

Am I competent? Moving from performance appraisals to competence appraisals

by Michelle Unger, ROSEN Group, Stans, Switzerland and Dr Phil Hopkins, Phil Hopkins Pipeline Training and Consultancy, Tyne and Wear, UK

Determining whether an employee is competent and qualified is essential to maintaining health, safety and quality standards. This article explains what companies need to do to ensure their staff can demonstrate they are competent at the tasks they perform.

Pipeline regulations and standards require all staff that work on pipelines to be both 'competent' and 'qualified'.¹ US Federal Regulation §192.803 states:

"Each operator shall have ... a written qualification program ... [and] ensure through evaluation that individuals performing [tasks that affect the operation or integrity of the pipeline] are qualified ... [and] have the necessary knowledge and skills to perform the task ..."

How do we ensure these individuals are evaluated and qualified? This is an important question for all of us and it affects all aspects of our lives. For example, we assume the pilot flying our airplane is competent to fly and we assume the surgeon operating on us is also competent – but what about pipeline engineers? How do we know they are competent and qualified?

PERFORMANCE APPRAISALS

'Competence' is a mix of skills – the ability to do a task; knowledge – the ability to understand and explain the task; and experience – the period of time doing the task. 'Qualified' in a competence means an individual has been formally assessed in that competence.²

The traditional approach to assessing competence has been through annual performance appraisals; however, this has to change as standards in the pipeline industry (see references 3 and 4) now give specific competency requirements for certain operational staff, which require formal competency assessments, for example by examination.

Staff performance appraisals have roots in the US military's 'merit rating' system, created during World War I to identify poor performers for discharge or transfer.³ The whole appraisal

process was firmly linked to outcomes: perform to the required military standard and you remain, otherwise, you will be punished.

Performance appraisals are typically a form that is completed by a staff member, which is then debated with their manager, or vice versa. These annual staff appraisals are very common, but usually disliked by staff and managers, as they are '... uncomfortable, unfair and uninspiring ...'⁴

A mistake often made in appraisals is the employee is evaluated against the performance of their peers, rather than their own past performance.⁵ Comparison with the performance of others is contentious, as this is an arbitrary standard for comparison – what if all the peers were very poor performers? Is that a good standard to work to?

Performance needs to be related to a standard specifying the outcomes of a competence. Staff meeting the standard's outcomes are competent, independent of the performance of others and independent of their own assessment or that of their manager. Annual performance reviews are being replaced by managers giving staff instant feedback, tying it to individuals' own goals and removing annual end-of-year bonuses based on an annual appraisal, with bonuses awarded at the time they are deserved.⁵

SELF-ASSESSMENT OF COMPETENCE

Most competence assessments of professional staff in the pipeline industry are self-assessments, which are notoriously inaccurate, as we generally believe we are 'above average'. For example, 75 per cent of junior medical officers believed they were so proficient at most of the medical procedures, that they could teach them to others.⁶

Experts observing the junior doctors while they

attempted to perform these procedures concluded that fewer than 20 per cent of them were proficient.

Self-assessment has a role, certainly as a starting point.⁸ It allows staff to reflect on their own strengths and weaknesses, but most of us focus on our strengths and not our weaknesses, making us think we have above average abilities and are highly competent.⁹

Self-assessment is usually enhanced by performance feedback and advice from colleagues or clients. Unfortunately, asking colleagues or clients for their view on our competence is a little unsettling, as the feedback may not be what we want to hear.

Finally, we are often nervous about seeking advice, as this may show us as lacking competence, although research has shown that individuals perceive those who seek advice as more competent than those who do not seek advice.⁹

COMPETENT PEOPLE

Another point against self-assessment is the well documented fact that highly competent staff usually doubt their own abilities, but incompetent people do not.

This doubt is due to a variety of reasons. For example, they have learned from experts and do not want to put themselves in that category; they know what they do not know; they focus on the experiences and credentials they do not have, rather than the ones they do; they are uncomfortable in the limelight; and they find satisfaction in helping other people, rather than talking about themselves.¹⁰

Highly incompetent people do not doubt their own abilities, for the opposite reasons listed.

Hence, a competent person will often lack

self-belief, whereas an incompetent person can be close to delusional, but very confident and convincing – incompetent individuals are unable to recognise their own incompetence.¹¹

More worrying is the incompetent not only fail to recognise their incompetence, but they are also likely to feel confident that they actually are competent. The knowledge and intelligence required to be good at a task are often the same qualities needed to recognise that one is not good at that task.¹² Unskilled people lack the skill necessary to evaluate their own skill.

COMPETENCE ASSESSMENT

There are many types of competencies: organisational; technical; behavioural; management; and more. This article has focused on technical competencies, but all competencies are variable, changing with experience and responsibility.

It is also important to know what you are competent at and what you are not competent at. Lack of competence is not a weakness; for example, a teacher of mathematics may be competent to teach 11-year-old students, but not competent to teach 15-year-old students.

The teacher is still competent, but – probably more importantly – knows the limit of the competency. As Confucius (551 BC – 479 BC) said, "Real knowledge is to know the extent of one's ignorance."

Reviews of past major incidents indicate the lack of skills or knowledge has led to errors that contributed to the incident.¹³

It had been assumed that an individual with a certain level of experience or training would be competent; consequently, it is not surprising that pipeline engineers are required to demonstrate their competencies.

Ironically, these engineers have been extensively assessed when they were young – usually by examination – but not during their career, as seen in Figure 1.

