultant (T67) observed that the assessment criteria was developed under the 'key competencies' and displayed in the record books for both the on-the-job and off-the-job training. He pointed out that this would provide for continuous assessment rather than a final assessment as in the previous scheme. In theory, this seemed a far better method for assessing apprentices. This meant self assessment by

the employer for the most part of the training without the safety net of a final test or external monitoring. So the main responsibility fell on the employer and his interpretation of the scheme, and often resulted in a wide variation of standards and depth of training and assessment, depending on the employers individual priorities even if these differed from that of the trade.

Standards: employers and employer bodies

Competency-based training needed to be developed from the workshop level because it was essentially a practical application of skills. The required knowledge to back up these skills should have been developed as a second priority. In other words this should have been a bottom up approach rather than a scheme devised first and fitted to the practical situation.

Added to individual comments a more aggregated selection of interview extracts was presented below. The device // has been used to separate comments.

(T73) a training consultant said the move towards competency-based training in Australia now covered most of the workforce. The perception behind this training was the identification and training towards practical skills in the workplace. However he suggested that this had been a difficult task to accomplish and had taken a considerable time. This indicated the complexity and diversity of trades within industries whose training needs could not be solved by broad band training solutions. The competency-based training (National) appeared logical and effective on paper but had not translated easily to the workplace level. This suggested some form of dysfunction with the scheme and the workshop function (Paperwork emerging theme).

Assessment must be relevant to a standard. Within this industry, hospitality, we have several standards, five star, four star, three star so to appraise the skills level of any individual, assessment is important. (T58)// That also then becomes the issue of what you're assessing against. Industry says you're assessing against the standards we've written which everyone agrees are difficult to assess against. Curriculum developers or training providers say no you're are really assessing people against the learning outcomes which form the curriculum so although those two are supposed to be related the relationship is unclear (T73)// The idea that we have a theory and you fit skills or training to match the theory is, well it ends with the end result that we're

not getting people trained (T63)//it's all industry driven but I don't really think it is, there are no checks and measures on all that stuff (M59)// the fact that we're talking National common core curriculum and everything being the same across all States when it's not, it's blatantly not. There's variation in module lay out, delivery techniques, there's variations in courses that are being run and still on a State by State basis,(M57)//.

Industry developed standards for assessment which did not exactly fit the assessment scheme. The reason was that the curriculum developers had designed the scheme to assess learning outcomes which formed the curriculum. The relationship between the standards and the learning outcomes were not clear and were sometimes incorrect. Obviously the scheme had been designed with different expectations of the assessment process by industry and the curriculum developers. The assessment scheme should have been designed to fit the standards provided by industry and this did not appear to have been the case. The training and assessment scheme appeared cobbled together rather than specifically designed for the task in hand.

The hospitality industry, apart from being diverse, operated at a variety of recognised standards. This was important in training terms because staffs had to perform to higher standards and this was reflected in their job training. Therefore the skill levels of apprentices should have been higher at these establishments and a field consultant saw assessment in quality control terms to ensure that relevant standard was reached. Australia, like many other nations, was in the process of establishing apprentice training schemes to a common national standard. However, there was a long way to go at this stage. There was also variation in the modules and module operation on a State by State basis, which also effected standards in the trade certificates.

Manager (M59) of a large company did not believe that apprentices were being trained to the correct standard required by industry. His reasons were the lack of consultation with the right people in industry and the lack of an effective assessment system to ensure quality control. The key issue was the final standard that the apprentices achieved after four years of training. This, in other words, was the entry standard of every skilled tradesperson which had to be at a constant recognised level of skill, knowledge and ability. The easiest way to ensure a uniform standard was to

establish a final trade test prior to skilled trade status, as this would identify any shortfalls in standards.

A field consultant (T58) believed in the value of high standards of training of apprentices. This introduced the discussion of a minimum standard in apprentice training or in other words what was considered to be the competency standard of a particular trade. Should the competency standard have been the minimum standard or should a good trade standard have been the benchmark level required by apprentices? Training standards tended to fall unless there was reinforcement in the workplace, and so there was value in training to the highest standard possible in the first instance.

Tradesman (T66) from the electrical trade believed that apprentices should have been trained to a recognised trade standard rather than to specific areas of the industry. This was necessary because with a basic uniform standard as a base the apprentices were in a far better position to specialise later in their careers in another area. This would avoid a skills fragmented industry being the result.

A project manager (M75) believed that the national standards had created some improvements in apprentice training and assessment because now at least everyone was focused on the same criteria and generally worked with the same resources. Also industry had been more involved in the development of the descriptives which was an advantage, although some TAFE people would not agree that the balance between industry and the training providers was correct. However, he suggested that the training path was moving in the right direction and in ten years time should be much improved. This indicated one person's view of the timescale needed for effective change in this regard.

The following reflected the view that was addressed in the lecturers group. (T63) was of the opinion that the overall standard of training had fallen in Western Australia. The reason for this state of affairs, he claimed, was that the training emphasis was on

theory rather than the practical applications. This resulted in the apprentices not being trained to the requirements of their particular trade. He took the view that industry should have provided the practical requirements for the apprenticeship and the relevant theory would have had to be provided by the college. Consequently, it appeared that the apprentice training course had been badly designed with the emphasis placed on the wrong aspects of training. Course design had to be a practical bottom up approach starting at a training analysis at the tradesmen level, so as to establish a skilled status norm, and then later the relevant theory required to be developed, so that the necessary background knowledge was given.

Shortfalls in Standards: employer and employer bodies

A training officer (T63) believed that all training should be under the direction of a National Training body. The reason given was that previous experience had shown that the States were inclined to be self-reliant with regard to training. This appeared rational as there were advantages in having an unvaried training policy linked to a recognised standard. This enabled skilled tradespeople to move throughout the country without the requirement for further training, which would enhance business expansion.

Furthermore, (T63) spoke of the importance of uniform national standards which were relevant to the trade. The situation where there are variations in standards between different States works against this position. The modules needed to have a balance between the practical and theoretical items to ensure that the apprentices received the relevant skills for the workplace. What was important here was that no student would be able to pass the modules with theoretical knowledge but be incapable of showing practical skills on-the-job. Both the theoretical and practical aspects of training needed to be closely integrated in the module. These modules needed clear skill descriptions and defined standards and knowledge requirements to reduce variations in the assessment process.

Managers were not happy with the apprentice standards but did not have time to specifically train to set standards because of other perceived work priorities.

Manager (M68) believed the purpose of assessment was to increase and maintain the standard of apprentice training. He pointed out that in the plumbing and painting areas, the main criteria that they were working against was the trade training schedules set up for each individual trade. They were still using NATAS in these trades. He mentioned the problems associated with who completed the assessments, where people tended to assess, and the way they were originally assessed, for example on the ability to do a particular task. They tended not to follow set assessment procedures especially in the on-the-job or workshop situation. He believed that if an assessor used the NATAS documents to conduct the assessment it was a valid process. However, the successful completion of a task on one occasion did not necessarily mean the apprentice was competent. Also the reliability of on-the-job assessment was called into question when a diverse range of employers were involved in the assessment process. This manager pointed out that each employer would interpret the assessment document differently which resulted in a range of assessment standards. Employers also did not have time to specifically train apprentices as most learn by working under supervision on actual jobs. He believed that with the present training system of apprentices the current assessment process was adequate under the circumstances but obviously could be improved with different training processes. A suggested solution was probably with Group Training Associations training and monitoring apprentices to ensure the trade standards were maintained. The idea of a final practical examination or test was sound and sensible because without this quality control factor it was difficult to be sure of any resulting standard.

The views held by many other people are expressed by these managers:

And the assessment methods currently we feel are certainly not to a level that is going ensure or guarantee the maintenance of standards within our industry. We feel that because of the budgetary restraints and the lack of resources that Government departments have, that currently we find that there is no, we believe there is no real effective method of assessment for our industry (M72)// but it's a case of you've got your good and you've got your bad (M57)// in the current Metals Curriculum there's a lot of rubbish in the training, doesn't reflect the work place requirements (M59)// I don't think it's good enough or extensive enough or long enough to really produce competent tradesmen (E62)// I've seen the standard of trades people deteriorate rapidly, I am very concerned about it (T63)// Against what, I believe standards need to be continually reviewed, I believe people with hands on experience throughout

the industry need to get together and discuss assessment criteria, skill levels particularly in the electrical trade (T66)//.

Manager (M72) reflecting the views of the hairdressing industry, said he did not believe that the existing assessment system adequate and further suggested that it was incapable of ensuring or maintaining standards within this trade. He also pointed out that without an efficient assessment procedure it was a waste of time. The assessment procedure also had a quality control function, so to run a training programme without the ability to effectively identify the results was unsatisfactory. This industry was concerned enough to address this issue nationally. Obviously a National training strategy was the sensible way forward but again the new assessment procedure had to be effective and the trade standards suitable for industry.

Tradesman (T66) made an important point when he suggested that due to change the standards needed to be continually reviewed. This should have been conducted by people with hands-on experience and covered areas such as assessment criteria and skill levels within the trade. There was a need for industry to set up a mechanism to review the training and skill levels of apprentices or future tradesmen.

Is the current system good enough? I believe four years ago it was heading along the right lines, whether in the past couple of years it seems to have fallen in a hole due to obviously government cutbacks, monitorings are no longer carried out and I believe that this is wrong, I believe that self-regulation of industry doesn't work and the prime reason for that is that each employer believes that he is doing the right thing for his particular sphere of trade, however, apprentices need to be trained to an overall standard (T66)// Well there's very little standards, there is certainly at this moment no standard that is measured against, it is coming into being in the next twelve months (T70)// it's going to be the downfall of skills as we know it in this country and we rely on them being highly skilled (M59)// Well I believe that this current course is getting back to the standard that we originally identified back three years ago, now I believe once we've got the assessment procedures in colleges for all training providers, public and private, and to this benchmark of the 70% pass level (M60)// until they get competency standards that are universal throughout the country, not just this state, we are going to have major problems (T63)//.

Tradesman (T66) from the electrical trade did not think that the current system (National) was good enough, in fact he believed like many other employers that standards had fallen and the previous system (NATAS) that included external monitoring was better. The reason given was financial cutbacks from the government and the move from apprentice monitoring to self-regulation by industry. He pointed out that even if the employer was training to his own standards, the trade suffered because apprentices had to be trained to an overall standard. Otherwise the movement of apprentices between employers was restricted because apprentices had incompatible skills and standards. He placed the emphasis on uniform standards and suggested the best way to achieve this was to have a limited number of properly trained selected monitors visiting, checking, and advising industry of standards and training methods for apprentices. A sensible viewpoint and difficult to see how a viable apprenticeship scheme could be run without some form of independent assessment especially in a diverse industry. Obviously the existing scheme had to be reviewed because industry was under the impression that standards had fallen in comparison with previous schemes. It also mattered that this observation had been made on the electrical trade where skills and standards had to be kept at the highest level.

The actual employer assessment process appears to have been an unknown quantity that varied considerably. Some took a serious approach to training but others did not, and some apprentice training ended up as a form of work experience. In most cases it was difficult to see how the system could maintain industry standards and also produce a quality product. The lack of recognised standards was very important, because it was impossible for assessment to be carried out without some form of established benchmark. The establishment of a national standard was obviously essential and the correct way to have progressed in this industry. Consequently, colleges and individual companies most probably had established their own apprentice training standards, which may or may not have been adequate.

Administrator (A74) suggested the reason for assessment was to determine that apprentices reached a certain criteria. He said that the competency-based assessment

was not satisfactory because the learning outcomes were narrow and specific and they stood alone. He felt that the over all width and depth of education and training for apprentices had been discarded in competency-based training. Students were assessed on passing a certain criteria as the employers liked to see assessments that indicated differences between apprentices. His understanding of the competency-based scheme was that one pass indicates a skill achievement, when in the real world skills needed to be demonstrated over a period to identify competency. This appeared a very literal view of the assessment process, because skills should have only been marked down when competency had been achieved in the mind of the assessor. However, when skills were broken down and the system required extensive checking it was easy to see how the above could occur when colleges and employers had limited time available for assessment. Students saw the flaw in the marking process and tended not to extend themselves after reaching a basic standard, because there did not appear to be any incentive for further achievement. This administrator believed that this situation would deskill the eventual skilled workforce if it was allowed to continue. The employers in industry were not happy with the standard of training. Also the smaller employers have been ignored in the consultation process prior to the implementation of the national scheme. It would have been sensible to have given them a voice in some form of review forum so that the training difficulties could have been solved. The previous system was described as criteria-based assessment, which appeared to have been understood, and worked well. This also usually contained a percentage marking system, which indicated excellence among the apprentices.

Administrator (A74) continued that the standards of apprentice training was improved in the last decade in Western Australia. However, the present system (National) was causing people to drop out of the apprenticeships. Reasons given indicated lack of job satisfaction and poor job training. This administrator believed that this would seriously affect the future skills base of Western Australia. Industry would he thought become less competitive and would have a major impact on any State expansion of the industrial base. He pointed the finger in the direction of the education system and the need for them to provide a broad base of basic skills that would be of use in the workplace. The twenty-four modules in the usual apprenticeship programme included

about eight modules for social skills or areas outside normal industrial skills training. He suggested that these modules be completed elsewhere and replaced with other modules that had a skills application to the workplace. This increased the skills training by a significant amount, which in turn increased standards. It also provided the schools with an alternative option for students who were not university material and prepared them for skilled work or apprenticeships. These suggestions needed to be evaluated and were an attempt to solve a real problem of standards in the present apprenticeship scheme. It was important that system developers remembered that colleges and industry had only a limited time to impart skills to the required trade standards and any changes in the curriculum would effect the final result.

Assessor Competency: employers and employer bodies

Manager (M72) reflected the general opinion in the hairdressing trade and believed the system could be improved by the provision of adequate resources and so this meant more funding. They also thought that the teacher's ability to impart knowledge and the instructors own standards had a major impact on apprentice training. People responsible for apprentice training had to be of a high standard to ensure that the students, in their turn, achieved the expected results. It was therefore important that instructors and assessors had the necessary skills and the respect of their industry, prior to being involved in apprentice training.

Adequate standards, training and guidelines needed to be in place in addition to assessor competency:

So basically why we have assessments, the philosophy is that we try to ensure the learning or the training that is being given has been obtained or the skills have been obtained to make them competent. The assessment is a very hard thing to do, you can use your own experience in your particular trade but you are only assessing against your own ability, your own competency, it is very very hard to get multiple assessors where they are all exactly at the same level. For assessments you need specific standards which will identify their level of competence,(T63)// The other big issue is we need to have staff recognised as trainers in competency-based training and appropriately trained to provide that training and that assessment and I guess we need some more theoretical work on what is good competency-based assessment. I really still don't think we understand that well at all. (T73)// Against what, I think this is a big problem

because of the different standards within the industry, the assessment on levels of competency can basically vary from assessor to assessor. (T58)//.

