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ABSTRACT

Competent performance is described in terms of the competency to be performed and a set of standards applied to that performance that covers both routine and nonroutine skills. The competency-based approach brings flexibility to a training and education system. It allows the development of a continuum of competence statements from basic to complex. The most important element of a competency-based system of training is the final decision-making process--that is, whether the competence can be inferred from the performance evidence collected. The decision to recognize a performance as satisfactory and to infer competence is the basis for the success of the system. The standards specified when describing the competence must be validly assessed. Competence is based on matching the necessary level of knowledge with an appropriate performance. (NLA)

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ADELAIDE 1991

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INTRODUCTION

Many of the criticisms of competency-based education and training seem to be founded in the belief that competency-based programs consist of interminable lists of skills to be mastered by the students or trainees. The critics apparently assume that competency-based programs are the old behaviourial objectives programs revisited. The fact is that most people associated with competency-based training believe the behaviourial objectives approach has been sufficiently discredited to make it an inappropriate model for their work.

The behaviourists require that all objectives of a program be prescribed and tested. The unfortunate consequence of this has been the breaking down of programs into more and more discreet skills and a consequent trivialisation of the educational or training program which attempts to deliver those skills.

The new word being applied to competency-based programs in the vocational area is holistic. In developing programs, every effort is made to avoid thinking solely in terms of individual skills. A competence usually involves several skills and it is a combination of these skills, each with their own standards and conditions, that is the basis for the present competency-based approach. Having said that, it should be pointed out that some workers in the vocational area could probably have a more holistic approach than they have at present. Everybody needs reminding at some time or another that the whole of a competence is greater than the sum of its parts. Furthermore, competence needs to be defined in a way which takes account of this holistic approach.

Unfortunately, definitions of competence abound. However, when the subject is occupational competence, most definitions make reference to meeting the demands or expectations of the workplace. But this immediately throws up

another potential source of confusion because competence is not observed in the workplace, rather it is performance that is observed. Competence must be inferred from performance.

Our vocational training system could have been described as performance-based to avoid this confusion, but the term competency-based has achieved such wide currency that to change it now might cause more trouble than it is worth. Nevertheless, it is a good idea to keep in mind that competency-based standards are in fact performance-based standards.

The following definition of competence is related to work the National Training Board is sponsoring for the establishment of competency-based standards for trainers. In particular, workplace trainers - these are the people whose job it is to train others to perform satisfactorily in the workplace.

A Definition of Competence

A competent performer is somebody who does something to a satisfactory standard. We have competent tennis players, competent musicians, competent electricians, and so on. But, when the word is used in this way, the competent performance cannot be separated from the circumstances in which it occurs. The competent tennis player in a country club team is unlikely to be seen as competent if, by some unfortunate twist of fate, he or she were playing Boris Becker or Steffi Graf. Simply describing a performance such as playing tennis, playing music or doing electrical work as competent does not tell us enough.

Let us consider for a moment that we are a manager seeking a trainer to train other workers on a one-to-one basis to operate a particular machine in the production line at our factory. If we were told that there was only one applicant, who seemed to be competent, we still need to know more before agreeing to employ that person. For example: can they prepare a training plan, deliver and assess a training program, keep records of trainees and so on? To be more precise, can they, for instance, prepare a training plan which addresses relevant occupational health and safety issues? Can they maintain accurate and legible training records? In other words, to have any meaning, competent performance must be accompanied by a description of the expectations of what needs to happen in the workplace. These descriptions of

expectations are referred to as standards and without them 'competent performance' has little meaning.

There is a set of routine training skills associated with planning, delivery, assessment and record keeping. So if our applicant can do things like show us training plans they have prepared that address occupational health and safety issues, in a way we find satisfactory, and we can also establish they are able to keep accurate and legible records, then we are starting to produce a statement of competent performance that is understandable. This is because it explains the competence that is being performed (workplace training) in terms of the standards of the routine skills associated with that performance (planning skills, accurate and legible record keeping, etc.)

However, a statement about standards of the routine skills the trainer performs is not enough. We know being a competent trainer involves other non-routine skills. For example, does the applicant have good interpersonal skills and therefore is able to get their message across to the recipients of training?

