

Challenges in developing and applying a workplace assessment model using naturally occurring evidence, reflection, attestation and professional conversation - trial

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Abstract

Workplace assessment of knowledge and skills for national qualifications in the civil construction industries in New Zealand is carried out using traditional methods of assessment such as questioning and observation.

Infrastructure growth and skill shortages have meant workers are in high demand. Due to a number of factors, many people working in the industries though skilled, have no formal recognition of these skills in the form of national or any other qualifications.

Acknowledging the needs and capabilities of individuals, and to help people achieve national certificates, InfraTrain has recently developed and trialed an integrated assessment model based around the collection of naturally occurring evidence, reflection in the form of brief work history, attestation from close workers and supervisors, and professional conversation with a trained workplace assessor.

This paper will describe the challenges found in developing an assessment model flexible enough to be used over a range of industries, for use by candidates in very different working environments, which is robust and quality assured. The paper will also detail the trial itself; how we applied the model to Infrastructure Pipelayers looking to gain the National Certificate in Infrastructure Pipelaying, and share lessons learnt from the experience.

Introduction

In New Zealand the New Zealand Qualifications Authority (NZQA) has two main roles; quality assurance and maintenance of the National Qualification Framework (NQF). Final quality assurance for Tertiary Education Organisations (TEO) rests with NZQA, this takes the form of compliance and audit. At the time of writing education reviews are underway and it is likely NZQA will take more of an evaluative approach to quality assurance. NZQA develops, registers, and supports the NQF and New Zealand Qualifications. In detail, the NQF is designed to provide nationally recognised standards and qualifications, by the recognition and credit for a wide range of knowledge and skills.

The NQF is populated mainly by unit standards (the competencies) and national qualifications. Each standard contains elements and performance criteria and will be shown as being at a particular level (depending on what is required to be competent – ranges from 1 to 10) and have a credit rating (depending on nominal learning and assessment time – ranges from 1 to 120). A variable number of unit standards go to make up a national qualification.

That said; each industry sector is serviced by a specific Industry Training Organisation (ITO). Currently there are some 40 ITOs in New Zealand of which InfraTrain NZ is one. ITOs are government funded, with contributions from industry, not for profit organisations. The closest organisation to an ITO in the UK would be a Sector Skills Council. The main roles of ITOs are detailed below:

- As a Standard Setting Body (SSB) ITOs work with stakeholders to develop competencies (unit standards) and national qualifications (certificates and diplomas) for use by people in the workforce and tertiary education. Currently InfraTrain NZ holds some 750 unit standards and 60 national qualifications;
- Provide quality assurance around the accreditation of TEOs who assess and report infraTrain NZ unit standards;
- Provide quality assurance for the assessment process undertaken by workplace assessors and TEOs through internal and external moderation plans. This is a statutory responsibility delegated to SSBs by the Tertiary Education Commission (TEC) (who are a government funding body);
- Develop and arrange workplace training for the industry they represent. There are currently 125,000 employees and apprentices at certificate and diploma levels. ITOs can provide advice on industry training and can tailor training packages to suit company needs;
- Carry out research into industry needs and education trends;
- Develop resources for use by students, trainees, and assessors;
- Arrange industry training. Industry training can be done on-job in the workplace, or off-job at a TEO, such as an Institute of Technology, Polytechnic or Private Training Establishment.

Infrastructure industry employees work in a wide range of roles including rural contracting, roading, civil construction, utilities, traffic safety, civil engineering, surveying and architecture. The workforce is made up mainly of managers, professionals, technicians, drivers, machine operators and labourers.

Industry workforce

In 1996 there was an international investigation¹ into the distribution of certain skills (such as numeracy and document interpretation) among the adult population.

¹International Adult Literacy Survey (IALTS) (1996)

Such labour skills, it was stated, are strongly linked to the labour market. The findings were that 1 in 5 adult New Zealanders had poor literacy skills. Those that came off worse (in New Zealand) were the older workers (aged between 55 and 64), who performed relatively poorly. The majority of Pacific Island People, Maori and other minority ethnic groups were below the considered minimum level of competence for prose literacy requirements.