(T63) a training officer indicated that even with experience, assessments were not an easy process. He obviously depended on his background knowledge of the trade, linked to a trade standard for a particular skill, to conduct his assessments. So if an experienced person found it a difficult process, consider how much more difficult this process was for company employees responsible for apprentice training.

He continued and endorsed the subject of assessment difficulties, because of the different levels of competence of multiple assessors. The crucial area in any assessment was the specific standard which identified competence and was used to establish a uniform benchmark. If this standard was well defined and understood it would help the assessors to establish a uniform approach to assessment levels. (T63) stated that the reason why this was still not in place had been the cost involved. Obviously the establishing of a national standard was a move in the right direction but the correct standard needed to be established for each trade as a matter of necessity to maintain the proper skilled status of the tradesperson.

A trainer suggested that staff responsible for apprentice training should be adequately trained to provide training and assessment in a competency-based scheme. There was need for a more comprehensive approach to this problem and more funding for this type of training within industry. Therefore, it was no solution to make industry responsible for self-assessment without training people capable of carrying out this function.

This indicated that industry operated at different standards within a particular trade which was a problem for industry, especially in the training of apprentices. Apprentices were trained to a uniform standard established by the trade but which of the above standards could a training provider select that would be fair to all apprentices? The assessment of the selected standard also varied among the assessors depending on trade background and the assessor's competency. The only real answer

to this problem was to establish a uniform standard and train the assessors to this level.

Many in industry believed that assessor competency should be based on qualified assessors working to specific standards. So training officer (T63) suggested that these assessors met on a regular basis to ensure uniform standards in the trade. This was a sensible approach and it must be assumed that these assessors would be selected qualified tradespeople who were also subject to assessment. This would establish some form of independent body within the trade to monitor the trade standards and maintain skills at a high level.

Testing: employers and employer bodies

Australia had developed a qualification structure the Australian Standards Framework (ASF), at various levels and most forms of training were linked to this method of establishing a uniform system of recognition of skills and abilities in the workplace. This covered the whole spectrum from schools, TAFE's, universities and work qualifications and provided pathways for progression between these various organisations. Manager (M57) believed the main reason for testing was to evaluate the competency of apprentices to the trade standards. Also it could be used to classify people at various levels in Australia and this related to the Australian Standards Framework (ASF).

There was need of some independent body to provide this overall testing function because some organisations were not capable of completing valid in-house assessments of apprentices.

Manager (M57) representing a Group Training Association view implied that even though the competency-based system, in theory, allowed for rapid completion of the (National) modules, financial and administration conditions at the training providers often prevented this happening. Students being tested for skills paid for the full cost of the relevant modules. Another problem with more mature people was Recognition of Prior Learning (RPL) which was the assessment of skills and qualifications against the

relevant Australian standard. This assessment could indicate that a person needed a few (National) extra modules to achieve trade status but the system was not flexible enough to run special modules for small groups. This was due to a lack of resources for this type of activity.

Many managers in the trade suggested that assessments should have been carried out in a more flexible manner. The involvement of some lecturers in the on-the-job assessments had benefits for all concerned in the evaluation process. A project manager (M75) pointed out that the metal trades had no fixed assessment period at the end of a three week block, or the semester course, as occurred in the previous (State) system. Apprentices were assessed during and at the end of each (National) module and were passed or failed. There appeared to be a need for some type of final assessment which would act as a type of indicator that the skills and knowledge learned in each module could be applied. In other words, were the skills and knowledge acquired during training relevant to the real trade skill standards in the workshop?

(M65) an executive officer stated he was not in favour of the piecemeal method of assessment or testing learning outcomes or even modules in isolation but rather what he called holistic assessment or testing related groups of learning outcomes or modules together. This directly related to the normal workshop situation where the apprentices had to apply many skills to complete a job. Employers had been placed in the position where apprentices had been assessed in a piecemeal fashion and declared competent but were unable to translate this competence into normal work. He had a solution to this problem, by means of a module that brought all the skills and knowledge together and was then assessed. This had been described as a capstone module which was linked to the idea of final testing. This idea also solved the problem of the diverse nature or work experience received by the apprentices and should have produced more uniform skill standards in the trade.

The following represented a consensus of opinion on final testing:

Final testing is a utopia. It, the majority of the employers would like it, there is no objection to my knowledge from the union movement towards final testing, in fact they've been very supportive of it. The only problem was who is going to pay for it and governments just weren't prepared to pay, so that's it. (T63)//

I think combined with a continuous assessment , it is not a bad idea because it gives the incentive to say you don't pass at the end you know you're not there (M64)// They bemoan the loss of a final year exam as they think that that is as well it's a test they believe they went through (M68)// The final examination deals with all the competencies he's required to have and he's required to do that over a two day period. (T61)//

The subject of final testing of apprentices had many supporters because it established some form of quality control on the completed training. However, it was expensive and the idea was not implemented. So it was difficult to be certain at what standard the apprentices entered their respective trades and were considered to be skilled tradespeople. There was also no comparative data as to the upward or downward movement of standards which would have been provided by a system of final testing. The trades were in general agreement that the variables needed to be addressed in an assessment method to ensure valid results. Manager (M64) was unable to be sure how good the existing system was because of a number of variables. The only way for the system to be evaluated was to look at the abilities of the students in task completion, at the end of their course. This form of test would have had to be comprehensive but related to the task in hand with valid and reliable results. Obviously the assessment method had to be proven and also the assessors had to be qualified to ensure the tests were fair to all concerned. The assessment method had also to be flexible to cater for people with say poor 'English' skills, and in recognition of prior learning, in the interests of fairness.

The following reflected a current view from the plumbing and painting trade. Manager (M68) found that standards varied widely between employers. Consequently, it must be assumed that the standards of apprentices and maybe skilled tradespeople also varied. This would not be a satisfactory state of affairs for anyone concerned. The skills test and interview of about a day's duration for a trade award would also have been a basic vehicle for an apprentice trade test to attempt to remedy the situation. This problem had developed because the system was open to the employer's interpretation of the assessment criteria. The obvious solution was to have included external monitoring and some form of final trade test. If in fact nothing was done in

this regard the community and industry would have had to live with the consequences of a wide range of trade standards and the problems associated with this situation.

Manager (M64) in contrast was in favour of final testing if it was combined with continuous assessment. This was important because both forms of assessment had their value but if taken together they provided a very comprehensive assessment. The end test in his view would have increased the incentive and motivation of the students who were sometimes inclined to play the system. This test would also have acted as a form of quality control for apprenticeships.

However, what was of major importance was that the final trade certificate would identify the truly skilled tradesperson at a level acceptable to the relevant trade. The whole of the assessment process should be geared to this aim and it was difficult to see this achievement without some form of independent monitoring and final practical testing.

Selection: employers and employer bodies

Most trades required specially selected apprentices with good education but with additional special abilities in a number of practical skills relevant to a particular trade.

Electrical apprenticeships and they may have even taken a preapprenticeship course and then found that during the course of the subsequent years they are not suited for it (M71)// a very sophisticated selection procedure, very sophisticated, this is combined with attitude and IQ tests and the whole bit and they go through quite a process to identify the correct sort of people who would benefit from four years...of training (E62)// I think we look for too much up front sometimes as well and you don't necessarily attract the right people to the job (M57)// I think that the standard of student was far better when the providers interviewed their own people and then they could see what was in front of them not just open up the doors so they be getting a turn and see what comes in (T58)//.

Apprentice selection was for four years of practical and theoretical training and because of the financial investment the correct people needed to be selected.

Many managers had reservations about the selection process of apprentices which did not seem to be attracting the right people to the job. Apprentices needed to be very practical but still have the ability to pass the theoretical subjects which related to the essential trade knowledge

Summary

Emergent Themes: employers and employer bodies

Resulting from the discussions with employers (and employer bodies) there were eight emerging themes. The themes were, in an overall sense similar to the issues that concerned the other groups as can be seen below. However, there was a difference in perspective and this will be explored in conjunction with the other groups, monitors, lecturers and apprentices.

Specific/general training at college/GTAs.

Group Training Associations had the advantage that industry could control the type of training apprentices received and also has the flexibility to cater for specialist types of apprentices in a very diverse industry. A manager used both the trade training schedules and modules depending on the specific area of the trade. However the standards and criteria did vary between these two different schemes (NATAS and Modular) and so the Group Training Association had its own assessment and recording procedure which was then transferred to the relevant scheme.

Assessment and standards had to be linked to achieve the expected results otherwise the whole procedure was non-effective.

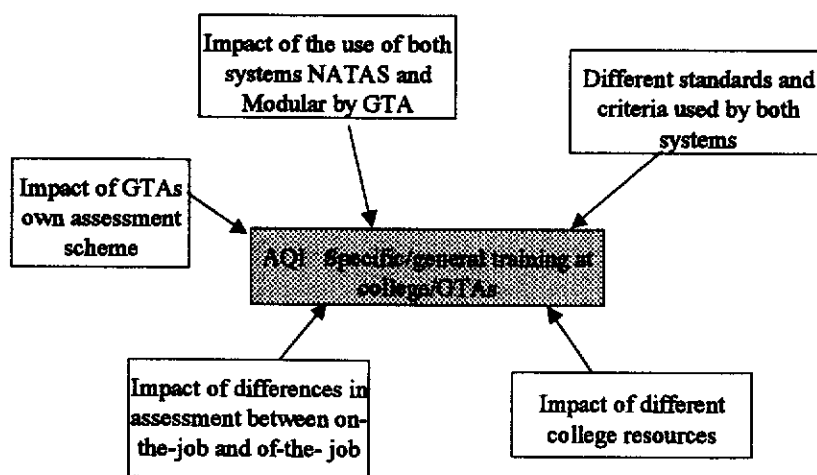
A project manager suggested that assessment methods varied throughout the system in the metal trades. Some colleges were better equipped than others, as those in the regional areas often lacked resources.

The Modular assessment example was based on the record book with a notation for every module of training, and was broken down into two main areas on-the-job (workshop) and off-the-job (TAFE) where the assessment process was different.

A manager found some apprentices had been poorly trained and his organisation had to retrain some in basic skills. Skilled people cannot be produced at a moments notice and the short term answer of bringing in skilled people from overseas was not an ideal solution, when there were people capable of being trained in Western Australia.

Assessment Quality Interpolation (AQI) inputs on the theme specific/general training at college/GTAs.

Employer and Employer Bodies Theme 1.



Adequacy of assessment

NATAS due to financial restrictions was expected to produce a minimum of two visits to apprentices during the four year apprenticeship. This produced difficulties and so a decision was taken by the government to move to self assessment by employers. Therefore the Modular system dispensed with external monitoring when it replaced NATAS.

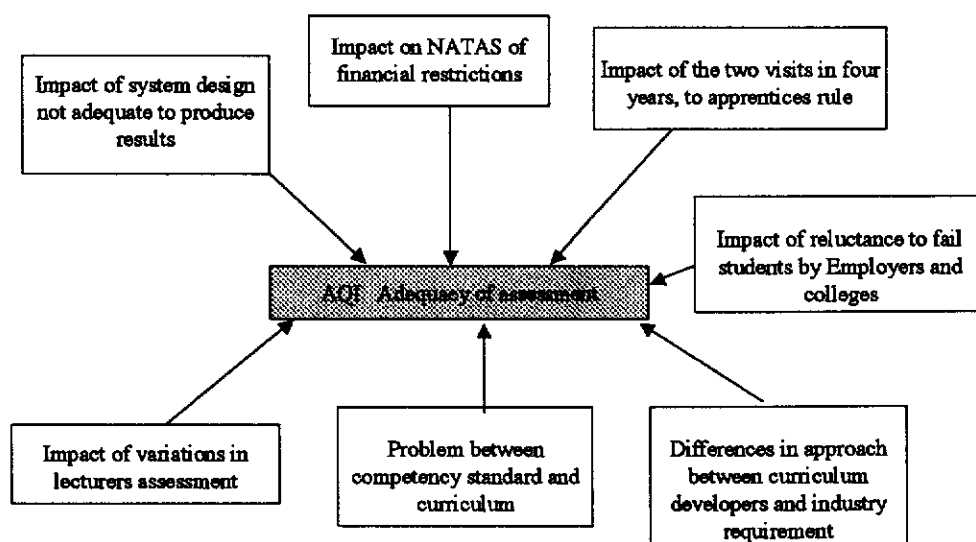
Assessment should be about the student demonstrating their skills and knowledge and this was best done when a task or job was completed because of the comprehensive range of skills and knowledge displayed. An executive officer made the point that

whatever assessment was used had to be the best predictor of the demonstrated skills and competencies with the available resources.

A training consultant believed that the assessment methods used in the competency-based scheme had been ineffective. The competency standard had not been capable of being assessed in relation to the curriculum. He mentioned that the training issue has been approached from different directions by the curriculum developers and industry. The former was interested in the ability to acquire individual skills and the latter the completion of tasks. Also a project manager had not believed that the system was good enough despite the performance criteria and the learning outcomes. The reason he gave was that the lecturers assessments varied.

Some managers believed that the existing assessment system had been a failure. It appeared that both the colleges and the employers were reluctant to fail students in their final years and so low standards of students were passing through the apprenticeship system. This meant that these individuals were entering the trade as skilled tradespeople, often without the required competencies.

Assessment Quality Interpolation (AQI) inputs on the theme adequacy of assessment.
Employer and Employer Bodies Theme 2.



Employer and TAFE provision

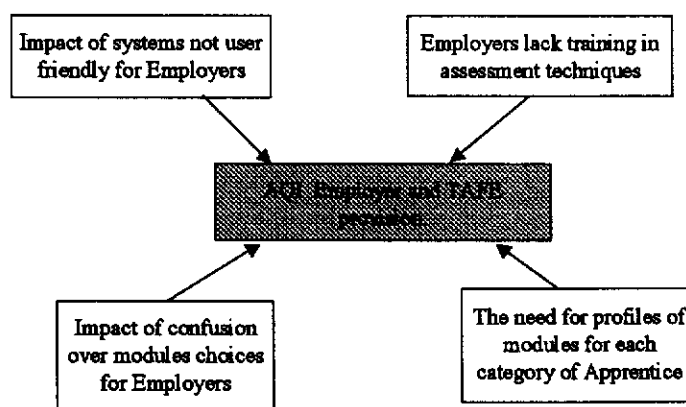
Employers were usually very busy people and lacked time for what they considered non essential items, therefore any process needed to be designed to be user friendly and relatively quick to complete. The solution was to provide the employers with a list of related jobs for the apprentices to complete in their relevant training year.