This routine : non-routine distinction between the skills that make up a competence should not be taken to imply there is a firm demarcation between the two types. Indeed, what is a routine skill for one person can be non-routine for another. Essentially the non-routine skills deal with the more idiosyncratic events and unplanned incidents that occur in the workplace. Interactions between people tend to be unique events that are very difficult to describe objectively. So while interpersonal skills have long been recognised as essential to many jobs, they have traditionally been given little attention by curriculum writers and even less by assessors.

The great value of bringing out the routine : non-routine skill distinction is that it requires us to give consideration to these harder-to-describe skills when developing statements of competence.

Competent performance will therefore be described in terms of the competence to be performed and a set of standards applied to that performance which covers both routine and non-routine skills.

This gives a statement that tells us most of the things we need to know about the competence of our trainer. Some might say this is enough, but in fact there is still one thing missing. We don't know anything about the conditions under which the competence can be demonstrated. For example, the applicant might have previously worked as a trainer on a production line which used a form of work practice where workers were part of a team and the jobs rotated between the team members. In addition, the workers enjoyed a clean, airconditioned working environment. However, the job we are offering is in an extremely noisy and dirty factory where job rotation is frowned upon and airconditioning unheard of. These changes to the conditions under which the applicant would be expected to work will almost inevitably affect the standard of performance.

In summary, any statement of competence describes:

- The skills that are performed in demonstrating the competence (eg the skills required by a competent trainer);

- The standards of performance of those skills in terms of:

  i) routine skills (eg accuracy and legibility of record keeping) and

  ii) non-routine skills (eg interpersonal skills);

- The conditions under which performance occurs (eg work practices, the work environment).

There are other descriptions of occupational competence but generally they cover skills, standards and conditions in one way or another. Although the various definitions are a source of confusion to many people, it is important to note that, in the majority of cases, they mean very much the same thing. Mostly the differences are little more than variations on a theme.

DEVELOPMENT ISSUES

One of the great advantages that the competency-based approach brings to our education and training system is flexibility. This is because it allows the development of a continuum of competence statements from the very basic to the very complex. What is more this can be done in a variety of ways. For example, the number of skills to be performed can be increased or reduced, the standards placed on these skills can be made more lenient or more demanding and the conditions under which performance occurs can be varied as required. This last possibility - the varying of conditions brings to mind the story of the welder applying for a job who had to perform a demonstration weld on a flagpole with the supervisor pulling on a rope to cause the flagpole to swing from side to side. The idea was to simulate the windy conditions that the welders would have to handle if they got the job.

The great beauty of the competency-based approach is that it gives this sort of flexibility. It enables the employers to get people with the skills they need. The challenge, of course, is to get the competency statements written correctly.

When this is done the artificial divide between 'professional' and 'vocational' can be seen to disappear. There are few differences between the elements that go to make up the competence, it is essentially a matter of quantity and complexity.

Professionals typically undergo longer periods of theory training than those working in the more technical or vocational areas. Many professions require evidence of a substantial theoretical knowledge base before an individual can begin to seriously engage in practical work. It is interesting to note that the apprenticeship system (where a number of present-day professions have their roots) has almost the opposite emphasis. The training periods are not all that different, but the technical/vocational areas place more emphasis on practical work and less on the acquisition of theoretical knowledge. It is this difference in emphasis that is the basis for division. As the argument goes, skills, standards and conditions are all right when competencies for electricians and plumbers are discussed but they don't work when it comes to the professional areas like law and economics. This is simply not true.

A consideration of the roles of workplace trainers gives an example of how the increasing complexity of skills, standards and conditions operates in practice. As well as possessing a thorough knowledge of the subject for which he or she is providing training, a competent trainer possesses a mix of skills such as:

- the ability to deal with the training requirements of a range of individuals;

- the ability to solve problems;

- a thorough knowledge of the training process.

Because different training functions require different mixes of these skills there are important ramifications for setting standards and assessing the attainment of standards. Consider, by way of illustration, the following hypothetical example of two trainers in the clothing industry. One trainer trains individuals to operate a single machine while the other trains both individuals and groups to operate a variety of machines.