Trainee demographics for those entered into a training agreement with InfraTrain NZ show that the proportion of uptake among Maori are around the national workforce average for that ethnic group, however, the industry has a higher than normal Maori uptake. Given that, published figures show the uptake in industry training across all ethnic groups is low (only 5% compared with other industries average of 13%). Completion rates from all ethnic groups (including Pakeha/European) are comparable.

The take up of Women in the industry is relatively poor but perhaps expected given the industry skill sets. The question of why more people in the industry aren't currently in training is complex, however, one factor may well be there are perceived barriers to upskilling and gaining competencies.

InfraTrain NZ current workplace assessment and moderation models

InfraTrain NZ contracts around 350 workplace assessors and 10 Regional Moderators

All workplace assessors are registered with InfraTrain NZ and have relevant industry knowledge and skills which are recorded on their assessor scope. Assessors can at any time apply to increase their scope where they will need to demonstrate they possess those knowledge and skills². In addition InfraTrain NZ, together with most ITOs, require workplace assessors to hold competencies in assessing candidate performance.

There may be some off-job requirement but for most of our industries assessment occurs on-job as the trainee goes about their work routine. Evidence is collected using a number of evidence gathering tools:

- Naturally occurring evidence;
- Workplace documents;
- Written questions;
- Oral questions;
- Observation;
- Verification of having carried out a task – usually by the line manager or employer (they attest to the skills of the trainee).

²Detailed in the InfraTrain NZ *Assessor Code of Practice*

To assist trainees in the collection of evidence ITOs develop assessment schedules which mirror and de-mystify unit standards and prescribe to a degree what is required. NZQA provide a template for assessment schedules³:

TASK	ELEMENT	EVIDENCE	JUDGEMENT
		The answers or performance expected from the learner	<ul style="list-style-type: none">• Defines the standard expected for the task in relation to the element(s) being assessed• Can be quantitative and qualitative

InfraTrain NZ call their assessment schedules Trainee Guides; a number of Trainee Guides are put together, depending on the qualification plan to make up a workbook which the trainee completes or works through. On completion of, and if the trainee is assessed as competent for all unit standards, the qualification is awarded.

The advantages of this system are:

- Straight forward to assess as the assessment has already been designed;
- Simple format for the trainee and assessor;
- The trainee knows exactly what is required;
- Moderation is relatively straight forward.

Disadvantages are:

- It is prescriptive and so lacks flexibility;
- Trainee Guides are costly as they require research, development, review (specifically subject to changes to the unit standard) and administration support;
- There may be duplication and therefore over assessment;
- Rely on written evidence – not all trainees are comfortable writing;
- Trainees already with the required knowledge, skills and attitude still need to work through the workbook – does not cater for prior learning or Recognition of Current Competence (RCC);
- Assessments are not integrated.

The National Qualifications Framework Moderation Policy⁴ requires all standards registered on the NQF to be supported by moderation systems, and expect moderation to be consistent with and supportive of the NQF principles.

³Supported Learning – Developing assessment for unit standards (NZQA)

⁴NZQA Board policy statement on National Qualifications Framework Moderation
TEOs are required to internally moderate their assessment material and assessment decisions, and comply with national external moderation requirements.

National external moderation is the responsibility of the SSB (ITO). It aims to ensure there is consistent assessment to the required national standard among all accredited organisations⁵.

InfraTrain NZ has a number of moderation systems:

- Pre-assessment moderation of all assessment schedules prior to use;
- Post assessment moderation of assessment decisions;
- Site visits to evaluate learning and assessment;
- Assessor meetings and workshops;
- Moderator meetings and workshops; and
- Moderation panel.

