

# What is wrong with assessment in postgraduate training? Lessons from clinical practice and educational research

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## Abstract

Workplace-based assessment is more commonly given a lukewarm than a warm welcome by its prospective users. In this article, we summarise the workplace-based assessment literature as well as our own experiences with workplace-based assessment to derive lessons that can facilitate acceptance of workplace-based assessment in postgraduate specialty training. We propose to shift the emphasis in workplace-based assessment from assessment of trainee performance to the learning of trainees. Workplace-based assessment should focus on supporting supervisors in taking entrustment decisions by complementing their “gut feeling” with information from assessments and focus less on assessment and testability. One of the most stubborn problems with workplace-based assessment is the absence of observation of trainees and the lack of feedback based on observations. Non-standardised observations are used to organise feedback. To make these assessments meaningful for learning, it is essential that they are not perceived as summative by their users, that they provide narrative feedback for the learner and that there is a form of facilitation that helps to integrate the feedback in trainees’ self-assessments.

## Introduction

Training and particularly assessing postgraduate medical trainees has always been a headache for training bodies, which have to compete with production in the hectic environment of the clinical workplace where time constraints pose an all but insurmountable barrier to good teaching and mentoring and most of all to valid and reliable assessment. For many years, trainees have complained of too little supervision and issued urgent calls for more and better feedback, but their pleas have mostly fallen on deaf ears (Norcini & Burch 2007). The recent drive to boost patient safety has sparked efforts to eradicate medical errors, which tend to be at odds with full participation of trainees in all aspects of clinical practice. From the preceding, it will be evident that postgraduate trainees find themselves in an environment which – to put it mildly – is not optimally conducive to their learning. To tackle the problems of assessment in postgraduate training, various authors and medical boards have advocated a competency-based approach to assessment, with strong reliance on the workplace setting where clinical teachers observe trainees at work, give feedback to trainees and consistently document their assessments of trainee performance (Pellegrini 2002; Scheele et al. 2008; GMC 2010). The notions underlying “workplace-based assessment” are that it addresses the “does” level of Miller’s pyramid, i.e. what a doctor does in day-to-day practice, that it covers a broader range of performance than technical and procedural skills only and that structural incorporation of workplace-based assessment in training programmes will finally grant trainees their wish for

## Practice points

- Shift the emphasis in workplace-based assessment from assessment of trainee performance to the learning of trainees.
- A form of facilitation is essential to make feedback meaningful for learning.
- Entrustable professional activities (EPAs) can help to bridge the gap between abstract competencies and clinical practice.
- Workplace-based assessment should focus on supporting supervisors in taking entrustment decisions by complementing their “gut feeling” with information from assessments.
- Teachers and supervisors need to be trained in how to apply workplace-based assessment.

observation-based feedback. Finally, regular assessment, with feedback, of competencies covering the full range of medical practice is expected to enable trainees to monitor their progress and, if needed, remedy deficiencies while affording more valid and reliable decisions about trainee progress. Despite these laudable ambitions, a brief gaze at the literature shows that workplace-based assessment has not been given a very warm welcome in the medical workplace (Malone & Supri 2012). There is an abundance of signs that all too often workplace-based assessment programmes are experienced as bureaucratic, overly complex, subjective, not stimulating

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trainees to strive for excellence and too much of a burden to busy trainees and their supervisors (Pereira & Dean 2009; Sabey & Harris 2011; Wass & Archer 2011). As happens often with educational innovations, workplace-based assessment has proven to be not readily acceptable and not very amenable to implementation. Fortunately, efforts to promote the success of workplace-based assessment can make use of dynamic developments in theory and knowledge building around the implementation of workplace-based assessment in recent years. In this article, we have tried to summarise the workplace-based assessment literature as well as our own experiences with workplace-based assessment in training programmes of various medical specialties to derive lessons that can facilitate acceptance of workplace-based assessment in postgraduate specialty training. Our review of the literature is by no means exhaustive. What we have aimed for is to select those ideas and insights which in our experiences as educationalist (Driessen) and clinical programme director (Scheele) tell us are likely most beneficial to workplace-based assessment and the assessment of tomorrow's learners. Although we focus on postgraduate training, most of these insights apply equally to postgraduate and undergraduate learning.