This manager pointed out that a weakness within the system was that employers had not been trained in assessment techniques as a general rule.

However there was some confusion about the choice of modules available for selection for apprentice training. The apprentices usually covered about twenty four modules and the employers had a choice of over four hundred modules. Therefore there was a need for each trade to profile each category of apprentice to enable the employer to make the correct choice of relevant modules.

A manager stated for example that the electrical apprentices were expected to complete twenty-four modules which included eighty learning outcomes to achieve their certificate of trade studies and their eligibility for an electrical licence.

Assessment Quality Interpolation (AQI) inputs on the theme employer and TAFE provision.
Employer and Employer Bodies Theme 3.



Testing

A executive officer mentioned he was not in favour of the piecemeal method of assessment or testing learning outcomes or even modules in isolation but rather what he calls holistic assessment or testing related groups of learning outcomes, or modules together. He has a solution to this problem by means of a module that brings all the skills and knowledge together which was then assessed. This had been described as a capstone module which was linked to the idea of final testing.

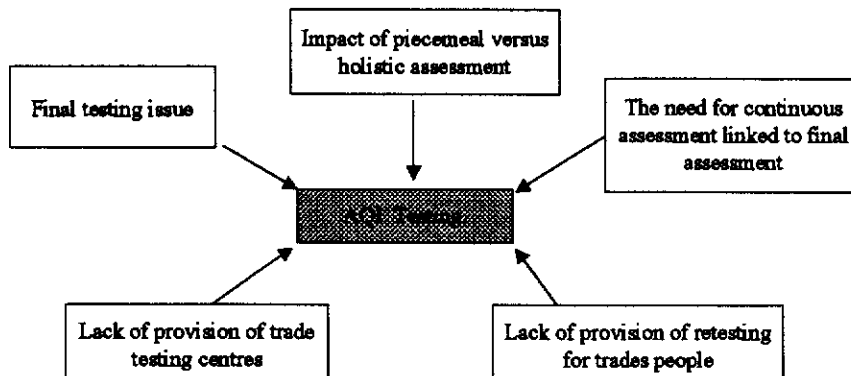
Designated trade testing centres could be set up at colleges or large companies and skill status could depend on passing a competency test along with previous approved training. These centres could also be used to retest tradespeople after serious accidents when competency was in doubt or be involved in recognition of prior learning of overseas tradespeople.

However what was of major importance was that the final certificate should identify the truly skilled tradesperson at a level acceptable to the relevant trade. The whole of the assessment process was geared to this aim and it was difficult to see this achievement without some form of independent monitoring and final practical testing. The easiest way to ensure a uniform standard was to establish a final trade test prior to skilled trade status, this would identify any shortfalls in standards. The subject of final testing of apprentices appears to have many supporters because it was a sound idea which establishes some form of quality control on the completed training.

A manager was in favour of final testing if it was combined with continuous assessment. This was important because both forms of assessment had their value but if taken together they provided a very comprehensive assessment.

Most trades required specially selected apprentices with good education but with additional special abilities in a number of practical skills relevant to a particular industry.

**Assessment Quality Interpolation (AQI) inputs on the theme testing.
Employers and Employer bodies Theme 4.**



Cross-sector supervision

An apprentice mentioned that the practical training did vary depending on the type of organisation that employed the apprentice. Some apprentices got very good training but others did not and so there was an obvious need for some external body to monitor this activity to provide a uniform trade standard.

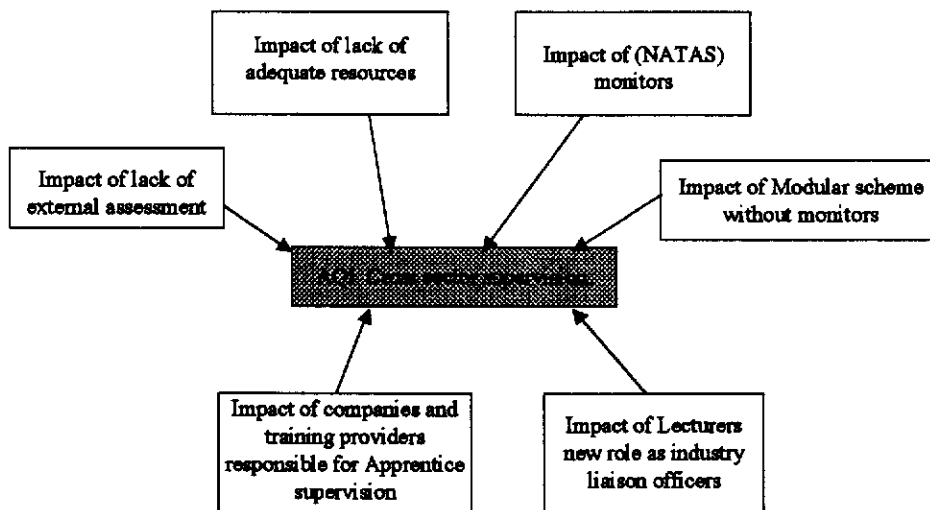
The apprentice training system needed to be a comprehensive process which included a relevant syllabus, standards and an effective means of evaluation to achieve the desired results which in this case was a fully skilled tradesperson. Just because a system was in place, this did not necessarily mean that skilled people would be produced at the end of training. Therefore it was important to run any scheme correctly, backed up with adequate financial resources, equipment, fully trained staff and some form of effective quality control.

A tradesman was in favour of external assessment to ensure that employers were training their apprentices properly. However it was important that these independent assessors were specially selected from tradesmen and trained in assessment methods.

An interesting development was the use of lecturers as industry liaison officers a role that was last filled in the previous NATAS scheme by the monitors.

It would appear that some employers had to be kept up to the mark in assessment terms which was the reason, there was a requirement for external assessment.

**Assessment Quality Interpolation (AQI) inputs on the theme cross sector supervision.
Employer and Employer Bodies Theme 5.**



Standards

The assessment function of the Office of Industrial Training would in future be performed by selected private contractors which could result in varied standards. Group Training Associations appeared to be a solution to the problems generated by these changes.

The status of skilled person and the standard of training of the apprentice were directly related and these issues had been put under pressure by the recent changes in the training system which may or may not have produced the expected product.

Industry had developed standards for assessment which did not fully fit the assessment scheme. The reason appeared to be that the curriculum developers had designed the scheme to assess learning outcomes which form the curriculum. The relationship between the standards and the learning outcomes appeared to be unclear and sometimes incorrect.

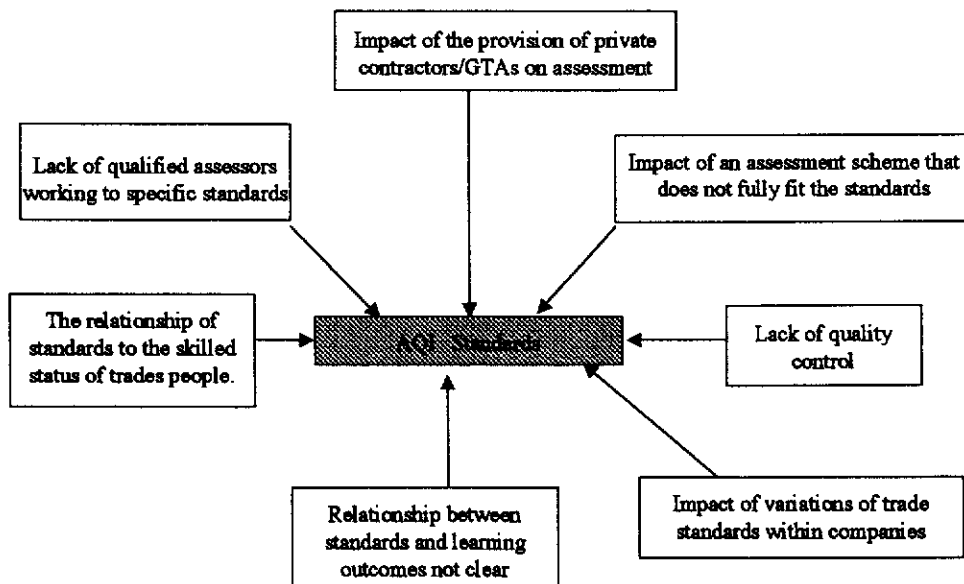
A manager was under the impression that standards varied within the trade and was not confident that the competency-based system was better than the previous method described as a teacher group led system.

Another manager did not believe that apprentices were being trained to the correct standard required by industry. His reasons were the lack of consultation with the right people in industry and the lack of an effective assessment system to ensure quality control. He pointed out that even if the employer was training to his own standards, the trade suffered because apprentices needed to be trained to an overall standard. Otherwise the movements of apprentices between employers were restricted because apprentices had incompatible skills and standards.

A training officer believed the apprentice training system should have qualified assessors working to specific standards. It was therefore important that instructors and assessors had the necessary skills and the respect of their industry, prior to being involved in apprentice training and assessment.

The manager suggested that some apprentice training was not up to standard but these students were receiving skilled status and if this was the case the industry and the community would suffer and the reputation of the tradesmen would be damaged. The apprentice should be capable of completing a task to a recognised standard and the assessment system in place should be capable of indicating that this had taken place.

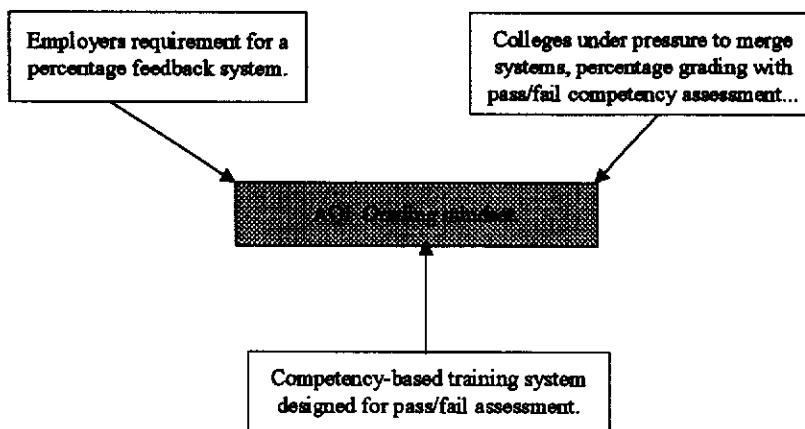
Assessment Quality Interpolation (AQI) inputs on the theme standards.
Employer and Employer Bodies Theme 6.



Grading mindset

Some colleges had been forced due to pressure from industry to retain a percentage marking scheme with a competency-based course. A competency-based assessment should only be indicated by a pass or fail situation.

Assessment Quality Interpolation (AQI) inputs on the theme grading mindset.
Employers and Employer Bodies Theme 7.

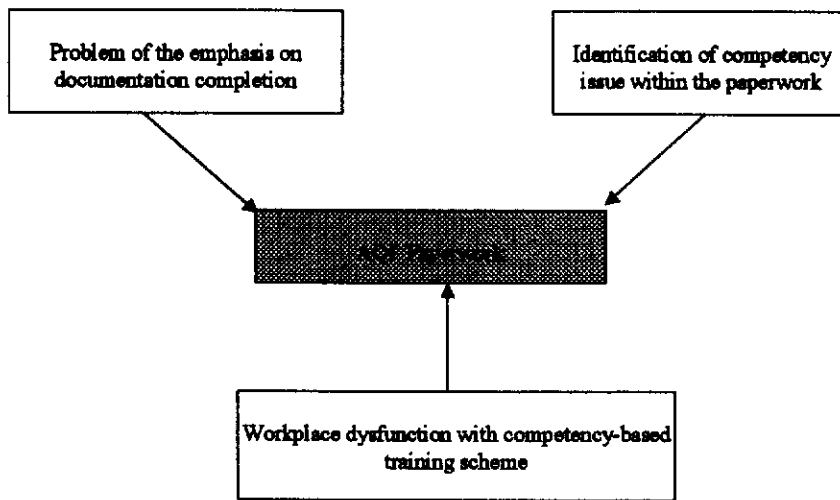


Paperwork

A project manager was also under the impression that the assessment did not relate to the training requirements. The emphasis appeared to be on documentation completion rather than the real purpose of the identification of competency.

The competency-based training schemes appeared logical and effective on paper but these were not translated easily to the workplace level. This seems to suggest some form of dysfunction with the scheme and the workshop function.

**Assessment Quality Interpolation (AQI) inputs on the theme paperwork.
Employer and Employer Bodies Theme 8.**



Chapter eight begins with the addition to the monitors, lecturers, employers and employer bodies, findings of the apprentices respondent set (see figure 8).

Chapter 8

Discussed Findings

Apprentices

Figure 8 : emerging categories and issues for key stakeholders

Group	Monitors	Lecturers	Employers	Apprentices
Category ASSESSMENT METHODS & ASSESSMENT	Not positive Issues like time resources and employer awareness	Not positive Process checks in Large classes a concern. Time resources a concern because of multiple tries	Not positive Issues like adequacy of assessment. CBT causing concern due to some differences between curriculum developers and industry	Not positive Issues like adequacy of assessment NATAS at work but Modules at college
EXTERNAL ASSESSMENT	Strongly supported Industry focus, experienced tradespersons pastoral role. Cross sector supervision	Employers need advice in choosing modules at TAFE	Employers need help in reducing training variations of apprentices. Self assessment not adequate.	Need for external body Due to training variations in organisations
EMPLOYERS RESPONSIBILITY	Small companies employers not all good assessors. Company v/s industry	Employers used grades Employers frustrated at college paperwork. Too complicated not user friendly Employers/lecturers disagree on pass/fail	Employers not good assessors. Issues like CBT module selection a problem Dislike of pass/fail assessment	Issues such more training time needed for apprentices to achieve competence in trade
STANDARDS	Worrying, safety an issue, penetration and diversity makes standardisation difficult due to different interpretation	Doubts on standards Variable instead of uniform Reliability as subjective marking by lecturers	Doubts on training standards Variable instead of uniform trade standard Need for qualified assessors	Doubts on training standards with the view they are low Standards variations between college and workplace
THEORY	Off-job v On-Job Issues. Grading v/s pass or fail The % problem	Grading mindset and concern at the 100% pass 100% fail mentality.	Grading mindset Pressure on colleges for a % system rather than CBT pass/fail	Grading mindset CBT pass/fail does not clearly identify excellence
COLLEGE SYSTEM		Administratively more paperwork. Variations between colleges	Variations in college resources in regional areas	Lecturers overloaded with students
ADMINISTRATION	Inadequate resourcing and funding		Emphasis on documentation completion	Problems associated with mixed ability students

Apprentices Perspective

Introduction

This representative group of twenty respondents included mainly third year and the occasional fourth year apprentices. They were interviewed (interview notes in the Appendix B) in five TAFE (Technical and Further Education) locations in the Perth area, Western Australia. The apprentices selected covered the following areas electrical, hairdressing, cooking, and fabrication trades. The third/fourth year was chosen because that was the period of final assessment, as the college training usually ended in the third year and the apprentices had sufficient maturity and experience for relevant data to be produced. They were selected at random, by asking at the various colleges for volunteer participation in the research programme and so provided a representative group of the apprentice experience in Western Australia. It should be noted that Group Training Associations represented by other respondents in the employers group covered large groups of apprentices of other trades and so provided apprenticeship data but from a managers perspective.

