

When quality counts: implementing competency assessment in the workplace.

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Abstract

This paper specifically reports on a comprehensive evaluation of competency based assessment within the mining industry in Queensland, Australia. However, it also addresses a broader problem associated with competency-based assessment already identified in the literature. The qualitative component of the study involved 83 people, nineteen mine sites and seven sites in Brisbane. Interviews and focus groups were used to obtain views about the strengths and weaknesses of assessment practices. A quantitative survey involved a different cohort of 83 people and sought information about the assessment competencies themselves. A number of problems were identified in the training of assessors and the implementation of assessment in the workplace. Given the complex environment in which assessment occurs these findings, like the extant literature, suggest that careful scrutiny and reconceptualisation of assessment practice may be warranted.

Competency-based assessment

The role of the assessor is 'to reliably determine the competencies or lack of competencies of an individual when assessed against a prescribed benchmark'.

(Van Berkel, 1996, p. 8)

The training and workplace reforms of the early 1980s were aimed at improving the skills of the Australian workforce to increase its competitiveness in a rapidly globalising, neo-liberal world. Since that time the development and recognition

of competency standards for work have become an integral part of the vocational education and training landscape. A vital component of the process of competency attainment has been the training of workplace assessors, who are able to assess competence on-site and as a part of their normal work. This training involves completion of the Workplace Assessor component of the endorsed training package, the Certificate IV in Assessment and Workplace Training. It needs to be noted that since undertaking this study, the package has been rewritten and is awaiting final endorsement as the Certificate and Diploma in Training and Assessment. However, this study was more concerned with the overall process of competency assessment than the content of the package itself.

Competency-based assessment has been an extensively debated issue in the vocational education and training literature since the early 1990s. Docking (1998), in a review of literature up to that date, concluded that there was an urgent need to undertake further research into the effectiveness of competency-based assessment. Furthermore, Robinson (1998) asserted that the fundamental question as to whether assessor training programs were producing competent assessors was unanswered. Booth (2000) reported that there was confusion among practitioners about the key features of the implementation of competency-based assessment. Furthermore, in an extensive review of general assessment practice in Queensland, Smith (2000) concluded that there was a need to improve the quality of assessment in terms of validity, consistency, usefulness and cost effectiveness. Similarly, Clayton, Booth and Roy (2001) suggested that confidence in assessment decision-making needed to be improved.

In some preliminary research into the problem of assessment, Jones (2001) demonstrated what psychologists had known for a long time, that consistency between assessors can be difficult to attain. She went on to point out that the training packages do not take into account the complex contexts in which judgements of proficiency are made. This is an important point but the solution is not, as she suggested, to provide more guidelines for assessors. More cogently she noted the need to recognise that inconsistency has its place as an expression of professional autonomy. Validity is a key issue in an activity such as competency-based assessment and was highlighted in a widely quoted paper by Gillis and Bateman (1999) about problems of validity and reliability in competency assessment. In that paper it was suggested that there was a need to further research validation processes used by workplace assessors, and to identify those factors that influence the assessor's judgement and how these judgements affect validity and reliability.

The issue of validity was the focus of an important study undertaken by the National Centre for Vocational Education Research (2001). A validity framework provided was used to interview people involved in assessment practice in six case studies. The study found some major problems associated with the validity of assessment: a reluctance on the part of some to allow scrutiny of their assessment practices; poor record keeping; lack of uniformity in the use of recognition of prior learning and current competence; unresolved issues regarding the notion of holistic assessment;

unresolved issues about the use of grading in assessment; and attitudes towards assessment. It is interesting that all these problems are associated with practice, rather than the standards themselves.

There have been consistent calls for gathering multiple sources of evidence and more holistic assessment (e.g. Hager, Anthanasou and Gonczi, 1994). While not directly focused on assessing competencies, a study involving 195 interviews in various industry sectors in Australia reported by James (2001) suggested the need for a more holistic approach to knowledge and knowledge-making in workplaces. Success of competency-based training, she stated, was dependent on 'the expertise and professional judgement of practitioners, in reinterpreting and supplementing the standard training program where necessary' (2001, p 320).