## Feedback

As we pointed out earlier, calls of trainees for feedback after observation of their performance have a long but unsuccessful history. In a study among Canadian consultants, Watling et al. (2012, p. 195) concluded that "although participants embraced the notion that constructive feedback from supervisors should be a key element of medical training, their stories suggested that truly influential feedback was uncommon". Indeed, one of the most stubborn problems with workplace-based assessment is observation of trainees, or rather the absence of it. Trainees receive little feedback and any feedback they receive deals predominantly with technical and procedural components of performance to the neglect of other competencies. It is not surprising therefore that most of the literature on workplace-based assessment underlines the importance of stimulating teachers to observe trainees' performance and provide immediate feedback (Norcini & Burch 2007; Holmboe & Hawkins 2008).

With the introduction of workplace-based assessment, non-standardised observational methods such as the mini-CEX, direct observation of procedures (DOPs) and case-based discussions (CBD) have made their entry into the clinical workplace to facilitate feedback on performance during specific clinical encounters. Multi-source feedback provides trainees with feedback about their performance over a prolonged period of time. All of these methods use a generic assessment form with a limited number of rating scales as well as space for narrative comments. There is increasing evidence that narrative comments in particular enhance learning and that the learning value of ratings by numbers or letters is negligible (Shute 2008). In our experiences with clinical teaching we have seen some specialties ban numerical marks altogether and move to forms that allow narrative comments only. Such actions are aimed at discouraging

teachers from limiting their assessment to numerical marks, with no substantial feedback apart from the occasional addition of "excellent" written on the form. This deprives assessments of all learning value and is of no use whatsoever to trainees.

For feedback to be effective, it is crucial that teachers and trainees trust that it is safe for them to give and receive feedback. When assessment and feedback methods are perceived to be summative, however, trainees are likely hesitant to seek and give feedback (Driessen et al. 2010a). That is why van der Vleuten et al. (2012) recommended assessment programmes comprised of different assessment methods. In such a programme, decisions about promotion are not taken on the basis of a single assessment but after careful consideration of information from a variety of sources and collected over a prolonged period of time. Initial experiences with such an assessment programme in undergraduate training are positive (Altahawi et al. 2012; Driessen et al. 2012), but more experience and research are needed to fully grasp the intricacies of programmatic assessment in the complex and hazardous world of postgraduate training.

## Feedback is not enough

"Psychologists from Freud to Festinger have described the artful methods by which the human mind ignores, augments, transforms, and rearranges information in its unending battle against the affective consequences of negative events" (Gilbert et al. 1998). Receiving feedback on performance in clinical practice can be a negative event for trainees, which frequently triggers what Wilson (2004) refers to as our *psychological immune system*. The psychological immune system affects the mind in the same way as the physical immune system affects the body: it attacks information that we perceive to threaten our self-image and confidence by labelling it as inaccurate and inappropriate (Colleague B. does not know what goes on in my practice and therefore is not equipped to judge my performance), by attributing it to circumstances beyond our control (I had an off day), or by simply ignoring it, because it belies how we see ourselves.

Being aware of the pitfalls of feedback, how do we arrange for feedback that actively promotes the learning of trainees? Researchers have concluded that some form of facilitation can be helpful (Miller & Archer 2010). Facilitation gives support to learners and helps them come to terms with and accept feedback so that it can effectively support learning. In Archer's (2010) words: "feedback must be conceptualised as a supported sequential process, rather than a series of unrelated events" (p. 106). Mentoring by the same supervisor or mentor can help trainees to actively digest feedback and integrate it in their self-assessment (Driessen et al. 2008). In appraisal interviews, supervisors and trainees should address three questions (Hattie & Timperley 2007): Where am I going? How am I going? Where to next? To answer the first question, trainees should have a clear understanding of desired practice and competence. To answer the second question, trainees need a careful interpretation of information from workplace-based assessment. The crucial issue here is to have access to