Individuals usually demonstrate competence through a curriculum vitae (CV), but the content of a CV is severely limited and lacks validation. Academic qualifications are usually a feature of the early part of a career; professional qualifications tend to be generic and not related to current position; training programs are rarely quality assured, and attendees rarely assessed; and experience is never validated or proven.

Assessment in academia is accepted, but assessment in industry is resisted due to:

- organisations not wanting to hear about staff failure

Assessments per annum

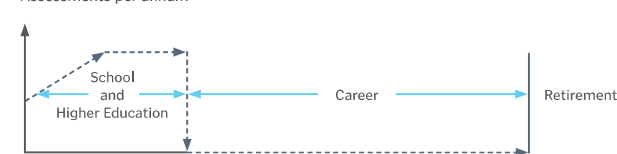


FIGURE 1: Assessments throughout an employee's lifetime.

Question type	Brief description of type of question
1. Factual	soliciting simple, straight forward answers, based on obvious facts.
2. Convergent (closed)	answers are within a finite range of acceptable accuracy.
3. Divergent (open)	exploring different avenues, creating many different variations and alternative answers or scenarios.
4. Evaluative	requires sophisticated levels of cognitive and/or emotional judgment.
5. Combinations	any combination of the above.

TABLE 1: The question types used in assessments, where 1 is low complexity and 5 is high complexity.

Question type	Brief description of objective of question
1. Knowledge	recall, describe, and define facts from memory.
2. Comprehension	understanding, or elaboration, of facts.
3. Application	apply facts to a problem, context or differing environments.
4. Analysis	break a problem into its component parts, forming relationships.
5. Synthesis	design a solution, or predict an outcome to a new problem.
6. Evaluation	form judgements, and make decisions using stated criteria.

TABLE 2: The level of questions used in assessments, where 1 is low complexity and 6 is high complexity.

- organisations not seeing the value in assessment
- most workers in the industry having never been assessed and either seeing no value in assessment or fear of being exposed by the assessment
- assessments following training courses not being the norm in industry
- individuals not engaging in training classes, knowing they will fail an assessment.

There are many ways to assess competency, but it must be assessed against a standard, defining that competency. Competency standards provide a common definition of a competency and contain the minimum required skills, knowledge and experience for a competency.

There are many in the literature for pipeline engineers – for example, references 14 and 15 – and individuals are assessed against these standards. Individuals with documented and

validated evidence that meets the requirements of the standard can be awarded a qualification in that competency.

ASSESSMENT DESIGN

The competency standard will give guidance on the actual competency but will not give explicit assessment methods. Selecting an assessment method is relatively easy for a technician who is performing an easily definable, repeatable task (e.g., the ability to maintain a valve can be by field evaluation), but difficult for engineers working in design, operation and integrity functions.

Assessment methods

'Assessment' is the process of collecting evidence and making judgements on whether competence has been achieved. 'Evidence' is the information gathered that, when matched against the requirements of the competency, provides proof of competence.

COMPETENCY

There are three types of evidence:

- direct (direct observation, or interviews, etc)
- indirect (examination or review of previous work, etc)
- third party (references or testimonials, etc).

Evidence must be relevant, authentic, current and sufficient.

Question design

Managers need to select the most appropriate assessment method, but all these methods will need questions; however, assessing competencies is not simply about asking questions seeking facts – we need our staff to understand concepts and processes, and be able to adapt to new and unusual situations.¹⁶

Setting the type and level of these questions is important as questions should aim to assess critical thinking, rather than memory, and reflect the level of the competency. Obviously, heavily-supervised staff do not need the same level of critical thinking as a senior manager; question types can be seen in Table 1^{17, 18, 19} and question levels in Table 2.²⁰

It is important to remember that assessing competency for higher levels of staff will involve testing the individual on not only the competency, but the whole process the competency is part of.

SUMMARY

Assessing competence

Today, we demonstrate competence through assessment and evaluation. A competency that has been assessed and passed becomes a qualification.

Competency assessments need to be formal and use competency standards that reflect the requirements and criticality of the task. The competency assessment should be separate from performance appraisals and training programs, neither of which are usually based on agreed standards or objective assessments.

Competency assessment processes are detailed in the literature and are usually contained in a 'competency framework'²¹ or 'competency management systems'.^{22, 23}

Starting your assessments

Assessments will take time and effort, but there is no need to conduct detailed assessments of all staff. For example, early career staff are heavily supervised and any error will be obvious or identified by peers and supervisors. In contrast, staff – particularly unsupervised – conducting critical safety or business tasks must be assessed and assessed quickly: assess the 'high stakes' staff first and the 'low stakes' staff later.

Creating a new assessment culture

Competency assessment is relatively new in the pipeline industry and many organisations will be unfamiliar with it. This will lead to both concerns and resistance, as it veers away from traditional methods of assessment. Some concerns are valid: for example, it is difficult to define a competency in a precise and measurable way; identifying core or minimum competencies in a profession or process will be subjective and contentious; and how can you set a 'pass' mark for a competency that involves many differing aspects?

Regardless of these debates, this type of assessment system improves public accountability, its standards are transparent and it has the added advantage of identifying skills deficiencies and gaps in training.

Competency assessment procedures will not be 100 per cent perfect, just as an individual will not be 100 per cent competent. These concerns can be addressed and mitigated by a well-designed competence assessment program. **P**

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