This group provided eight emerging themes as follows, adequacy of assessment, over and under achiever, grading mindset, employer and TAFE provision, cross-sector supervision, testing, standards, and specific/general training at college. These were generally similar to the other groups, monitors, lecturers and employers. However the issues were seen from the perspective of the group actually experiencing the process of apprenticeship training and assessment. Moreover to continue the comparison of responses across a similar range of assessment topics to the other groups, once more a broad selection of responses were given followed by emergent themes which appeared to be of interest or pertinent to the research..

Theory: (AQI) Assessment Quality Interpolation.

The AQI concept was explained in Chapter 5, and the Assessment Quality Interpolation(AQI) was also present in the apprentice data set and described by means of diagrams in the emerging themes summary section of this Chapter.

Assessment Methods: apprentices

NATAS

New Apprenticeship Training and Assessment System (NATAS). Apprenticeship training in Western Australia is changing from a time served to a competency-based system.

(Definition contained in Glossary of Terms and Phrases p.4).

During this changeover period from NATAS to Modular a number of apprentices had similar experiences to apprentice (A81) in the cooking trade. He said he was assessed at work using a trade training schedule. However at college the TAFE (Technical and Further Education) module was being used, but this student appeared to have doubts as to the validity of the assessment because most apprentices passed. He was not confident that he had reached competency even though he had passed. He also did not like the pass/fail system of assessment and preferred a percentage system so that future employers could be impressed. This indicated that the students were concerned about the assessment process either because it had not been explained properly or that maybe the system needed revision and review.

Modular

(Definition contained in Glossary of Terms and Phrases p.4).

There was a wide range of backgrounds and abilities among the apprentices under training. Some of the more mature apprentices liked to get more involved in forms of self-paced learning and so found the training system in this trade was not flexible. However, the students in this case were probably mature and above average. If more work had been done in this area, better apprentices would have moved forward at their own pace which was one of the advantages of competency-based training.

Self paced learning in certain trades required adequate facilities especially when there were groups of students at different stages of the training. Therefore it was easier for control purposes to move the group along at the same pace. Obviously this was

frustrating for the better students but it was a difficult problem to overcome without adequate funding and facilities. Existing facilities needed reviewing with course expectations in mind, and a decision made on the extent of adequate funding to achieve the objectives.

Apprentice (A79) was concerned that the self paced mode was not very organised and the teacher had little time for individual students. This was interesting because if the training produces problems for students, it either meant the training was not clear or the students had not the ability to operate the system. The apprentice believed that there should have been less practical work at the college because hairdressing work every day at the salon covered this aspect. Lecturers found it very difficult to visit all students in the workplace to carry out such assessments.

The following examples and opinions on the practical assessment process reflected the experience of many apprentices (// has been used to separate extracts from respondent data).

An apprentice chef described the practical assessment process:

Yes. We've got workbooks at the end of each module that we complete and hand in and there's two assignments which we do throughout the course and at the end of the course there's an exam which incorporates most of what we've covered.(A82)// I am assessed at the capacity in which my attitude is towards my work. How I do in my modules, whether I am capable or whether I am not. Attitude comes very highly into it.(A83)// To let our employers know how we are doing with our studies. (A87)// it's straight from the module, they've got criteria and that that you have got to meet (A95)//.

Apprentice (A82) said that the Modular training was structured and assessment was completed by using work books, assignments, and an end of module examination. The lecturers also observed the students hygiene, presentation of dishes, and menu interpretation to complete the assessments. So the competency-based training in Modular format was quite comprehensive and on paper looked a viable system.

Apprentice (A83) said she was assessed on her competency and attitude to work. She understood that the apprenticeship was necessary so that skilled status could be achieved and the period at TAFE (Technical and Further Education) was part of the process. It was important to note that the average apprenticeship was about four years, with the college component being the first three years. This was quite an

investment of time for the young person but the goal was that qualified status was achieved.

Apprentice (A87) was involved in Modular training and believed the purpose of assessment was to keep the employers informed of his progress at college. These modules had to be passed at the seventy-five percentage grade to achieve success.

Assessment: apprentices

Assessment

Assessment is the process of collecting evidence and making judgements on the nature and extent of progress towards the performance requirements set out in a standard, or a learning outcome, and, at the appropriate point, making the judgement as to whether competency has been achieved.

Another way of describing assessment within competency-based approaches to learning is to say it is criterion referenced. This means that it measures a person's performance or identifies their achievement in relation to criteria and not in relation to the performance of other learners or trainees. *Framework for the Implementation of a Competency-Based Vocational Education and Training System*. Vocational Education, Employment and Training Advisory Committee (VEETAC) February, (1993).

Assessment Validity: apprentices

Competency standards assessments are valid when they assess what they claim to assess. Validity of assessment is achieved when:

- * assessors are fully aware of what is to be assessed, as indicated by the units of competency, learning outcomes and clearly defined performance criteria.
- * evidence is collected from activities and tasks that can be clearly related to the unit of competency or learning outcomes specified for the course or training program
- * evidence demonstrates that performance criteria have been met
evidence is sufficient.

Source: *Framework for the implementation of a competency-based Vocational Education and Training System*. Vocational Education, Employment and Training advisory Committee (VEETEC) February 1993, p.15).

Many apprentices were of mixed ability in the college system and therefore some coped better than others in the assessment process. The major problem facing colleges running courses was the mixed abilities of their students because these days they did not control the course selection process.

Apprentice (A94) found the college courses were easy but realised the need for the background theory. The colleges had difficulty accommodating mixed ability students from a wide range of organisations and training them together on the same course. Therefore, some found it easier than others, depending on their ability and work experience. The colleges because of the safety and health issues in hairdressing provided excellent courses in subjects such as scalp diseases.

Obviously students varied in their abilities and the competency-based self based learning was very adaptable and it was possible for students to complete their courses early if they displayed competence. Apprentice (A78) believed that the hairdressing student did not need three years of training but mentioned that in the third year a student gained more confidence in her work. It was very difficult to organise training for multi-skilled students but the competency-based system appeared fair to all students, as some students developed work skills and confidence at different speeds depending on ability and maturity.

Fairness/Flexibility: apprentices

Assessment practices endorsed for the implementation of CBT must be **flexible** if they are to be appropriate to the range of delivery modes, sites of delivery and needs of learners. There is no single approach or set of approaches to the assessment of performance in a competency-based system. Assessment is **fair** if it does not disadvantage particular learners. If learners understand clearly what is expected of them and what form assessment will take, and if the assessment places all learners on equal terms, and the assessment procedure supports their learning, then the assessment should be fair.

Source: *Framework for the implementation of a competency-based Vocational Education and Training System*, Vocational Education, Employment and Training advisory Committee (VEETEC) February 1993, p.17).

The sentiments expressed by adult apprentice (A77) in the electrical trade represented the views of many other respondents. He believed that the previous system was better and he was in a unique position to comment because this was his second apprenticeship. Previously he received a higher percentage mark and subjective

comments that gave a more qualitative description of his abilities. The competency-based system (National) with its pass or hold (fail) marking did not identify excellence. Students, when they failed, had no access to their examination papers because the same papers were given to re-sit the test. He believed that there should have been at least four examination papers per item so apprentices could identify their problem areas and another optional test could be taken. It was hard to disagree with this view especially when the above was inclined to reduce the final competency of the apprentice. He pointed out that these assessments were open to abuse because the re-sits were not effectively supervised, which he considered was defeating the purpose of assessing to trade standards. Consequently, the students produced by such a system would not be up to the same standard as the existing tradesmen. This adult apprentice pointed out that in the previous system there was a final examination that included both theoretical and practical aspects. He believed it was important to examine the student fully without the pressure of time constraints. In his view the aim should have been to find out what the student knew. Adult apprentice (A77) believed that a lecturer's comments were also useful in the assessment process. He made some interesting points about the existing assessment process, observed by the other groups of respondents which should have been considered when producing modifications of the system.

Apprentice fabricator (A85) mentioned that the purpose of assessment was to indicate competency in the skills contained in the apprenticeship course. However, he referred to some very poor students that passed the assessment requirements of the course. This indicated that there could be something wrong with the standards being used for assessment purposes. The pass or hold (fail) assessment did not motivate this student to achieve excellence because it did not identify him as a superior student. However, the course appeared to have given the student a broad base of skills that proved useful in the workplace and as such did serve its purpose. Electrical apprentice (A76) also disliked the competency-based marking system which only give a pass or hold (fail) assessment. He was obviously interested in some form of award or reward being in place for excellence as the previous percentage marking type gave them an idea of their individual progress.

Yeah having sort of may be even backup courses for people who finish up early and can advance on to doing some extra work, may be if you want to excel yourself, some sort of initiative through work, try to finish earlier, have work actually get off the pass and hold system, give you a better idea in percentage or the old A B C system so they know how you are doing compared to others in the group(A85)// at the end of the course you get a pass or a hold and I feel that really relates, it doesn't show who is the better apprentice and who isn't (A84)// you don't know whether you've got a high percent, low percent whether you've just passed or whether you've passed with flying colours (A89)// the grading system there is only pass and hold and it's just too easy to hold and go back and do it again (A91)//.

Student (A85) suggested some more advanced courses or higher level standards for students who finish the course early should have been available. These would have provided a means of identifying those students who were above average. Another solution to the marking problem was that the college gave the students a subjective grade in addition to the competency-based just pass or hold (fail) marking procedure. This would have allowed the employers to identify the better students or confirm their own evaluation of the student's abilities. The above subjective grade of A, B, C could have been based on attitude to work, or students who passed the module at the first attempt or similar evaluations.

Many apprentices found difficulties with dual grading systems sometimes percentage based and on other occasions the competency-based pass or fail or a mixture of both, which was not standard between colleges.

Cooking apprentice (A89) considered the present assessment system easier to pass because each module was assessed after each training process. Previously the assessment was conducted by examinations at the end of college term. Her course appeared to have been a competency-based scheme however it seemed to have had a fifty percentage pass rate at college. This meant that the assessment of this Modular course was by a percentage marking method. In other words in a competency-based scheme where you were either competent or not, a fifty percent pass rate also means a fifty percent fail rate, all at the same time. Also all the criteria of a competency-based scheme should have been designed to be an essential requirement and not merely desirable. This assessment of modules were conducted under a percentage basis but the students were not informed of their percentage results, just a pass or hold (fail). Therefore, this apprentice was not able to judge her ability in percentage terms. So a

competency-based course was assessed in percentage terms but the report format was then produced in competency terms such as a pass or hold. This indicated that a half-competent person may be considered a fully competent person. Another contribution on the same subject was made by apprentice chef (A91). Who was of the opinion that the assessment system was easy to pass in the Modular scheme. The grading system of a pass or hold (fail), with many attempts allowed to achieve the required pass standard, made it easy for most students to complete modules at college. It should be noted that other respondents made similar findings.

Apprentice fabricator (A84) showed that a structured assessment did take place in the competency-based system. He found this procedure was quite good except for the marking used with its pass or hold (fail) which did not allow him to demonstrate excellence. So both the very good and the poor apprentices passed, the later sometimes after many attempts, which annoyed the better students. The apprentice (A84) also suggested that the competency-based marking (National) was based on the idea of a recognised trade standard which was either achieved or not as the case may be and had no provision for excellence beyond this acceptable standard. However, both employers and students required some additional assessment feedback from the marking procedure. The obvious solution was to provide additional information, either system or college designed, to address this problem.

Assessment of training, both the continuous and final aspects, served an important role in the quality control of any apprentice training scheme. Apprentice hairdresser (A95) was being trained with the Modular scheme, which had a comprehensive assessment process. So this student was aware of progress during training which enabled her to improve her knowledge and skills. If any scheme did not have an effective method of assessment it was difficult to see how the final training standard would be recognised or even achieved.

A major advantage for better students who could progress at their own pace was that they could complete apprenticeships early.

Apprentice cook (A89) found the competency-based training system a flexible training process. The modules could be repeated if failed and also those who finished their modules could complete college training earlier than the required three years.

Many apprentices were concerned with the lack of training and assessment quality as reflected by apprentice chef (A90). Who felt that the assessment system could be improved as the standard was inclined to be low and competence could be achieved easily in this trade. He was also concerned there was little direct training in the workplace between the apprentices and the chefs in his experience. Employers in his view did not spend sufficient time training apprentices and most skills were obtained from work experience. He also thought that apprentices were pushed through the college system and anyone could become a chef these days. However, he revealed that TAFE (Technical and Further Education) was a cheap training option when compared with other countries where similar training was expensive. It was some concern that students were pushed through the college system, which indicated little interest in trade standards. An important feature of any assessment system should be to indicate low achievement or disinterest and would allow these students to be redirected from this training to more appropriate courses.

Apprentice cook (A90) continued that the ratio of lecturer to student was wrong at the TAFE (Technical and Further Education). He held the lecturers were overloaded with students and therefore the instruction suffered. This had an impact on the eventual standard of the apprentice. Possibly they had been pressured into a form of numbers game. He was concerned that the students were not gaining the background training to back up the shortcuts that they learnt on-the-job. This seemed a problem and indicated that maybe some decisions that have been made in regard to such things as student numbers needed appraisal as effective training needed to be backed up with adequate numbers of lecturers and resources.

The consensus of opinion among apprentices was that more thought should have been given to the assessment area to benefit students. Apprentice (A79) used a computer system for assessments but some lecturers and students found that their training requirements did not agree. This suggested that a dual system was in operation, which

was not compatible with the computer and the syllabus. However, in a period of change it took time to coordinate all the training requirements. Again this student did not like the marking used because there was no indication of a scale of pass, or reasons given for failure.