key information about learning at short notice. An electronic portfolio containing all the available information from different workplace-based assessment instruments to be aggregated in different ways and interpreted by trainee and supervisors can be most helpful and save time. The portfolio contains an overview of tasks undertaken to obtain specific competencies and shows information about competency levels achieved and areas where more work is needed. To answer the third question: Where to next? Trainee and supervisor discuss which activities are to be undertaken to achieve the desired level of competence. These activities can be documented in a personal learning plan setting out clearly defined goals and an action plan setting out how the goals are to be achieved.

Mentoring is a long-term process that is not limited to learning but can cover also long-term goals like career planning. The literature shows that long-term comprehensive guidance by the same mentor can have positive effects on career success, productivity, job satisfaction, career preparation, and workplace-based learning (Driessen et al. 2011). Mentoring can also be a powerful component of a workplace-based assessment programme. It is therefore regrettable that the literature shows that mentoring is underused in postgraduate specialty training (Stamm & Buddeberg-Fischer 2011).

## Measurement issues

“Any assessment method at the ‘does’ level is characterised one way or another by reliance on information from knowledgeable people to judge performance” (van der Vleuten et al. 2010). In contrast to other assessment methods, the quality of workplace-based assessment depends predominantly on assessors and hardly at all on the assessment method. Non-standardised observational assessments as used in workplace-based assessment rely on the judgements of assessors. These judgements are inevitably prone to different types of bias, such as rater inflation, which is hard to circumvent in workplace-based assessment. Since supervisor and trainee work together they build a working relationship which interferes with the supervisor’s assessor role, causing assessors to be reluctant to give low ratings or negative feedback (Dudek et al. 2005). Bias has also been demonstrated in multisource feedback with different professional groups making different judgements. In a study in the UK, consultants and nurses were found to assess trainees more severely than did peers and administrators (Bullock et al. 2009). Researchers in another study in the UK concluded that next to differences between professional groups differences between assessment settings were another potential source of bias (Wilkinson et al. 2008). To combat bias, the main strategy is sampling, across different (groups of) assessors, cases and settings (outpatient clinic, ward, emergency department and operating theatre). Crossley & Jolly (2012) contend that trainees choosing their own assessors will have a positive effect on the reliability of workplace-based assessment, because trainees will select assessors whom they consider competent to judge a particular aspect of performance that is assessed by a specific workplace-based assessment method.

In view of reliability and validity issues, summative decisions should not be taken on the information from a single method in workplace-based assessment, such as a Mini-CEX or MSF (Norcini & Burch 2007; Mitchell et al. 2011). Using generalisability theory to investigate the composite reliability of workplace-based assessment tools in a learning portfolio, Moonen-van Loon et al. (2013) found that by using a combination of non-standardised observational assessment methods in a portfolio, a reliable summative decision could be made with feasible numbers of assessments (in this case seven mini-CEXs, eight DOPS, and one MSF). To maximise the reliability of workplace-based assessment, decisions about trainees should be based on the combined information from many and different workplace-based assessment tools collected in a portfolio. Ideally, to arrive at a valid assessment of trainee performance a learning portfolio should contain a combination of non-standardised observational assessments and standardised assessments together covering all relevant aspects of trainee performance. By way of illustration, we list the contents of the workplace-based assessment portfolio for postgraduate training in obstetrics and gynaecology in the Netherlands: mini-CEXs, DOPS, MSF, technical skills assessment, OSCEs, documentation of volume of practice, critical appraisals of topics related to clinical problems (CATS) and progress (knowledge) tests (Scheele et al. 2008). It goes without saying that it would be naïve to take all the assessments and simply average the ratings to pronounce the final score. Since the different methods in the portfolio measure different aspects of trainee performance and supply different types of information, averaging scores makes no sense (Mitchell et al. 2011). Once again judgement is indispensable: patterns are to be detected in assessments and unusual ratings and narrative feedback are to be interpreted (Govaerts et al. 2010).