In particular, pre-assessment moderation of assessment schedules prior to use helps to ensure assessments collect sufficient, valid and consistent evidence, while post assessment moderation focuses on making an assessment decision based on sufficiency, validity, authenticity and currency of evidence provided. Having pre-approved assessment schedules, which are fairly prescriptive, helps to simplify the moderation process and achieve a level of quality assurance. With little or no assessment prescription the chances of getting an assessment decision wrong increase, moderation therefore, must be robust enough to accommodate this.

Researching and developing an alternative assessment model

In researching an alternative assessment model, RCC seemed a good assessment methodology. All TEOs (including ITOs) have prior learning and RCC policies. In the past InfraTrain NZ has required the candidate to supply a portfolio of evidence to meet unit standard competencies. Anecdotal evidence suggests trainees from some infrastructure industries (road workers, pipelayers, plant operators, labourers, etc) struggle to collect evidence without significant support and guidance when building their portfolio. As the skills required are very practical, by nature, written evidence is generally scarce and will not provide for all the evidence requirements.

In an unpublished paper delivered to an NZQA seminar (1993) Gonczi⁶ called for a broad approach to performance assessment, defining it as a process of gathering data by systematic means for making decisions about an individual.

⁵Detailed in InfraTrain NZ Accreditation and Moderation Action Plan 0101

⁶Gonczi, A in an unpublished paper delivered at an NZQA seminar (1993)

He further states there are advantages to assessment, when:

- The methods are already faithful to the performance criteria being assessed;
- Due regard is given to both the product and process;
- Performance provides evidence of knowledge and attitude; and
- Integrated assessments are used to cover multiple demands.

Devereux (1997)⁷ suggests amongst others:

- Assessment is holistic – not just a ticking off of dozens of items on a checklist;
- Candidates and assessors are equal partners; and
- Assessment is a short process.

Bowen-Clewley and Devereux (1999)⁸ add that:

- Actual performance is the only determinant of competence; and
- Whole task performance is a much better determinant of competence than isolated examples of performance of individual task components.

Devereux (1997) has promoted the concept of assessment through professional conversation. Bowen-Clewley (2008)⁹ states professional conversation is not merely a different way of asking questions, but is a very powerful form of assessment that allows a candidate to demonstrate their understanding and give examples of their skills and attitudes.

Competency International Limited (CIL), whose director is Liz Bowen-Clewley has with others been using professional conversation in assessments in New Zealand for some time.

Requirements for this assessment model were discussed and confirmed:

- Must be cost effective;
- Support and guidance for the trainee going through the process was imperative;
- The assessment model should be flexible and offer a variety of evidence gathering tools; but
- Should be prescriptive enough to guide the trainee through the process;
- Assessment should where possible focus on the whole rather than a particular bit of a task;
- The assessment process should be relatively quick;
- The assessment must be robust from a quality assurance perspective;
- Writing requirements for the trainee should be kept to a minimum;
- Utilise where possible professional conversation;

⁷Devereux, CM (1997) *Rigour without Rigidity*, WA Consultants

⁸Bowen-Clewley, L and Devereux, C (1999) *South Meets North: Love at First Sight: Exploring workplace assessment methodologies that examine whether the marriage, and relationships with in-laws, will survive*

⁹Bowen-Clewley, L in a paper titled *Professional conversation as an assessment tool for Recognition of Current Competence*

- Must be capable of being assessed by workplace assessors;
- Make the model engaging and as simple as possible.

Jack Doherty from CIL was recruited to help in the development of the assessment model, with an emphasis on professional conversation, and to facilitate any assessor upskilling.

The recently developed National Certificate in Infrastructure Pipelaying was selected for the trial.

At level three on the NQF and comprising 153 credits it met requirements in that it was at the correct level for this type of assessment, reflected a typical industry qualification, and many in the workforce were actually doing the job so there would be adequate trainees for the trial.