Thus there is some evidence from the literature that there may be problems with the way in which competency is assessed in the workplace. Early in 2002 The Queensland Mining Industry Training Advisory Body (QMITAB) was advised by members of its constituency of concerns about the efficacy of assessor training. The mining industry in Queensland had readily embraced the qualifications framework and competency-based standards, and already had a significant history of ensuring the workforce had the appropriate skills and knowledge. Several hundred people had already undertaken the workplace assessor program. The concerns by people within the industry, supported as they were by the literature, provided the impetus for this study, which was funded by the QMITAB. Thus, the aims of the study were to investigate the effectiveness of assessor training in the mining industry in Queensland and to identify ways to improve its implementation.

Methodology

The conceptual model employed in this evaluation was Kirkpatrick's (1994) outcome-oriented model of program evaluation. This model advocates assessing the impact of a training program at four levels: reaction; learning; behaviour; and application of results. Two approaches were used to obtain data in this study: interviews and focus groups to obtain the views of people involved in assessor training at mine sites; and a survey of those who had undertaken the assessor program.

Interviews and focus groups

The purpose of the interviews and focus groups was to obtain in-depth information about the effectiveness of workplace assessor training and its implementation at mine sites. The method used was based on Grounded Theory (Glaser and Strauss, 1967), which provides a number of well-established techniques that increase the rigour of qualitative research.

In total 39 people were interviewed and 44 attended focus groups. This sample represented nineteen mine sites across Queensland, and seven other sites in Brisbane. Sampling was based on 'snowballing', which involves asking informants from whom

further information might be obtained. Sources were also selected on the basis of where disconfirming evidence might be found. Sampling was ceased when saturation was reached. This occurred when new information was not being obtained despite all efforts at finding disconfirming evidence.

Interviews and focus groups were centred on the question of the effectiveness of the Workplace Assessor training and implementation and how it might be improved. Using a convergent interview technique, follow-up questions depended on the initial response of the interviewee. We were concerned that responses needed to be driven by the data rather than the interests of the interviewer.

The focus groups were somewhat more structured but still sought feedback from participants about how the effectiveness of the training could be improved. Participants were provided with a copy of the three units on planning, conducting and reviewing assessment.

The questions posed to individuals and focus groups were based on Kirkpatrick's (1994) model and concerned: motivation (why do it?); reaction (what was the experience like?); learning (what did you learn, what did you find useful and not useful?); application (could you apply what you had learnt and what problems did you have?); and results (what outcomes did you achieve, does the package work and does it produce competent workers?).

Data from the interviews and focus groups were subject to coding procedures consistent with Grounded Theory. This process involved the identification of themes using the conceptual model provided by Kirkpatrick (1994) mentioned previously.

Survey

A survey was undertaken to obtain feedback about the specific competencies in the Workplace Assessor units. The questionnaire was in three parts: general questions about the Workplace Assessor training; questions about how often the competencies were applied in the workplace; and questions about the usefulness of each of the competencies. Respondents were asked to indicate on a 7-point Likert scale their opinions about application and usefulness. In addition we asked for some demographic information: age; gender; level of education; sector worked; size of mine; whether a 'train the trainer' or similar course had been completed; year of completion of the Workplace Assessor program; and why the program had been undertaken. The questionnaire was piloted on a small group and appropriate amendments made. Questionnaires were distributed to a random sample of 100 people who had completed the assessor training. A total of eighty-three people returned the survey.