	INDIVIDUAL TRAINER	GROUP TRAINER
Training role	Single role. Trains novices (individually) to operate a particular make of industrial sewing machine. Training accounts for less than 20% of work time.	Multiple roles. Trains novices (individually and in groups) to operate a range of industrial cutting, sewing and pressing machines. Training is full-time job.
Problem-solving skills	Relate to needs of one person at a time. Relate to operating a particular make of machine.	Relate to both individual and group problems. Relate to operating a range of machines which vary in terms of manufacturer, functions and operating procedures.
Knowledge of training process	Training skills required to deal with individuals only.	Training skills required to deal with both individuals and groups.

The greater complexity of skills, standards and conditions for the group trainer will have a substantial implication for the delivery and assessment of programs to train the different types of trainer.

Assessing that the individual trainer has sufficient knowledge of the training process is more straightforward than in the case of the group trainer. Interactions with groups require more interpersonal (non-routine) skills. The overall competence required of the group trainer is more demanding and multi-dimensional.

There are also training functions which carry with them more complexity than the job of the group trainer (an example would be the training development officer). Training development officers require skills associated with corporate and strategic planning and sophisticated evaluation skills that take us to the boundary of what constitutes workplace training.

ASSESSMENT ISSUES

It can be argued that the most important element of a competency-based system of training is the final decision-making process. That is, the decision as to whether or not competence can be inferred from the performance evidence that has been collected.

The decision to recognise a performance as satisfactory and infer competence is the basis for the success of the system. If these decisions are wrong, the system will almost certainly collapse. It follows therefore that the standards specified when describing the competence must be validly assessed. In other words it is necessary to decide what constitutes valid assessment.

There are some fundamental questions to be answered here because a cornerstone of the competency-based approach is the use of assessment in workplace situations. If somebody can perform satisfactorily in a work situation then do we need any further evidence of their competence? And irrespective of whether assessment is to be done in the workplace, away from it, or some combination of both, decisions on other technical assessment matters are still needed. For example: Do we gain our evidence by assessing products or processes or the knowledge which underpins these? Do we want to assess all

three? And how much evidence is needed? For example, if we choose to assess by observing somebody do something, then how many observations must we make to infer competence?

Assessing the knowledge which underpins performance also brings problems. Firstly there is the difficulty of identifying the knowledge itself. It is well known that many experts experience difficulty in explaining their decisions. Experts tend to perform complex tasks in such a routine fashion that skills like problem-solving have become almost an intuitive process.

A possible source of the knowledge content (the underpinning knowledge) would be existing curriculum documents, but it is necessary to be convinced that the knowledge specified in these documents is relevant to present day needs. One of the reasons for going down the competency-based path is the dissatisfaction with many existing curricula.

There is, however, a further problem lurking here and that is the place the assessment of underpinning knowledge is given when we measure prior learning. This brings us back to the relationship between performance and competence. Those who argue for more assessment of knowledge make the point that just because somebody can do something it doesn't mean they understand what they are doing. If this is true, it can have serious consequences. Consider, for example, the competence of dealing with an electrical fire; say in a switchboard that is sparking and smouldering. This competence involves recognising the correct extinguisher, making the extinguisher work and playing the carbon dioxide on the switchboard in a way that ensures maximum penetration. However, what if the person performing the task is operating in a confined and poorly ventilated space? Knowledge about the properties of carbon dioxide in these circumstances is a life or death consideration.

Assessors charged with the responsibility of verifying that a person is competent must be sure (beyond reasonable doubt) that the necessary level of underpinning knowledge accompanies a performance.

When people are applying for the right to practise in a profession or vocation through the assessment of their prior learning, the demands placed on assessors

are formidable. In these cases the individuals are not seeking the novice status of a new graduate (with its expectation that learning will continue as they gain experience in the job), but rather are seeking the right of full or expert status. The task is not impossible, but it requires a high level of assessment skills, higher possibly than those associated with the assessment of the normal trainee intake.

CONCLUSION

There are answers to all of the questions posed in this paper, but sometimes there is more than one answer, and each answer has its advocates. This is a situation that causes problems for the policy makers.

At the present time Australia's policy on competency-based training and assessment is in a formative stage. What is required is a national debate which will analyse the alternative answers to the problems and deliver a strategy for the future.

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