Although we were developing an RCC model, given the trainee profile, simply describing what was required by stating the competencies, and expecting trainees to collect evidence by building a portfolio would not work. Using a variety of evidence gathering tools, it was thought a simple and informative step-by-step instruction manual in the form of a portfolio would inform trainees of what evidence was required, and detail how best to collect or show it. Support and guidance for the trainee would be crucial to the success of the trainee and ultimately the trial. Regional InfraTrain NZ staff members, workplace mentors, employers and assessors would all provide support to some degree and guide the trainee through the process to completion. However, the onus would still be on the trainee to collect evidence. All assessments had to meet moderation requirements, particularly challenging when using professional conversation and verification. It was agreed to record conversations between the assessor and the trainee and verifier, for moderation and appeal purposes.

Some kind of analysis or skills matching exercise must happen at the beginning of the process where the skills of the prospective trainee are coarsely matched to competencies to see if they are likely candidates. Once started, there would need to be learning options for the trainee, should they not be able to provide evidence of competency. Throughout the whole assessment process, the trainee would show competence against a particular group of skills they know about or do frequently (communication, excavation and pipelaying, groundwater control, etc), rather than against a particular element of a unit standard which they would know very little about. The skill of the assessor would be to take those known skills and transfer them into relevant competencies in the form of unit standards (after all that's what they are assessing against). Research suggests some upskilling of staff associated with this type of assessment would be required. In particular, not all assessors would suit this assessment model; those that do would need to demonstrate their competence. Most would require further training and mentoring. For assessment and to evaluate all evidence it was decided to split

the assessment into two distinct areas; evaluation of the evidence collected in the portfolio (at a distance); and a site visit where professional conversation and verification would take place.

There would need to be some form of trial evaluation in order to prove the concept and make changes. It was decided to use a survey for trainees, a focus group for assessors, and meetings for InfraTrain NZ personnel.

Preferred evidence gathering tools for the trialed assessment model were finalised and are detailed in the table below:

Evidence type	Tool
Written	<ul style="list-style-type: none"> • Workplace documentation • Checklists • Real projects or contracts (reflection)
Oral	<ul style="list-style-type: none"> • Professional conversation • Answers to questions
Practical	<ul style="list-style-type: none"> • Naturally occurring evidence (on-job performance) • Photography and video
Verification	<ul style="list-style-type: none"> • Feedback from employers or line managers or peers • Letters of attestation
Other	<ul style="list-style-type: none"> • Course certificates • Related qualifications • NZQA Record of Learning

The assessment model has been designed to be flexible, collecting evidence using a number of tools; so if for example, workplace documentation and naturally occurring evidence meet all or most of the requirements, professional conversation will be minimal (though the reality from the trial was quite the opposite).