Qualitative results

A number of core themes were drawn from the interview data and are described in detail below. It is evident that there is considerable variability in a number of areas such as selection of assessors, training provision, follow-up of assessors, collaboration

between provider and workplace, actual application of assessor competencies in the workplace, and understanding of competencies,

Competing priorities in the workplace

Respondents indicated that there needed to be a clear understanding in the industry of the importance of competency standards. It appeared that the competing demands of output while simultaneously meeting legislative requirements of having a competent and safe workforce creates ambiguity. Other studies (e.g. Mulcahy, 2000) have suggested that competency can be understood in different ways, depending on the context, and that legislation may drive the competency agenda. In a study of competency-based assessment in Queensland, Smith (2000) found that not all employers had a commitment to conduct workplace assessments due to: their need to focus on 'business' itself and not be sidetracked; a lack of belief in the competency-based system; and lack of expertise. In fact, attitude to competency attainment and assessment by those in the workplace may be a critical issue to its success (NCVER, 2001).

Selecting workplace assessors

Employees were most often selected for workplace assessor training on the basis of their technical expertise and competence. Attributes such as competence, confidence, good communication skills, literacy, thoroughness and trustworthiness were emphasised as essential in a good assessor. At some sites and for various reasons it was stated that 'not always the best operators are chosen' because the best operators were needed in production. Others might have been chosen because they were 'nice blokes'.

Professional development was the most important reason given as to why people became assessors. The value of the qualification and the status/prestige of the position were equally sought after, followed by opportunity for career advancement. The second most important reason for becoming an assessor was generated by the business needs and legal requirements from within the mining industry. To a lesser extent people said they took on assessor training because they had a personal interest in it or because it provided job variety.

In general, the characteristics and motivation of workplace assessors are poorly researched. In an extensive review of the contribution of competency-based training, Mulcahy and James (1999) noted that it may have provided workers with the power to control their own training. The commitment to assessment by those who choose to assess is important to the achievement of a safe working environment. Smith (2000) found in his study that there were instances of unprofessional and inadequate assessment processes. Given the push for increasing the qualifications of assessors (National Assessors and Workplace Trainers, 2001) a great deal of thought needs to be given to who would make an effective workplace assessor. Smith (2000) claimed

that many trainers and assessors lacked the educational skills to provide remedial assistance to those experiencing difficulties with meeting competency requirements in the workplace. James (1999) stressed the need for tacit judgement on the part of assessors, which suggests that the experience of the assessor is an important factor

Literacy issues

Literacy levels of people undertaking the Workplace Assessor training was an issue for approximately half of the mine sites visited. The wording of the competencies, the training and the requirements surrounding assessment itself was thought to be very challenging for many who may have left school early or experienced even marginal literacy difficulties. In a recent review of the assessment package conducted by the National Assessors and Workplace Trainers (2001) it was suggested that further development of the package needs to consider using plain English in the standards and literacy problems among assessors were identified as a major concern. Smith (2000) also found that language and literacy were seen as major problems in the ability of people to make assessment judgements. It will be interesting to see if the revised package, Training and Assessment, adequately addresses this issue and the one below about content.

Content issues

Units of competence in *Plan Assessment* were described as 'hard' particularly in relation to the project and presentation. The time constraints imposed on completing the project were particularly problematic with up to 50% of those undertaking assessor training failing to complete.

There were differing views about the usefulness of the competencies found in the package. Overall the content of *Plan Assessment* was thought to be useful for some mines, particularly small mines, but it was generally not applied at all sites because of the utilisation of 'off the shelf tools'. On the other hand, the unit of competence *Conduct Assessment* was seen as useful and appeared to be applied universally. *Review Assessment* was generally thought to be useful but was not always applied as taught or even used at all.

In their review of the workplace assessor training package, the National Assessors and Workplace Trainers (2001) recommended that the content needed to be revised to meet the requirements of a broader range of practitioners from those skilled practitioners in RTOs to the part-time assessors in organisations. James (1999) suggested that there is a need to ensure that assessors are not only skilled practitioners but also have a good grasp of educational and training principles. This issue may be addressed with the implementation of the new Training and Assessment package.

The wording used in the Standards and subsequently found in the Workplace Assessor package was an issue at several mines This problem in relation to language and literacy has been identified in previous studies (i.e. Smith, 2000).