A number of apprentices found that the standards were open to interpretation and maybe needed to be defined more closely. Apprentice (A84) said the standards were adequate but not strict enough as the lecturer allowed a measure of flexibility in the assessment process. Some of the assessment appeared rather subjective and dependent on other factors such as perceptions of the student's ability rather than more objective criteria.

External Assessment: apprentices NATAS.(ASSESSMENT).

(i) Work Place

NATAS is based upon the apprentice being trained to perform skills to a recognised industry standard; that of a newly qualified tradesperson. The assessment by the on and off-the-job trainer is criterion referenced and the apprentice is assessed as having achieved the skills or needing further training /remediation. The Trade Training Schedules list all the tasks and skills that the apprentice is required to have achieved in order to qualify for their trade certificate.

(ii) College.

During the college training program, the apprentice is instructed and assessed in the college listed skills (essential and additional) of the Trade Training Schedule." *Australian New Apprenticeship Training and Assessment System (NATAS)*. Commonwealth / State Joint Project Final Report. WA Department of Employment and Training, APRIL (1991, p.24).

Apprentices were concerned with the employer's attitude to their training. However, this was no surprise because apprenticeships had been terminated and, more to the point, employment prospects at the end of the apprenticeship depended on good results. Cooking apprentice (A88) understood the assessment process to be a form of control to keep students and employers up to date with progress of the apprenticeship.

While (A89) an apprentice in the catering trade thought the reason for assessment was to evaluate student progress against standards of training. This was continuous assessment over a four year apprenticeship period so that skills required by a tradesperson were obtained. She pointed out the safety issue, that proper training increased safety in the workplace to both the apprentice and fellow workers.

Many apprentices found when working in small establishments that the only criteria used for assessment was customer satisfaction:

Well we just sort of well what the clients think of you. If the clients like you, if you've got you know clients then obviously you do then. If you muck up well they tell you why you've mucked up. (A94)// the clients may not be happy because the standards are not high enough (A92)// Well I'm not really assessed in the Salon they leave me to do all my own stuff because I'm good enough to do all that,(A93)// and tradesmen you're doing a good a job as them but getting half the pay (A86)// that's the way we do it at tech but if we do it a different way at work then we do it that way (A88)//.

A hairdressing apprentice (A94) example discussed on-the-job assessment. She implied that the on-the-job assessment boiled down to customer satisfaction of the completed job. This appeared a rough and ready approach but was probably the bottom line assessment in the real world of a small busy salon.

Standards: apprentices

Industry Standards

Some students were aware of the difficulties that existed in the college training system. Lecturers and chefs with cooking experience had views on apprentice training and assessment which seemed to differ from those of the senior management. This might have been a reflection of the problems associated with changes in apprentice training or assessment procedures, or even of the required training standards. However, it was important to note that the lecturers were the real experts in this form of training and should have been consulted on any issues prior to major changes being introduced, otherwise apprentices may not have been trained and assessed to the correct standards.

Apprentice chef (A91) mentioned that the practical training and assessment varied depending on the type of organisation that employed the apprentice. Some apprentices got very good training but others did not and so there was an obvious need for some external body to monitor this activity so that a uniform trade standard was provided.

The reason given by this apprentice chef (A82) for training and assessment was to ensure that students reached the real trade standards required by tradespeople. He saw the value of the basic and background subjects completed at TAFE (Technical and Further Education) for the cooking and hospitality industry, that backed up the on-the-job training given in the workplace. He also considered the assessment process to be an important part of the training process. This student obviously understood the amount of work done on his behalf by the colleges and industry to enable him to reach a trade standard.

It was important that colleges covered a wide range and set some standards in an often diverse industry, which varied from a corner cafe to a large hotel. Also, the students were selected by industry alone and as such tended to range in ability which made the provision of college courses difficult to be designed to obtain the expected trade results. Apprentice (A83) regarded the TAFE (Technical and Further Education) aspect of the apprenticeship important because the student was allowed to practice what was learnt, which was not often the case in the workplace. Nevertheless she considered some of her college work unnecessary, but student's work experiences differed to a great extent in this industry.

An apprentice (A95) in the hairdressing trade considered the Modular training and assessment was effective in maintaining the expected standard. She thought that some of the syllabus was not relevant to her work, which perhaps was valid, but on the other hand she might not have been aware of the fuller picture. The trade had to define the assessment criteria and the skills standards required by their particular industry and so liaison between colleges and industry was crucial in this regard.

However, what was important with any such system was the standard that had been used as the benchmark for the assessment process. The final standard after training of the apprentices would be an indicator if this standard had been set at the right level.

A combination of the theoretical and the practical aspects of training was necessary so that a well balanced skilled tradesperson could be produced. Cooking apprentice (A89) appeared to be assessed in a comprehensive manner to ensure that quality standards were achieved at college. Safety training was included in this programme, which was essential for all young workers in industry. These students were also questioned on their background knowledge to the subject in question that was also essential for the training of skilled tradespeople. Therefore it was important that everything operated to the highest possible standards and the students were trained to the trade requirements.

Many respondents thought that eventual training standards depended more on the individual than the assessment system. Apprentice chef (A91) did not believe that the system was producing skilled people. The low standard expected of the students allowed many poor standard students to pass the course. Students regarded the training as an easy option to get trade status, which would eventually have an impact on the industry as a whole.

Apprentice chef (A91) continued that standards did vary in the industry depending on the place of work. The head chef usually set the standard for his particular organisation. This apprentice believed that the eventual standard achieved was down to the individual concerned. However, if a proper apprentice training structure, with a defined trade standard, was in place the general level of an industry training would be improved.

A student (A92) came up with the same idea and was aware of the importance of having standards in an apprentice training system. Customer satisfaction in most organisations was the critical standard and this student knew it was necessary the hairdressing clients were kept happy in her salon. However, there was a need to train

to highest possible standard within each industry and therefore the defined trade standards were of critical importance to the assessment process of the apprenticeship.

Shortfalls in Standards: apprentices

Sentiments expressed by apprentices were that the module content needed revision because of differing standards. Apprentice (A76) for example thought that some of the modules were easier than others but he suggested it depended on the interests of the students. This showed the difficulties of producing modules of the same standards because individual students would obviously differ in their interests and abilities. He found the modules were consistent and felt they were more theoretical. He believed there should generally be more practical rather than the theoretical work such as calculations, in some modules. Obviously there needed to be a balance between theoretical and practical work, but no harm would be done for the curriculum developers to see if this balance was correct. The apprentice also said he had to cover some unnecessary learning outcomes in regard to his trade.

An opinion expressed by many apprentices again brought up the subject of variation in standards. Cooking apprentice (A88) indicated that sometimes standards and training varied between the college and the workplace. This student resolved this problem by working to the requirements of the workplace. This indicated that more liaison between the college and industry was necessary to iron out differences of this nature.

Apprentice (A90) felt the standard of training in his trade was lower than in other States. He believed the educational system was partly to blame. He also suggested it was easier to pass the chef's course in Perth. This was an interesting comment and if it is true it should cause concern about the assessment system and the trade standards in use. The training of large numbers using the above system might solve the quantity problem for an expanding industry but it did not solve the quality problem for the trade. The national standards should have addressed this type of problem over time but while that was taking place a number of people of low standard may have entered the skilled tradespeople's pool in this particular trade.

Assessor Competency: apprentices

Assessor competency needed to be updated to keep in touch with market place trends to maintain credibility among the student population. Apprentice (A83) had doubts over the training and assessment taking place which, to her mind, appeared to be out of date. Obviously her work experience differed to a great degree in comparison with her college training. It appeared that the customer's choice of food had changed somewhat in Australia and some were more health conscious. She felt for example that there was a training requirement for the preparation of fresh fruit and vegetables which was not part of the college training syllabus. This indicated that colleges had to pay more attention to trends in the market place.

Some students hinted that some lecturers were out of date with the trade. Others had spent many years within the TAFE (Technical and Further Education) and it was useful to provide industrial attachments to ensure a closer link with industry:

I think perhaps more energy should be directed to keeping the lecturers up to date with what is going on, especially in Perth (A82)// I think some of the lecturers are not very in touch with what is happening in the industry right now all they do is work at TAFE. They might go out and have a meal once in a while but the industry is quite different to when they last worked in a restaurant. (A83)// tech to me is easy, you can learn more in the salon but I know that it is something that has to be done you learn all the theory (A94)// It would be easier if they could come and see you working in your salon (A79)//.

Apprentice chef (A83) said that some lecturers were out of touch with what was happening in industry. The obvious solution was for them to have closer contact with the trade, with attachments, if possible. This was important because industries do change over time and the credibility of the lecturer was of major importance. Colleges and industry had to work closer together to ensure that the content of apprentice training was relevant to the needs of the trade and the students.

Testing: apprentices

Most respondents in industry were in favour of some form of final test or examination but the only problem there were no funds available for this essential requirement and so very little was done about it. However the NATAS and Modular examples as shown below did not have final testing.

I would say a more breakdown on the way it is to be marked, like certain areas, not just ticking you've done it. It should be looked at the way its presented, how it looks, taste, not just thrown together and served up.(A81)// We have a practical component which you have to pass and we have a theory component and test and each part of the test has certain sections which cover certain learning outcomes of the module (A76)// Not hard, pretty easy tests, you only get three goes at them (A86)// they are not always reliable because some times you spend a lot of time on one thing and not enough on another thing and when the time comes for the question the other thing sort of got forgotten ((A80)// I also think that the final exams should be practically based but theory oriented (A77)//.

The trade training schedule (NATAS) example required a list of skills to be ticked off when the apprentice had reached the required standard. This apprentice (A81) made the point that the final result should have been assessed rather than the emphasis placed on individual skills taken in isolation. This indicated that there was an argument for final testing in addition to continuous assessment.

In the Modular case, also there was not an independent final testing procedure, which would have been an indicator of the final trade standard achieved. Apprentice (A76) indicated that the Modular system used both practical and theoretical tests for assessment of modules. This was an improvement on the previous system and a general increase in terms of formal assessment. The emphasis appeared to be on the learning outcomes but this needed to be closely linked to the correct trade standards so that expected results were achieved.

This college allowed the apprentices three attempts at passing the relevant modules. The apprentice (A86) did not find the tests difficult to pass. This indicated either the training was very good or the standard was low, depending on your viewpoint. The main point here was that the college had found it necessary to restrict the attempts to

pass in this competency-based system probably for administration reasons. Some apprentices insinuated other reasons for the above situation.

Apprentice chef (A91) suggested the aim of the Modular system was to have students reach a set trade standard and so the above system achieved this objective. However, at each attempt they took exactly the same test until they passed, which surely defeated the objective of any examination.

Electrical apprentice (A76) also pointed out that a series of tests should have been provided, because the retest was usually very similar and sometimes identical which made passing easier. This tended to make a bit of a nonsense of the assessment process if the tests were easier to pass the second time because it was open to abuse and brought competency standards into question.

However, cooking apprentice (A80) suggested that some students reacted badly to the testing situation and sometimes it did not reflect the time taken on that subject in the classroom. The assessment process she described appeared to include classroom tests and assessment by questioning and observation by the lecturer. She understood the reason for assessment was the requirement to achieve a set standard.

Adult apprentice (A77) believed in a final examination which would be mainly practical but also included theoretical aspects such as calculations, and would be a means of identifying excellence. He expressed the opinion awards should be given for outstanding work. He understood the employers were interested in the superior apprentices and the competency-based assessment did not provide this information. The solution here was to adapt the competency-based system to provide further information in this regard.

Selection: apprentices

The lack of selection criteria and the inability of colleges to influence the selection process had resulted in a variation of student standards attending the same courses. However, with a mixed ability group of apprentices the college had to carry out

assessment and training in a practical situation for validity purposes. The lecturer function had changed because of the increased assessment requirement in the Modular training and assessment package.

Apprentice chef (A90) was concerned that some students were motivated by the money in the occupation and showed little interest in the trade training because it appeared easy to pass the course. This indicated that there was need for some selection in this industry, and a closer check on trade standards that were part of the assessment criteria.

Summary

Emergent Themes: apprentices

Ensuing from the discussions with apprentices there were eight emerging themes. The themes were, in an overall sense the same issues that presented themselves in the text as shown in the following extracts seen below. However, there was a difference in perspective and this will be explored in union with other groups, monitors, lecturers and employers.

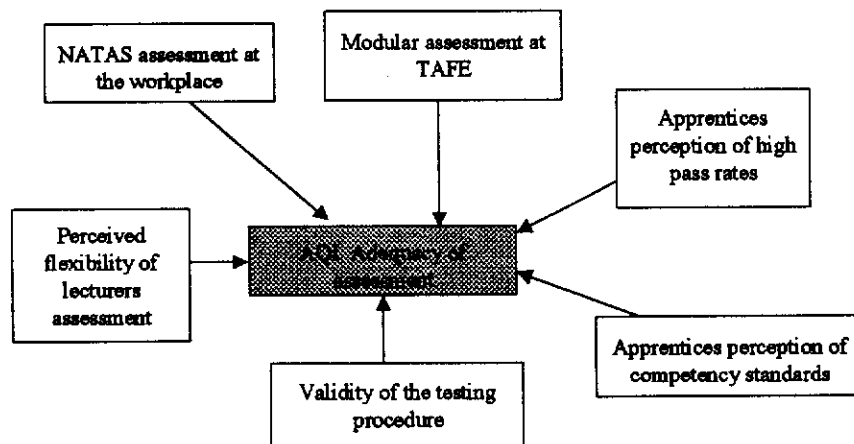
Adequacy of assessment

An apprentice was assessed at work using a trade training schedule,(NATAS). However at college they used a TAFE (Technical and Further Education) module but some students had doubts as to the validity of the assessment because most apprentices passed. The students were not confident that they had reached competency even though they had passed. They also pointed out that a series of tests should be provided, because the retest was usually a very similar test and sometimes identical which makes passing easier.

An apprentice thought the standards were adequate but not strict as the lecturer was allowed a measure of flexibility in the assessment process. Some of the assessment appeared rather subjective and dependent on other factors such as perceptions of the students ability rather than more objective criteria.

Assessment Quality interpolation (AQI) inputs on the theme of adequacy of assessment.

Apprentice Theme 1.