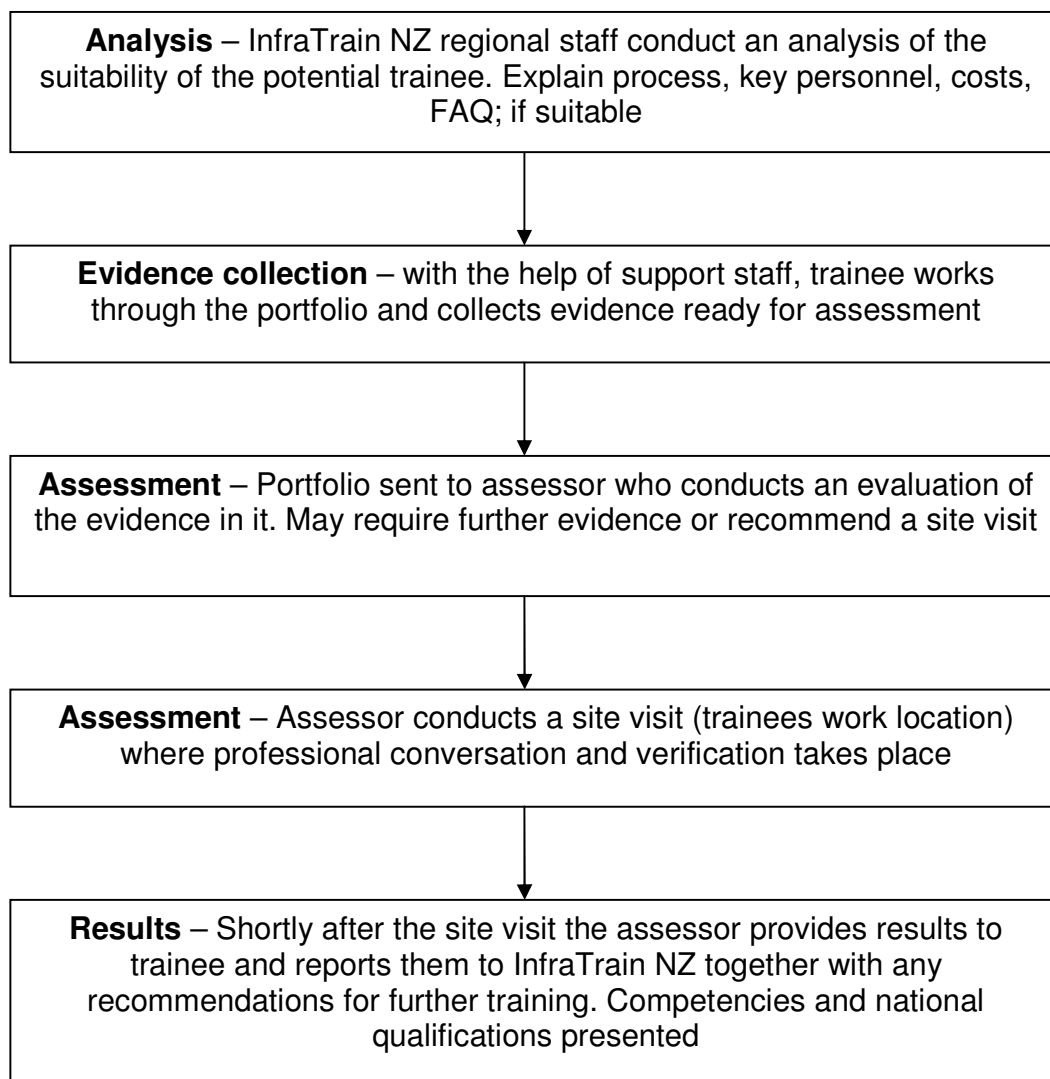
The developed portfolio¹⁰ contains six sections:

- Introduction
 - What's going to happen
 - How to complete the portfolio
 - Self assessment
- Section 1. Personal and candidate support information
- Section 2. Employment history and project/contract details
 - Trainee employment history
 - Details of what the trainee has done on three separate projects/contracts

¹⁰Recognition of Current Competence Portfolio for the National Certificate in Infrastructure Pipelaying (2007)

- Section 3. Documents
 - Workplace documents that may be included
 - Other documents and evidence that may be included
- Section 4. Verifier details (three)
- Section 5. Preparation for assessment (portfolio and site visit)
- Section 6. Assessor reports (for the assessor)

The assessment process from start to finish was estimated to take between three and four months and is summarised below:



Trial

The trial started in October 2007 and finished in March 2008. 22 candidates were identified as meeting the requirements of the trial. All were experienced pipelayers or drainlayers in the civil construction industry wishing to achieve the National Certificate in Infrastructure Pipelaying. Some had water reticulation competencies and skills. Trainee ethnic backgrounds were not recorded. Trainees came from a range of geographical areas around New Zealand. Trainees were employed in small, medium and large companies.

Five InfraTrain NZ regional staff were involved. Training for all regional staff took the form of a seminar focusing on how to conduct a training needs analysis specifically for this assessment model. Regional staff would carry out trainee support and guidance in the usual manner, however, it was established this would be greater than normal. InfraTrain NZ Head Office staff were also involved in the results reporting process.