Quality of training

Respondents thought that there was a great deal of variation in the training of Workplace Assessors due to the: '*different providers*'; '*different approaches*'; '*different time frames (1-7 days)*'; '*different materials used*' and '*different locations*'. Over half of the mines visited indicated they were happy with their provider while others expressed grave disappointment. It was clear that higher quality of training was associated with close collaboration between the employer and the provider, getting feedback about participants, and tailoring to the specific needs of the industry and site.

These concerns about variability in the quality of training providers have been expressed in a number of other studies (Docking, 1998; Harris and Simons, 2000; Johnston and Holland, 2000; National Assessors and Workplace Trainers, 2001; Smith, 2000). There is evidence that training tends to be designed only around stated competencies because these are assessed, and as a result, the focus is more on the 'assessment package' (Smith, 2000 p vi) rather than training. As a result, only the bare minimum is taught in some assessor training programs and the broader educational abilities are not obtained. Perhaps, as James (2001) has suggested, there is a need to consider alternative and additional approaches to competency training and, hence, assessment.

Others agree that assessor training is more effective if there is a partnership between trainer and employer (Mulcahy and James, 1998, 1999). Thus, 'Context, not simply content, underwrites the interpretation of competency standards' (Mulcahy and James, 1999 p.122). The quality of assessor training might be improved by ensuring it is tailor made and provided on-site. This would also help with other problems such as completion of difficult assessment items that are undertaken in the workplace, and follow-up of assessors after training is completed. Given the available evidence, it is difficult to see how attendance at a generic assessor training program conducted with an 'off-the-shelf' program is at all likely to produce quality outcomes at the workplace. As James (1999, p.154) concluded, 'The learning and assessment of practical knowledge involve tacit knowledge and judgement, that are context specific and value laden'.

Skills currency

Skills currency was raised as an important problem given that assessors might not use some of the competencies very often at all to maintain their confidence. Booth (2000) also suggested that there was a need to increase confidence in the assessment procedure by providing on-going support for assessors when they had completed their training. This supports the notion, mentioned above, of the need for a closer partnership between employer and provider. Johnston and Holland (2000) have pointed out that as the demand for more specialist skills increases then so does the demand on the skill of the assessor. Assessor skill development may need to be ongoing rather than based on

a basic training. Cornford and Beven (1999) suggested that novice learners frequently need close supervision when applying new competencies compared to those who are more expert. It appears that assessors have difficulty in maintaining their skills as assessors in all aspects of the training package, particularly plan and review, because they infrequently use these competencies.

The role of management

The responsibility for the outcome of the Workplace Assessor training also lies with the mine management. Whilst this was not a strong theme it was raised at one focus group and several mine sites. When it comes down to it, '*working with the standards*' and '*wanting a competency-based system*' was considered to be the responsibility of management. The outcome was really up to the 'industry and the providers'. Some companies wanted a complete assessors' package in 3 days, including Train the Trainer and Assessor. In this sense the companies '*are forcing*' the providers and in the end they will '*get a provider that will do it*'.

The ability to obtain quality outcomes in the workplace from the competency-based system depends a great deal on the commitment of the employer who will drive implementation in a number of ways. As noted earlier, this problem has been identified by others (i.e. Smith, 2000).

Gathering evidence

A key problem, because of the legal implications, was that of gathering appropriate evidence of competency. It was stated that assessment tended to be a single event at a particular time and in particular conditions. For example, one might assess a person to be competent driving a vehicle in dry conditions but this may not indicate competency in of driving in wet conditions.

That assessment tends to be summative rather than formative, is 'one shot', and needs to consider more holistic approaches, has been raised frequently by others and is a major issue in the debate about the efficacy of assessment. Griffin (1995) argued that there are levels of competency and, for example, a single driving test is not a test of driving ability. Similarly, Chappell (1993, p 5) indicated that '*...widespread access to various forms of assessment is a vital part of an equitable and cost effective system...*'.