Over and under achiever

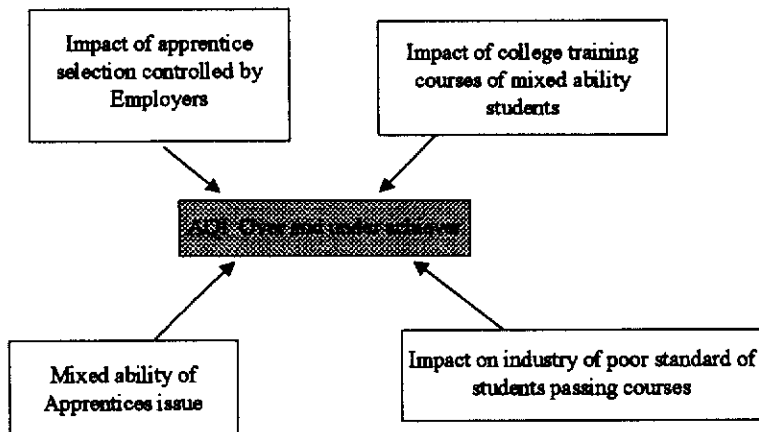
However an apprentice did mention that some very poor students were passing the assessment requirements of the course. This indicated that there could be something wrong with the standards being used for assessment purposes.

There seemed to be a wide range of backgrounds and abilities among the apprentices under training.

A major problem facing colleges running courses was the mixed abilities of their students because these days they did not control the course selection process, as the students were selected by industry alone.

Colleges had difficulty in trying to accommodate mixed ability students from a wide range of organisations and training them together on the same course. Consequently some students found it easier than others depending on their ability or their work experience.

**Assessment Quality Interpolation (AQI) inputs on the theme over and under achievers.
Apprentices Theme 2.**



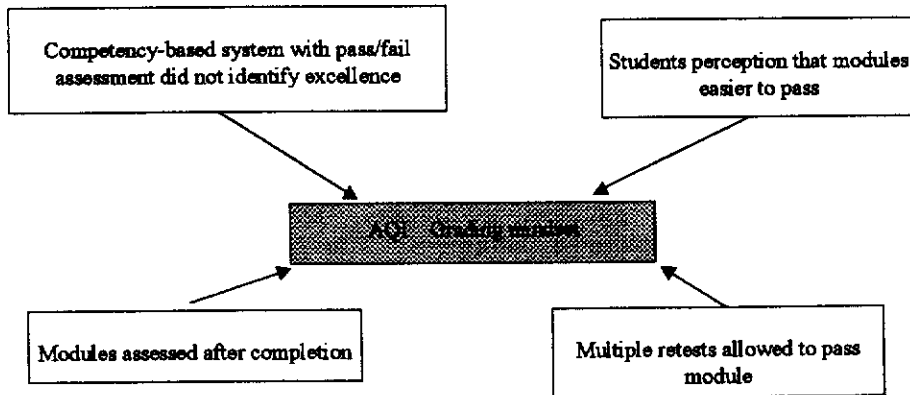
Grading mindset

The competency-based system (National) with its pass or hold (fail) did not seem to identify excellence. Another solution to the marking problem was for the college to give the students a subjective grade in addition to the competency-based pass or hold (fail) method.

A cooking apprentice considered the present assessment system easier to pass because each module was assessed after training. Previously the assessment was conducted by examinations at the end of college term. This example appeared to be a competency-based scheme however it seemed to have a fifty percentage pass rate.

An apprentice chef was of the opinion that the assessment system was easy to pass in the Modular scheme. The grading system of a pass or hold (fail), with many attempts to achieve the pass standard as required, made it easy for most students to complete modules at college.

Assessment quality interpolation (AQI) inputs on the theme grading mindset.
Apprentice Theme 3.



Employer and TAFE provision

An apprentice chef believed that the assessment system could be improved as the standard was inclined to be low and it was not difficult to achieve competence in this trade. Employers in his view did not spend sufficient time training apprentices and most skills were obtained from work experience. He also thought that apprentices were pushed through the college system and in his opinion anyone could become a chef these days.

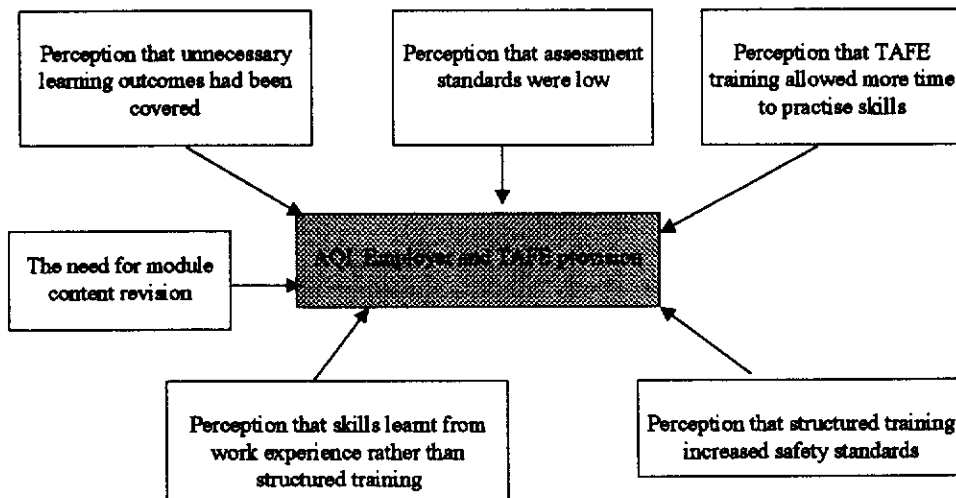
Another apprentice pointed out the safety issue, that proper training increased safety in the workplace for both the apprentice and fellow worker.

An apprentice believed the TAFE (Technical and Further Education) aspect of the apprenticeship was important because the student was allowed to practice what was learnt which was not often the case in the workplace.

One more apprentice mentioned that the Modular training was structured and assessment was completed by using work books, assignments, and an end of module examination.

The apprentice believed he also had covered some unnecessary learning outcomes in regard to his trade. This indicated that the module content needed revision. Colleges and industry had to work closer together to ensure that the content of apprentice training was relevant to the needs of the trade and the students.

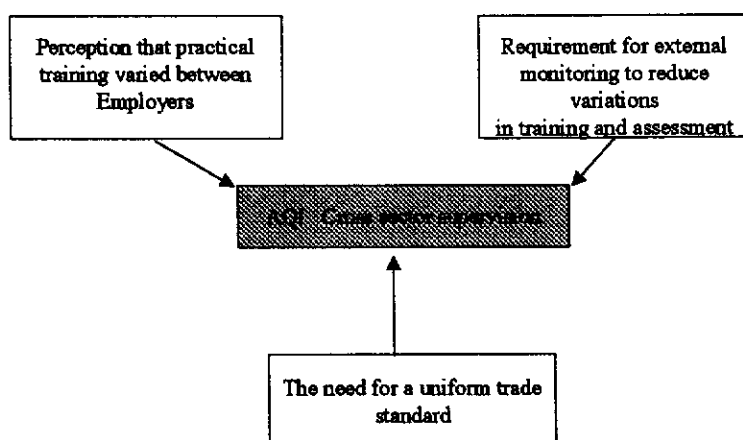
Assessment Quality Interpolation (AQI) inputs on the theme employer and TAFE provision.
Apprentice Theme 4.



Cross-sector supervision

An apprentice mentioned that the practical training did vary depending on the type of organisation that employed the apprentice. Some apprentices got very good training but others did not and so there was an obvious need for some external body to monitor this activity to provide a uniform trade standard.

Assessment Quality Interpolation (AQI) inputs on the theme cross sector supervision.
Apprentice Theme 5.

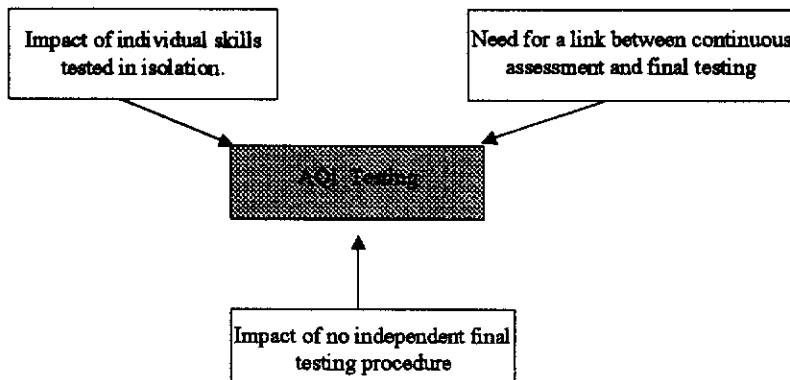


Testing

This apprentice made the point that the final result should be assessed rather than the emphasis being placed on individual skills taken in isolation. This indicated that there was an argument for final testing in addition to continuous assessment.

Also under this system there did not appear to be an independent final testing procedure which would be an indicator of the final trade standard achieved.

Assessment Quality Interpolation (AQI) inputs on the theme testing.
Apprentice Theme 6.



Standards

If any scheme did not have an effective method of assessment it was difficult to see how the final training standard would be recognised or even achieved.

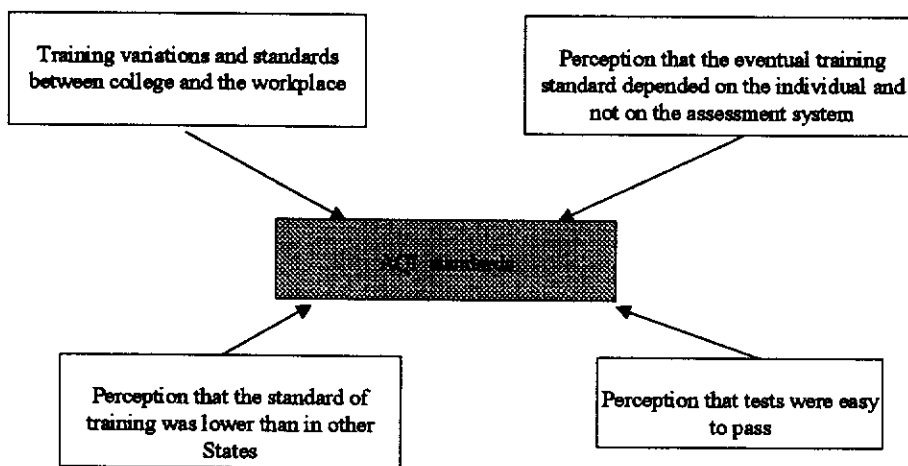
A cooking apprentice indicated that sometimes standards and training did vary between the college and the workplace. This was resolved by this student who worked to the requirements of the workplace.

An apprentice chef did not believe that the system was producing skilled people. He suggested that eventual training standard depended more on the individual than the assessment system. The low standards expected of the students allowed many poor quality students to pass the course.

An apprentice found the standard of training in his trade was lower than in other States. He believed the educational system was partly to blame. He also thought it was easier to pass the chef's course in Perth.

Another apprentice did not find the tests difficult to achieve. This might indicate either the training was very good or the standard was lower depending on your viewpoint.

Assessment Quality Interpolation (AQI) inputs on the theme standards.
Apprentice Theme 7.

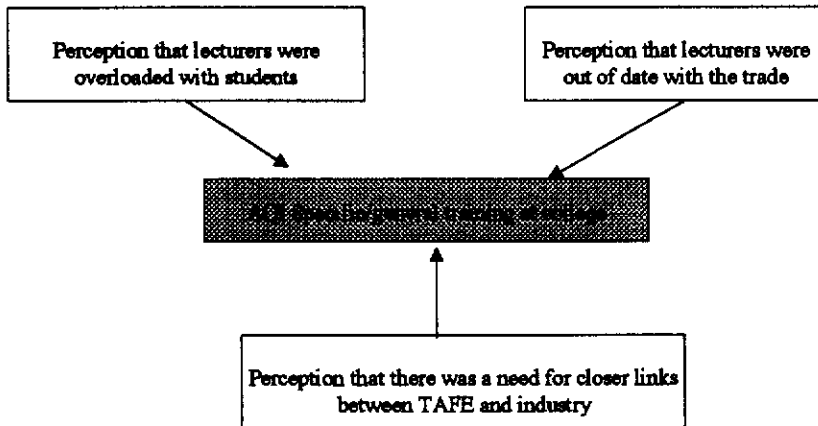


Specific/general training at college

An apprentice said the lecturers were overloaded with students and therefore the instruction suffered. This had an impact on the eventual standard of the apprentice.

Some students thought that some lecturers were out of date with the trade. Some had spend many years within the TAFE (Technical and Further Education) system and it was useful to provide industrial attachments to ensure a closer link with industry.

**Assessment Quality Interpolation (AQI) inputs on the theme of specific/general training at college.
Apprentice Theme 8.**



Chapter 9

Conclusions and Recommendations

Introduction

The following Superstructure and Infrastructure sections provide a background of (VET) and brief summary of the various organisations, reports, assessment and training systems in place at that time.

Superstructure

The major conclusion was that there was a latent intervening process within the application of the NATAS assessment system. A brief contextual overview of the superstructural and infrastructural arrangements shows the national competency-based assessment scheme was introduced without an assessment device that would surface latent interpolation opportunities. This has been conceptualised as Assessment Quality Interpolation. Examples have been presented in diagrammatic form in the findings chapters.

Superstructural arrangements for apprentice training in Australia came under the direction of the National Training Board (NTB). This body had a responsibility for the establishment of relevant standards in cooperation with the states and industry. These included Industry Training Advisory Boards (ITABs). These competency-based training standards were to be regarded as the benchmark for the assessment of training and this had a relevance to the situation in Western Australia. The move towards a national competency-based training system has had a direct impact on the apprenticeship systems in Western Australia which formed part of this research. The move from a local system NATAS to a more national-type Modular system was seen as a result of these initiatives. There was now the National Framework for the Recognition of Training (NFROT), an agreement between the states that came into operation on the 1 August 1992. It may be concluded that these steps would produce greater uniformity in vocational education and training.

The main aim was to produce consistency in the recognised training standards throughout Australia. Competency-based training (CBT) was now an essential component of apprentice training in Australia, with its emphasis on the achievement and demonstration of skills and knowledge to the relevant industry standards. It was important to note that these standards were criterion referenced rather than norm referenced. In other words the assessment was conducted against set standards rather than group levels of achievement, which in conclusion theoretically improved the situation.

The Finn (1991) and Mayer (1992) reports had influenced areas of key competencies. These were generic competencies relating to work in general rather than in specific industries. The Finn report 'The review of Young People's Participation in Post-Compulsory Education and Training' established the idea of key competencies, which was developed by the Mayer committee into employment-related key competencies.

Competency standards had formed the essential component of the Australian Vocational Education and Training (VET) system. These had been produced in consultation with industry and developed for the relevant sectors of apprentice training. This period of development and national accreditation of training standards had formed a background to the research conducted on the two apprenticeship systems (NATAS & Modular) in Western Australia. Both these developments had an effect on decisions taken with regard to the two assessment schemes being investigated. The replacement of NATAS (State) can be seen in these terms and also the rapid introduction of the Modular system (National) with the resultant problems for both colleges and industry. It was concluded that rapid change caused the training providers difficulty and confusion in system operation.