10 experienced workplace assessors identified themselves as wishing to participate. Though experienced, all assessors required upskilling. This took the form of a two a day workshop, prior to assessment, where the portfolio and evidence gathering tools were discussed in detail. In particular, assessors were schooled in how to conduct a professional conversation. This was followed by a days training, post assessment, to reflect on their performance, discuss the assessment process, and make any recommendations. For the trial only, and for a number of reasons it was decided that assessors would carry out assessments in pairs – one to act as the assessor, the other to observe (moderate) and provide timely feedback to the other.

Post trial results

Of the 22 trainees that took part; 19 completed all competencies required for the national qualification and were awarded the National Certificate in Infrastructure Pipelaying. One trainee dropped out citing work requirements as the reason. Two have completed, and are waiting for an unplanned internal administration process to be completed, after which they will receive their national certificate. All trainees who have completed did so within three months of starting.

Evaluation by trainee. Trainees were asked to complete a survey which asked qualitative and quantitative questions about support provided, the portfolio itself, what they liked and disliked about the process, and possible improvements for the future. 13 out of a possible 22 were returned.

Trainees rated their support and guidance from their employer, mentor, regional InfraTrain NZ staff member, and assessor, between 1 (very poor) and 6 (excellent), with a mean value of 4.5 (between good and very good).

All either *agreed* or *strongly agreed* that; the portfolio introduction was simple to understand and gave the information needed; the skills and unit standards shown

in the portfolio matched relevant to work practices; they understood what was required (section 2) and were able to fill in the details; and they understood what was required (section 3) and were able to collect some documentation evidence.

Qualitative answers were positive about the whole process. One trainee stated:

“An excellent way to recognise experience and gain the qualification”

Evaluation by assessor. Assessors and other personnel met soon after the completion of the trial to carry out a post assessment evaluation. Views were summarised that while challenging, it was a sound and successful assessment model. There was good feedback from the trainees to the assessors. The portfolio worked well to help the candidate collect the required evidence.

Some InfraTrain NZ regional staff provided feedback. Feedback from trainees, assessors and regional staff, with actions for improvements, is detailed below:

Information	From where	Action for improvement
Support and guidance from some key personnel could be improved	Trainee	Increase awareness of the importance of the roles of key personnel in the process. Further training required
One or two competencies selected for this qualification (in this assessment model) were difficult to do (we don't do that!)	Trainee	Increase the number of competencies available in this and future portfolios
Develop a policy document for who should and shouldn't take up this assessment model	Assessor	Policy written and promulgated
Evidence contained in the portfolio evaluation was light which led to a greater emphasis on the professional conversation. Given the number of competencies in the qualification and the time available for assessment, this provided a challenging assessment	Assessor	Ensure sufficiency of evidence in the portfolio before moving to the site visit
Use exemplars in the portfolio to help trainees know what is required	Assessor	Exemplars for employment history and project/contract details have been developed and will be incorporated
Some companies might see this as an easy assessment option to get their people qualified	Assessor	Policy has been written. Initial analysis will provide evidence of compatibility. Skilled assessors and rigorous moderation will reduce any risk. InfraTrain NZ will communicate the

		assessment model requirements to industry
Timing of roll-out of future qualifications using this assessment model is important; the industry busy period is between September and February, where historically they reduce training	Regional staff	Where possible plan future roll-outs
Make the skill/competency requirements simpler to see (in the portfolio). This will help in carrying out the analysis	Head Office staff	More detail provided in self assessment part of the portfolio
Have an assessment checklist in Section 6 of the portfolio where assessors can match trainee work skills to unit standard competencies. Moderation tool	Head Office staff	Developed and incorporated
Is there a tool we can use to check off skills/competencies at the site visit?	Assessor	Assessors are to ensure they are prepared for the site visit. Skills (competencies) not seen and contained in the portfolio will need to be demonstrated at the site visit using professional conversation or verification. The assessment checklist detailed above will help to achieve this.
Does the model meet NZQA quality assurance requirements?	Regional staff	Yes; through its evidence collection tools, assessor skills, assessor partnership, evaluation and pre and post assessment moderation

Moderation

Pre-assessment of the portfolio had taken place. A moderation panel with the aim of carrying out post assessment moderation on a sample of assessments was convened. Of the moderators; two took part in the trial as assessors (though they did not moderate their own assessments), and one who did not. The author (Quality Assurance Manager) and the InfraTrain NZ Moderation Officer facilitated the meeting. Two assessments were found to be compliant (one of which was borderline), the other was not. Appropriate actions and feedback to assessors were provided in a supportive manner. The moderation process added to earlier evaluation of the assessment model. Issues were highlighted to improve the model and process. These were promulgated to assessors and InfraTrain NZ staff members for action (Appendix 1).