The idea that assessment should take many forms and be more holistic (Hager, Anthanasou & Gonczi 1994; Gonczi, 2001; Hall, 1996; Mulcahy and James, 1999) is an important addition to the behavioural underpinnings of competency-based assessment and clearly requires a broader view and involvement on the part of assessors and workplaces (Hase, 2003). Smith (2000) concluded that there is an over emphasis on summative assessment and the quantity rather than the quality of assessment.

Confidence in the assessor training

Approximately half the mines visited indicated they were confident that their staff were competent assessors after completing the assessor training. However, other training coordinators and managers voiced concerns. Confidence in the assessors upon completion of the training was increased by having a good provider and tailoring the course. However, the provider is still only able to work with the standards as they are and has the job of making sense of them. Hall (1996) has suggested that transparent quality systems provide a level of confidence in competency-based assessment.

Survey results

Description of the sample

The bulk of respondents (49%) were in the age group 36-47 yrs and 83% were under 48yrs of age. This distribution may reflect the tendency for more experienced operators to seek the assessor qualification. Only 8% of the sample were female. The majority (55%) were from the coal sector, 25% from the metalliferous sector and 8% from the extractive sector. Forty-nine percent of respondents worked in mines with between 101 and 300 persons and 83% had completed a train-the-trainer qualification. Fifty-four percent of the sample completed assessor training in 2001 or 2002.

Interestingly, when asked about motivation to undertake assessor training, 56% said that they were nominated. Personal satisfaction (46%) was also a key motivator. Pay, peer pressure, career and a quest for qualifications were minor factors in deciding to undertake training. It is not clear the extent to which this selection is based on ability.

Questionnaire responses

There was general satisfaction with the assessor training in terms of its usefulness and applicability. The reported frequency of application of competencies associated with planning and reviewing was less than for conducting assessment. This accords with the findings of the interviews and focus group data, which suggested that planning and reviewing assessment were undertaken infrequently. As was identified in the qualitative study, competencies associated with conducting assessment were also seen as more useful than planning and reviewing. However, in general participants did not feel the need to change the content of the assessor training.

Respondents did not have a negative view on the wording of the competencies, which is somewhat different to the opinions expressed in the interviews and focus groups and the findings of previous studies (Smith, 2000). The survey findings supported the contention from the qualitative study that assessors need to be more carefully chosen for training using means in addition to peer and self-selection.

One Way Analysis of Variance showed that there were no differences in opinion due to any of the independent variables (age, gender, education, sector in which employed, mine size, completion of 'train the trainer' program, year of completion, and motivation).

Conclusion

Since completing this study a number of changes have been made to the assessor training package itself and, as noted above, the newly named 'Training and Assessment' certificate and diploma will probably be released in late November 2004. However, this paper was more concerned with problems associated with the implementation of the package and what happens in the workplace, than with the contents of the package itself. In fact, we found that there was a generally high level of satisfaction with the competencies themselves, except for issues of complexity and relevance when it came to use in the workplace. It will be interesting to see whether the new certificate and diploma resolve these issues.

Nonetheless, this study and the literature suggest that the actual implementation of assessor training and, subsequently, assessment itself is a complex issue taking place as it does in a social environment. It is clearly not enough to send willing employees off to a training course and then expect that all is well and that legislative requirements have been met. Organisations, trainers and providers need to carefully manage assessor training and follow-up as an important quality issue.

The problems with assessor training and, subsequently, assessment itself identified in this study and the literature are the symptoms of more systemic issues that need solutions at a systemic level. One important issue is the acceptance and valuing by management of the importance of adequately implementing competency-based training in their organisations. This would involve integrating all aspects of competency based assessment into normal quality practices.

A second issue is the development of a partnership (or partnerships) between the mindful organization and a high quality provider who can provide appropriate training and ongoing support on-site. Lastly, there is the vexed question of the validity and reliability of assessment practices. There has been a consistent call in the literature, supported by this study, for more holistic and varied forms of assessment consistent with what really happens in the workplace.

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