Keep (1986) mentions a similar situation in the UK with the introduction of the Youth Training Scheme (YTS). 'By far the most important direct constraint imposed from the outset on the YTS planning process was the need to move quickly to a new scheme'.

The National Training Agenda, which aimed to improve the apprenticeship system in the long term with up dated national standards, had in the short term caused certain problems at the state or local level. However, as Keep (1986, p.12) identified, change was always a difficult process and pressures placed on systems and individuals caused schemes to break down or failed to provide their full potential.

As stated above, assessment in regard to the Australian Vocational, Education and Training (VET) system was based on national competency standards. However, it was concluded that, in some cases, there was underdevelopment for a number of apprenticeships in certain industries. Some colleges also found it difficult to change systems without the full scheme in place. There were cases of colleges running competency-based training without adequate or defined standards. This tended to create credibility problems for both colleges and industry.

NATAS and the Modular assessment schemes generally, preceded the introduction of the Australian Standards Framework (ASF). The ASF divided competency into eight levels to provide for recognition and qualification throughout both the industry and education sectors. Specifically between level 1 to level 8, Certificate; Trade Certificate; Post Trade Certificate; Advanced Certificate; Associate Diploma; Diploma and Degrees (see page. 35). This allowed for certain flexibility between both sectors and provided a transferable qualification within Australia. Although the lower levels were concerned with the apprenticeship schemes they also allowed the individual further progression up the qualification ladder. In conclusion, this framework could be seen as an important development within the Australian education and industrial areas.

Although this national system must be seen as a progression in training and assessment terms, it was important to establish credibility down at the workplace level. The broad objectives of the various competency-based schemes, understood by the training providers and colleges, sometimes did not translate to the diverse and often varied nature of industrial workplaces. This was a problem because it was at this level that the majority of the various schemes operated. Without cooperation at the workplace any scheme could be seen as a mere paper exercise, however well

intentioned or effective the scheme appeared. The argument that the new framework had flexibility allowing the individual enterprises to participate or not with national standards may appear rational on paper.

Nevertheless, a conclusion from the findings was that when colleges were operating structured courses with broad competency standards and the individual organisation was working to specific standards, competency varied between college and the workplace. This type of variation caused confusion between the individual company and college. Although the diverse nature of industry made this issue difficult, considerable work had to be completed by the course designers and providers to establish competency standards for most industry, which included specific sectors. The findings indicated that most of this work could be achieved by close liaison with industry.

Infrastructure

Although the two apprenticeship training systems under review (NATAS & Modular) had been described as competency-based training systems, they must be seen as variations on a general theme. The NATAS scheme, which was a major improvement on the previous time served model, introduced assessment procedures both in the workplace and TAFE based on standards listed in the trade training schedules. These TTSs were not comprehensive and standards included in many cases were lists of required skills. Findings suggested that they were open to considerable interpretation by the assessors either company, TAFE or industrial monitors. The main feature of NATAS was the external monitoring by monitors provided by the then Office of Industrial Training (Western Australia). Findings suggested that high standards were imposed by monitors based, in the most part, by their own experience as skilled tradespeople. In conclusion this, as a general rule, had a positive effect on the standard of apprentice training during the period of the NATAS scheme.

However, when the Modular scheme replaced the NATAS scheme as a formative move towards a national approach to apprentice training and assessment the external

monitoring of apprentices was discontinued. The reason given was that the Modular scheme had an integrated assessment scheme included in each module. The Modular system, described as competency-based training, also had standards and training outcomes included in the scheme. Although this appeared to be an improved scheme there were problems associated with its rapid implementation. Some of the employers and lecturers indicated a lack of consultation prior to the implementation of the national system. In conclusion, there was some indication that the Modular apprenticeship system was not fully understood by shop floor assessors and findings suggested that this may have been too complicated for this level of operation. However, the difficulties of introducing a national scheme which would please all sectors of industry were often acknowledged.

Modular training, which was seen as a progression on the previous system, was perceived to have been reduced in effectiveness because of the lack of independent monitoring. It was agreed across all groups that any scheme, however comprehensive, needed to be implemented validly and reliably. Variations in the industrial sectors indicated that this was not always the case. Some companies interpreted the scheme in their own way. This meant that standards were subject to considerable variations without the supervision of a unifying body. Additionally, because discrete training modules were assessed on completion rather than as a group of related modules, sometimes skills standards in earlier modules had been reduced. Although some capstone or final modules were in place to ensure integration of standards, there appeared to be a need for a final testing programme prior to certification of the new tradesperson. This at least ensured that all apprentices reached an acceptable standard established by the relevant industry at the end of the training. This suggestion had been made before but was turned down for financial reasons the perception being that government or industry was not prepared to pay for the scheme. It was concluded that without a form of quality control it should not be surprising that standards of training should be subject to variation, and difficult to defend the argument that standards had fallen.

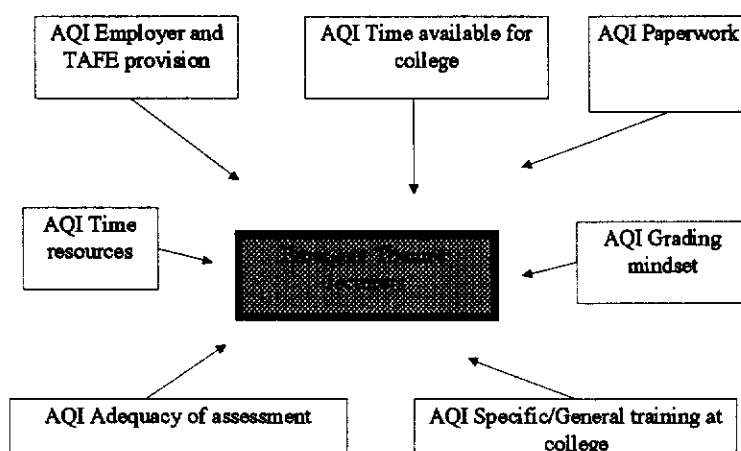
The NATAS trade training schedule (TTS) which was produced as a result of an integrative relationship with industry proved popular because tripartite industry

groups ensured that (TTS) was relevant to local conditions. The (TTS) could have been reviewed and upgraded to include more definitive skill standards to remove ambiguity in the assessment system. This would have increased the uniformity of-the-job assessment because of the standardisation of the criteria. Some training providers retained TTS for monitoring and validation even after Modular was introduced and so in conclusion more consideration should have been directed towards local assessment arrangements prior to change.

Conclusions

Concerns of Lecturers.

Summary of emergent themes that are relevant to the lecturers perceptions of assessment.



TAFE was recognised as having a wide, diverse, and fragmented market to service.

There was conflict between the preference to give grading which was in the educational model and the requirement to follow competency guidelines.

An exceptionally strong theme was the need for employers to be better informed so as to understand the college role in the apprentice assessment process.

There should have been more research on what employers required for apprentice training.

Colleges required to know which modules were necessary and would be supported by local industry before provision was made, as colleges only had a limited time in which to impart knowledge to the apprentices.

Colleges had difficulties in providing adequate training for all apprentices, because it was difficult to strike a balance between the general theoretical content (which would be industry related) and the very specialised content required by employers. Provision of theoretical training background was the responsibility of TAFE or training providers.

The other problem identified within the college system was the limitation of time for retesting of failed modules.

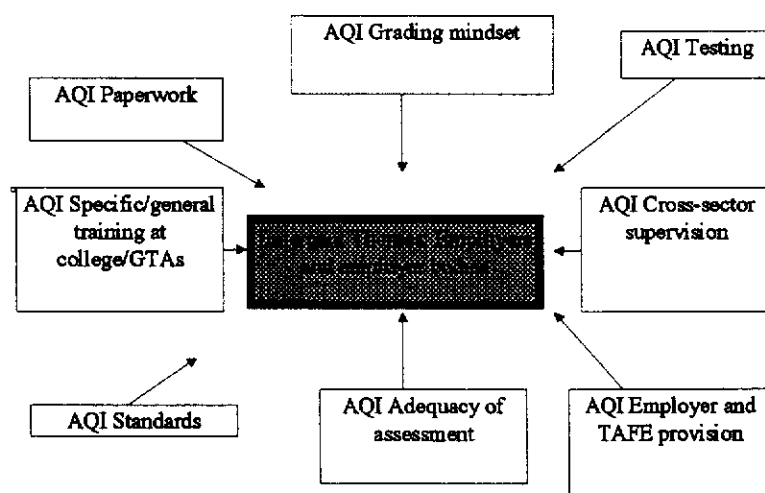
A very strong theme was that of inadequacy of items like comprehensive checklists being available. This inadequacy caused a degree of variation as teaching staff made their personal interpretations.

Lecturers were of the opinion that the students with low ability or poor motivation would have difficulty passing the course in the new scheme.

An overriding concern was the tension between the traditional assessment mindset of grading and the competency assessment of performance to a standard.

Employers differences in adhering to the assessment criteria.

Summary of emergent themes that are relevant to the employers and employers bodies perceptions of assessment.



It became evident that some employers were not aware of the requirements of the NATAS assessment system. Monitors were unequivocal in stating that this fact created major problems for assessment.

A main problem here was an unintended and unwanted differentiation in standards as well as different interpretation of these standards within the system. It was necessary that the national trade standards linked to practical skills was established for each trade.

The modular system presented one particular problem for industry. Within this system the emphasis of the assessment was on the employer. However, it was felt that many employers assumed that all or most of the training was completed at college. The employers it should be noted were responsible for the major share of training in terms of apprenticeship time. However the training given varied with the individual firm, from organised training to work experience.

Employers were putting pressure on colleges to report competency-based results in percentage terms which suggested a lack of understanding of the system. Another problem pointed out, was that a person was deemed competent when the task was completed on the first occasion, but did not include the competency achieved after time and practice. This was an important point as the former indicated the standard on one occasion and the latter on every occasion.

Some managers used both the trade training schedules and modules depending on the specific area of the trade.

A weakness within the system was that as a general rule employers had not been trained in assessment techniques.

Many managers were in favour of final testing if it was combined with continuous assessment. There was a need for a continuous assessment system that identified skill standards required by the relevant trade.

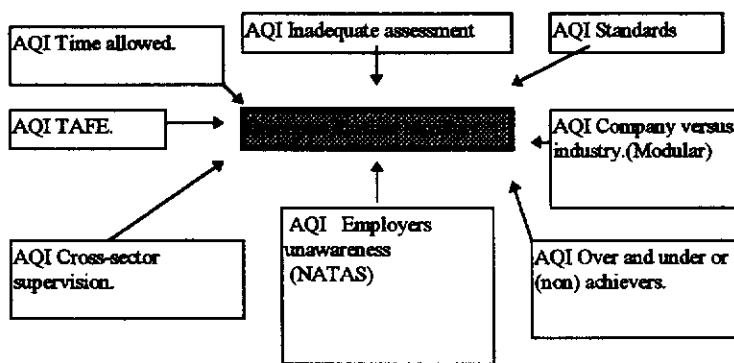
The subject of final testing of apprentices appeared to have many supporters because it was a sound idea which established some form of quality control on the completed training. A view endorsed by respondents was the requirement for final practical testing to trade standards for all apprentices conducted at approved testing centres.

Industry had developed standards for assessment which did not fully fit the assessment scheme. The reason was that the curriculum developers had designed the scheme to assess learning outcomes which formed the curriculum. The relationship between the standards and the learning outcomes were unclear and sometimes incorrect.

Many managers were under the impression that standards varied within the trade and were not confident that the competency-based system was better than the previous method described as a teacher group led system. Finally other managers did not believe that apprentices were being trained to the correct standard required by industry

Concerns of Monitors.

Summary of emergent themes that are relevant to monitors perceptions of assessment.



Time allowed for visits was considered to be insufficient by monitors in the NATAS framework. It was a matter of some concern that every apprentice prior to achieving skilled status did not have to prove his or her competency to an impartial outside body within any assessment system.

The NATAS assessment system was doing an adequate job but there were several problems. One was that it was not a full assessment of the apprenticeship system. Therefore because there was no comprehensive assessment of all apprentices, some passed when in fact they were below standard, rendering the assessment invalid.

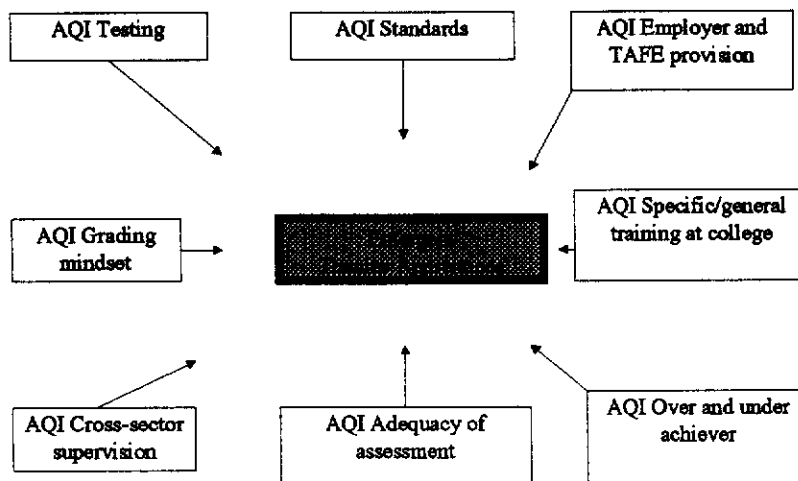
Some monitors suggested a final end test of at least a minimum of a days duration to be a requirement for all apprentices. The ideal testing system was for the apprentices to be given an actual job to complete and then be tested to the recognised trade standard.

Monitors suggested, that assessment standards appeared to be falling rather than rising which was not the result expected when a new system on a national basis was established.

The need for external (and skilled) assessors was strongly endorsed. However it was important that these independent assessors were specially selected from tradesmen and trained in assessment methods. Without the supervisory role provided by monitors who were skilled tradespeople approved by industry there would very likely be no uniform training in Western Australia.

Concerns of Apprentices.

Summary of emergent themes that are relevant to apprentices perceptions of assessment.



The students were not confident that they had reached competency even though they had passed. Some apprentice thought the standards were adequate but not strict as the lecturers were allowed a measure of flexibility in the assessment process.

There seemed to be a wide range of backgrounds and abilities among the apprentices under training and there was indication that some very poor students were passing the assessment requirements of the course.

A major problem facing colleges running courses was the mixed abilities of their students because they no longer controlled the course selection process, as the students were now selected by industry alone. It was most essential that an apprentice selection criteria devised by the trade with consultation with the college system should have been established.