Summary

Certainly, a need for InfraTrain NZ and others to acknowledge existing skills of those in the workforce with the awarding of competencies and national qualifications has been identified, and will result in tangible rewards for the individual and industry. The assessment model has been proven in the trial, and together with improvements will form the basis of portfolios for other qualifications. InfraTrain NZ is now developing portfolios for national certificates in civil plant operation and civil construction supervision. Significant points from the trial were:

- Each trainee undertaking the trial had many years relevant industry experience;
- Evidence for competencies generally came from all evidence gathering tools. A particular competence might be demonstrated by one tool (for instance a course certificate), but would more likely be provided for in a number of them (workplace documents, attestation and professional conversation);
- Professional conversation played a key part in eliciting evidence;
- Trainees were generally comfortable talking about their work and what they had done although some required prompting;
- All trainees who have completed had done so within three months of starting;
- A prescriptive portfolio written in a simplistic and engaging way helped the trainee to collect evidence;
- Support and guidance through the process is a key component to success;
- Training and upskilling of assessors, support staff and moderators cannot be underestimated;
- Assessment and moderation feedback both added value to the assessment model and its further development;
- Moderation provided the required quality assurance.

Acknowledgements

I would like to acknowledge the work done by all associated with this trial, in particular Jack Doherty from Competency International Limited.

References

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Bowen-Clewley, L (2008?) *Professional conversation as an assessment tool for Recognition of Current Competence*

Recognition of Current Competence Portfolio for the National Certificate in Infrastructure Pipelaying (2007)

Moderation Summary Report (Part)

Issue

Some portfolios were not filled in completely by the candidate. Section 2 of the portfolio details candidate employment history including their three projects which provides critical evidence for the assessment. These project details form the basis of the assessor's conversation with the candidate and the verifiers; if they are incomplete the quality of conversation will likely be reduced.

Actions

- Ensure Trainee completes the portfolio fully before carrying out any assessment. – **InfraTrain NZ regional staff and RCC assessor**
- Provide examples in the portfolio for the candidate – **InfraTrain NZ head office**

Issue

Varying amounts and quality of workplace and other evidence were included in the portfolio; ranging from comprehensive, including qualifications, certificates, NZQA Record of Learning, completed workplace documents, signed and detailed photographs, etc, to very few workplace documents which were blank (cannot be used as evidence of competency!) and photographs with no detail.

Actions

- Ensure the Trainee is briefed as to what can and cannot be used as evidence. Completed workplace documents must be included, otherwise portfolio assessment will be extremely difficult – **InfraTrain NZ regional staff and assessor**
- The Trainee should be briefed to include letters of attestation if possible (which detail the candidates skills and knowledge), related qualifications if any, and their NZQA Record of Learning. Also ensure photographs have detail. For example which project they relate to. All these are excellent forms of evidence – **InfraTrain NZ regional staff and assessor**
- Modify portfolio where necessary to ensure it captures the required evidence – **InfraTrain NZ head office**

Issue

Research has shown candidates in our industries would rather talk about what they have done, than write about it in detail. InfraTrain NZ RCC model reflects this thinking, however, the evidence still needs to be collected – written or otherwise. Collecting evidence through professional conversation requires skill. One way to look at it would be to understand that whatever the candidate would write to show they are competent, the assessor needs to hear.

Professional conversation and question and answer sessions between the assessor and candidate/verifier were generally too short and lacked focus and did not easily elicit the required evidence. It seemed some assessors were not adequately prepared for the site visit.