The competency-based system (National) with its pass or hold (fail) did not seem to identify excellence. Some apprentices found the Modular assessment system easier to pass because each module was assessed after training. Previously the assessment was conducted by examinations at the end of college term.

Some apprentices also believed they had covered some unnecessary learning outcomes in regard to their trade. This indicated that the module content needed revision.

Practical training varied depending on the type of organisation that employed the apprentice. Many apprentices believed that the system was not producing skilled people. They suggested that eventual training standard depended more on the individual than the assessment system.

Recommendations

It was important to note that whatever scheme was in operation the knowledge and skills required by the tradesperson were likely to be similar, and the differences would be in the assessment, structure or the quality control aspects. Therefore, the lessons learnt from the research completed on (NATAS & Modular) in Western Australia would have had relevance to any subsequent systems.

With this in mind an important request was made to the respondents. This was to use their knowledge and experience to crystallise what might make an ideal system. The ideal system section which follows was presented as far as possible in the way that captured the authenticity of respondents views.

The Ideal Systems

The final question that the interviewees were asked related to their ideas for an ideal system. They were encouraged to speculate as though there were no financial or other constraints. The intention was to create an opportunity for the subjects to develop their own often-expert views and solutions to the problems identified in the research. It needs to be remembered that the people being interviewed were experts in their field with a direct involvement in the various apprenticeship schemes, and giving

serious consideration to some of the problems generated by this question. The respondents also indicated the complex nature of any research of apprentice training assessment and felt that a number of issues needed to be considered in-depth, prior to the introduction of any apprenticeship scheme. One distinct perception was that possibly some of the wrong people were consulted during the design stages or some valid views were not presented to the apprenticeship assessment system developers. Also there was an indication that these systems have been introduced at too great a pace for often a very conservative industry.

These two observations are evocative of criticisms of the YOPS and YTS schemes, developed in the UK, also at a fast pace. Keep (1986, p.6) reports:

Speed was hence of paramount importance. Whatever was to be devised had, if it was to be effective from the Government's point of view, to be in operation before the next general election.

The question of an ideal system for assessment and training tended to produce a wide range of interesting issues that had relevance to the people at the grass-roots level of industry. Although some of the views expressed were from a personal perspective, they often had wider significance in assessment and training terms.

Monitor (M21) stated, there were differences in the training conducted by large organisations and smaller firms.

Some of the larger organisations had training officers and training departments and could afford to structure their training to the needs of their company. The smaller firms were mainly driven by the work coming through the door and as a rule apprentice training had to fit around this type of workload. Appropriate training, and by that I mean organised and supervised training around a syllabus approved by the trade in question, would be more inclined to produce skilled tradesmen. This was not to say that smaller firms did not produce these results but it was more difficult unless someone supervised the training closely.

The recommendation for smaller organisations was to get involved in Group Training Associations, where small companies grouped together to get the same training advantage as the larger concerns.

Monitor (M29) believed in giving apprentices practical tests in a controlled environment.

It was a view characteristic of all respondent groups. Another option was to have fully equipped testing centres located at colleges or major organisations with government approved outside assessors. The country areas, they said, could be serviced using a variety of methods, for example by a mobile van which took the assessment facilities to the apprentice in question. The only drawback to this scenario was that it may be expensive to operate but it would at least ensure uniform standards.

This recommendation provided standard tests for a whole trade and industry and as such should be more effective than the present (NATAS) system.

Monitor (M31) seemed to say that industry was not entirely happy with the apprenticeship system which indicated that this process had been imposed by an outside body.

The input from industry was crucial to any apprenticeship process and if the above was the case, a conclusion from the findings was that input needed to be increased. The monitor believed the blend between time served and competency-based was at the right level. However, he thought more emphasis should be placed on on-site training. This competency-based training carried out on-the-job also needed to be monitored by trained assessors to be effective.

It was recommended that all these factors had to be in place, namely defined standards, competency-based training, trained assessors and end-testing to produce results, as any shortfalls would result in system failure. Also an increase in monitoring visits would improve the (NATAS) scheme and the competency-based skills had to be defined in more detail and depth.

The monitor (M33) felt that employers needed to be more aware of the apprentice training system and other respondents echoed this view.

This was quite difficult to achieve in the many diverse industries, however it was necessary for the effectiveness of any apprentice training scheme. Any scheme had to be clearly defined and very user friendly at the employers level, even if it was more complex at the administration level. The employers could, for instance, be given a list of jobs with trade standards attached that had to be completed at every stage or year of training. These may or may not be broken down into skills and tasks at this level, but would provide information for the assessors. It should be remembered that the employers were the people that ran any apprentice training and so this monitor made a valuable point concerning employer education.

It was recommended that the emphasis at TAFE should involve basic skills and trade theory linked to jobs on a progressive basis depending on year of apprentice training.

Administrator (A40) felt that there should have been more research on what the employers' requirements were for apprentice training.

The colleges were happy to provide the training but it would appear that the apprenticeship system was not clear to industry, and this may resulted in differences between employers' requirements and the apprentice training provided by TAFE. An advisory role needed to be in place to assist employers in their selection of relevant modules, although this was not as critical in the larger firms with training staff, it seems there was a need in smaller firms. Colleges needed to provide the best service for their area, but have administrative and financial restrictions and courses had to be viable. Therefore, it was essential to know which modules were required and would be supported by local industry from as wide a range of options as possible. Problems would also occur when apprentices changed firms during an apprenticeship. The modular scheme (National) could be specific to an individual firm and therefore somebody needed to provide an advisory function so that the apprentice could be guided within his new organisation. The apprentice's pathway through the variety of available modules was known at this college as the footprint. However, the colleges were only responsible for the off-the-job component and not the on-the-job training and there was a need to match both forms of training to produce an effective apprentice. Employers and colleges needed to get together on a local basis to establish

the training programme for each industry. When this had occurred the next problem was to establish the programme in terms of block release (training given in groups of a week) or day release (one days training per week). The larger companies usually preferred the block release method and the smaller firms usually preferred the day release option.

It was recommended to prevent wasted resources to get the local mix of options right for each individual trade. Some of the smaller firms needed college involvement in on-the-job assessment, especially when specialised equipment was involved. This was an expensive function for a college. This administrator was in favour of some form of outside monitoring for employers.

Lecturer (hospitality), (L43) favoured the idea of a mentoring system of a large group following their own selection of modules.

The mentors had been drawn from a wide background that would include both colleges and industry. This was an intelligent approach but needed some form of monitoring and control to establish an effective method of assessment. It would probably have produced some interesting results for industry and encouraged innovation and helped the trade adapt to change. Competency-based training of apprentices resulted in students being competent to operate in industry up to the required trade standards.

The recommendation was that the aim was to achieve competence and the method of achievement was of secondary importance.

Administrator (A44) made the valid point that competency had always been around when speaking in terms of skilled tradesmen.

Also the customer had usually been the final judge of tradesmen standards and feedback was usually generated by customer complaints. Although this was true it was a very rough and ready and expensive method of establishing tradesperson standards. Usually it was effective in getting rid of the very bad worker or organisation. The only sensible course of action was to establish trade standards and ensure that tradesmen reached these with proper training and assessment.

It was recommended that there was a need for an external body for each trade to ensure that standards were achieved and maintained in my view, and if they are not in

existence they should be established by the industry concerned. This would have ensured that the standards set by industry and other concerned parties were maintained which would safeguard the tradesman's reputation as a skilled person.

Lecturer (L52) suggested that the ideal system was a standardised national system of apprentice training.

This was the obvious solution to a national problem, but the proper apprentice training system and standard had to be developed and implemented from a variety of State and college alternatives with the additional agreement of the relevant trades. This process was being developed and should be regarded as a major step forward in apprentice training. However, any new system needed proper financial backing. Also a proper quality control system had to be established to ensure that the product of the system was up to the trade requirement.

Western Australia was inclined to use the (National) modules as stand-alone entities that were individually assessed at the time of training. The emphasis here had been placed on skills levels rather than on module completion. The lecturer also believed that the theoretical content in the curriculum was too large resulting in students with poor numeracy and literacy skills having difficulties with the modules.

It was recommended that different States, such as in the Victorian example, had other approaches in use and groups of modules were being assessed by means of practical projects.

The lecturer (L56) believed in the concept of competency-based learning in theory but did not consider that it was suitable for all apprentices.

He believed the traditional methods should be employed for some students of lower ability or motivation while the self-paced learning mode should be reserved for the better or more mature apprentices who were equipped to take responsibility for their own progress and training. Nevertheless students should be capable of moving between programmes depending on motivation or ability.

This was an intelligent recommendation for colleges that are faced with the problem of mixed ability students selected by industry.

Manager (M59) was concerned with the training culture and the selection of the people that provided training.

The above manager (M59) was concerned that the emphasis at colleges was more on education than training, which, to be fair, was probably a standard business viewpoint. Industry was concerned with the rapid acquisition of skills and knowledge where time equated with money and so was inclined to see training in those terms. The education culture was different with a view of imparting a broad knowledge base to the student where time involved was less critical. It was important to achieve a balance between these two different viewpoints and so liaison and consultation were of major importance to achieve this end. He was also concerned with the perceived attitudes in the secondary education sector that placed a low value on skilled tradespeople. Most trades required specially selected apprentices with good education but with additional special abilities in a number of practical skills, relevant to a particular trade. Also the financial rewards for skilled tradesmen would be considerable, so this should not be classed as a last option for students. This manager was in favour of establishing programmes in schools for potential apprentices, designed to teach them basic skills that would be of use in the workplace. This would enable most students to find work because they would be more attractive as a potential employee or apprentice. This course could also include safety training that would have some impact on the accident rate of young employees in industry. Nevertheless this intelligent approach would need considerable investment in the education and TAFE sectors. Moreover, it was common sense because new apprentices were of little use to companies and were expensive because they had zero skills and needed constant supervision.

That there was an element of selection in this process was the recommendation, so that students of low ability would be identified early and action taken to direct them down more suitable avenues of employment.

This training officer (T61) was of the opinion that the ideal system of assessment would have been a practical demonstration for the on-the-job component and some form of graded assessment for off-the-job or theoretical training.

The above would have combined two types of assessment procedures but it was certainly easier to grade paperwork in an examination and judge if they had passed or

failed a practical test. However, this may also have caused confusion in the assessment process by combining two different systems that were not compatible. The more sensible approach may have been to look at the system design and in the case of the theoretical paper have divided the learning outcomes into essential and desirable items. Failure in an essential item would then have resulted in failure of the assessment. Desirable items would then have allowed for superior grading to take place. He also mentioned the idea of a final examination that was in use overseas. A very sensible idea when you considered the diverse nature of most trades and the different forms of training that apprentices were subjected to in their apprenticeships. It was the best type of quality control to seek a demonstration of competency at the end of the training period prior to achieving skilled status and would result in a more uniform trade standard.

It was recommended that designated trade testing centres could be set up at colleges or large companies and skill status could depend on passing a competency test along with previous approved training. These centres could also be used to retest tradespeople after serious accidents when competency was in doubt or be involved in recognition of prior learning of overseas tradespeople. Although this would involve some financial investment it was the easiest way to ensure and maintain standards in industry and enhance the reputation of the skilled tradespeople.

Employer (E62) had reservations about the training of apprentices conducted by other companies in the trade.

This view should be taken seriously because he was in the best position to be aware of the present apprentice standards. His recommendation for an increase in more formal training shows there was a major requirement to improve standards, as most employers would not, as a general rule, advocate further training because of the financial implications. Employers wanted quality skilled staff because of the link to business efficiency but did not necessarily want to pay for or carry out training.

An outside agency was recommended to ensure that adequate training was given to produce the skilled standard required by a trade.

A training officer (T63) believed that all training should have been under the control of a National Training body.

A training officer (T63) mentioned that apprentices should have been supervised by some body outside the trade and placed out for training at various organisations. This would provide for a more uniform method of training for each trade. Apprentice training needed to be planned and supervised otherwise it may have just ended up as various forms of work experience, some good, some bad. An outside body would have allowed for fair and independent assessments and on completion of training the prospective employers would be more confident that they would have employed a higher standard of new tradesperson.

A further recommendation was, there were major advantages in having a uniform training policy linked to a recognised standard. Skilled tradespeople could then move throughout the country without the requirement for further training and differences in skills would not retard business expansion.

It goes without saying that the aim of any apprenticeship system was or should have been to produce skilled tradespeople. This was such a fundamental issue that included concepts such as job competency and recognised trade standards. Consequently, if there was any doubt that these objectives were not being attained then it had to be of some concern to the relevant industry. Occupational competency and the ability of any apprentices to prove that they had achieved this objective was the cornerstone of any assessment procedure.

At present we are not [producing skilled tradespersons] I have an opinion on that. I think after the apprentices have actually finished their period of apprenticeship under this national system, there should be a two-year internship, there should be two classes of tradesmen, a first-class and a second-class tradesman. The apprentices should come out after a four-year term and spend two years in the trade as a second-class tradesman before becoming a first-class tradesman. Whether that means doing extra courses at TAFE or in industry, it does not have to be TAFE, and have a record book, training book, on experiences. (T18, Training Consultant, Interview)

This was a very intelligent recommendation, especially when there appeared to be a variation in the standards of apprentices that complete apprenticeships. This allowed for assessment over a greater period and helped to ensure that standards were

maintained at higher levels. Large numbers of apprentices left their original firms on completion of training and this would allow industry to be certain of their trade standard and also allowed them a period of further development ending with first-class status.

Lessons learnt from AQI theory.

- The research indicated that certain factors needed to be in place to ensure success in apprenticeship training: Competency-based training and assessment should be based on total work related skills achievement; Apprenticeship selection criteria devised by the trade with consultation with the college system; Theoretical training background provided by TAFE or training providers; National training standards linked to practical skills established for each trade; A continuous assessment system that identified the skill standards required by the relevant trade; External monitoring conducted by skilled tradespeople selected and approved by industry; Final practical testing to trade standards for all apprentices conducted at approved testing centres.

The aim of apprenticeship training was to provide skilled tradespeople to a recognised standard. This was a starting point for any funding arrangements so that this objective was achieved. The list above represented the essential requirements for any apprenticeship system to give a greater probability of success. Consequently, any system that did not include the above recommendations would, as a result, have increased the danger of failure and provided inadequate assessment of training, which was the quality control of any system.

In conclusion , AQI theory provided a critical reflection device on the assessment systems as perceived by respondents. This suggested an alternative explanation on the controversy in industry encompassing the quality aspects and standards of the skilled tradespersons in Western Australia.

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