This was of course the first time many of us have used professional conversation – not a bad effort but generally we need to improve and focus more on what's important. Allowing the candidate to talk is what we are after, but we need to provide guidance and sometimes ask more questions.

Actions

- Prepare for getting further evidence at the site visit after the portfolio has been evaluated by noting critical evidence still to be found. An 'Assessment Log' could be used for this; assessors could devise their own. Preparation for the site visit must be done before hand – **assessor**
- An 'Assessment Checklist' will be inserted in Section 6 of future portfolios. It is for the assessor to complete. The checklist details all the unit standard elements to be assessed against, and shows where the evidence can be found. i.e. documentation, employment history, verifier and discussion. When assessing against work skills and tasks rather than unit standards (like the standard InfraTrain NZ workbook) it can be difficult for assessors to be sure all the required evidence is captured; when used correctly this tool will enable assessors to match more easily evidence of skills and knowledge to required unit standards. It will be ideal to use after assessment of the portfolio, where evidence is documented and skill and knowledge gaps shown, which should be elicited at the site visit talking to the trainee and verifier – **InfraTrain NZ head office and assessor**
- At the site visit trainees should be prepared to talk about their work experience, knowledge and skills in relation to the qualification they are being assessed against, in particular they should be able to talk in depth about their projects. While the skill of the assessor is important, the onus is on the candidate to show they are competent. Potential candidates should be informed of this at the induction and through the process – **InfraTrain NZ regional staff and assessor**
- Good professional conversation will collect much of the required evidence. Active listening skills and the use of open questions are important and should be practiced (at home with the family or at work!). To simplify things and as an example it might go something like this: - **assessor**
 - *Tell me all about this project from start to finish...* - let the candidate tell their story. And to focus in on something like unit standard 23278 Demonstrate knowledge of and pre-check infrastructure pipes, fittings, structures, and materials;
 - *How do you know you are putting the right pipe in the ground and it isn't going to fail...* - the candidate should talk about pre-checks. If they don't, check their knowledge;

- *What if, when putting the pipe in the ground you notice a scratch/hole/dent...*

Issue

Collecting evidence for this type of assessment is challenging...

Actions

Indirect evidence is just as valid as direct evidence (observations and questions).

Some sources of indirect evidence are:

- Letters of reference or attestation
- Photos
- Audio recordings
- Trophies and awards
- Training records
- Contract records

Many skills and knowledge can be inferred from these sources of evidence. As an example, one source of evidence is product. In the Infrastructure industry if the candidate has successfully laid a range of infrastructure pipes and structures over a number of years and has contract records to prove it, with no re-work, there is a good chance the candidate is competent to lay pipes and structures. As assessors we are looking for more than one source of evidence; so this might come from written (the candidate will likely write about laying pipes and structures in their portfolio, workplace documentation (about laying pipes and structures, and the assessor may ask the candidate and/or verifier specific questions about laying pipes and structures - **all**

Issue

Moderating this type of assessment can be challenging. There are many forms of evidence which cannot easily be matched to unit standards.

Actions

- The assessor must be able to justify the assessment decision by showing some form of evidence – **assessor and moderator**
- The 'Assessor checklist', completed by the assessor, will provide a valuable moderation tool. The moderator will be able to see at a glance where the evidence is located for each unit standard. i.e. workplace or other documents, written by the candidate, attestation, or professional conversation – **assessor and moderator**

Issue

Audio recordings were of poor sound quality. Some of the common problems were:

- Muffled voices
- Too much background noise (dogs barking, busy road, paper or books being shuffled around, etc)

Action

- The assessor should practice using the voice recorder in a simulated assessment scenario - both face to face with someone, and using it with a land line and mobile phone. Critically listen to the recordings - **assessor**
- For moderation purposes the assessor should start each separate recording with an introduction of time, date, the assessor, trainee/verifier and reason (RCC NCIP) - **assessor**