Based on a review of the literature on workplace-based assessment, Crossley & Jolly (2012) made recommendations for further optimisation of the validity and reliability of methods for workplace-based assessment. First, the response scales of workplace-based assessment tools should be aligned with assessors’ expertise and trainees’ developing ability in the workplace (Crossley et al. 2011). This can be achieved by using anchors representing trainees’ degree of (in)dependence; for example, “little supervision input necessary/able to practise independently”. Since pejorative assessments like “unsatisfactory” or “below expectation” are generally not used by assessors they are probably best removed. Sliding scales linked to stage specific expectations of trainees are not very effective in practice because they do not resonate with the way of thinking of assessors and assesseees. Second, holistic rating scales asking for judgements result in more valid assessments than do analytic rating scales which separate performance into objectively observable items (Norman 2005). For performance assessment we should heed the adage that performance is more than the sum of its separate components. Third, Crossley & Jolly (2012) recommend to focus assessment on competencies that are relevant to the activity that is observed and to refrain from rating all the competencies listed in the assessment form regardless of their relevance to the activity in question.

## Eskimos, clinicians and EPAs

Notwithstanding all the excellent advice on how to facilitate trainee assessment, in practice most clinicians still feel uncomfortable relying on workplace-based assessment for judgement of the “does” level at the top of Miller’s pyramid. A potential solution to distrust of workplace-based assessment may be to focus on discrete and concrete performances. As Eskimos know dozens of types of snow, so clinicians know dozens of types of “does”. This means that clinicians can use workplace-based assessment for different practices that trainees have to perform. Postgraduate medical trainees participate in very different settings of patient care to master a very broad and diverse domain of knowledge, skills and behaviours, subsumed under the heading of competencies. Apart from generic competencies that are relevant to any specialty, each specialty has its own unique competencies. A barrier to assessment of these competencies is that they are mostly defined in abstract and general terms, which trainees and supervisors have a hard time translating to the realities of day-to-day patient care. Nonetheless, effective linkage of competency goals and practice is a precondition for the success of workplace-based assessment (Jones et al. 2011). If linkage fails, the danger of bureaucratisation looms large. While documentation of trainee performance may paint a picture of strict adherence to the formal curriculum, the real connection between the formal curriculum and what trainees actually learn in the workplace may be paper thin. To bridge the gap between abstract competencies and clinical practice, ten Cate & Scheele (2007) introduced the concept of entrustable professional activities (EPA), tasks that are considered to be crucial to the profession, which every trainee must master, and which consequently are given a central place in the training programme. EPAs stand for the dozens of types of “does” that are meaningful to clinicians. Scheele et al. (2008) developed three criteria to define EPAs: a task of high importance for daily practice; a high-risk or error-prone task; a task that is exemplary of specific competencies. Examples of EPAs from postgraduate training in Obstetrics and Gynaecology in the Netherlands are the normal delivery, the complicated delivery, the complicated delivery estimated as high risk and the uncomplicated puerperium and care for the neonate. Each EPA is connected to a “mini curriculum” with its own workplace-based assessment programme. Clinicians understand the importance and usefulness of workplace-based assessment for an EPA, so the science of workplace-based assessment is easier to apply to individual EPAs. ten Cate (2006) has made another important step by introducing the entrustability concept. Clinicians are usually serious about their responsibility for elements like quality of care, patient safety and (less altruistically) legal accountability in relation to trainees’ progressive independence. Whom would you trust to treat your patient or, better, your spouse? Workplace-based assessment helps clinicians to make complex entrustment decisions for specific EPAs. The reliable results of a workplace-based assessment programme for a specific EPA will be discussed within the group of supervisors. During this discussion, information about technical skills plays an important role, but questions about proven reflective

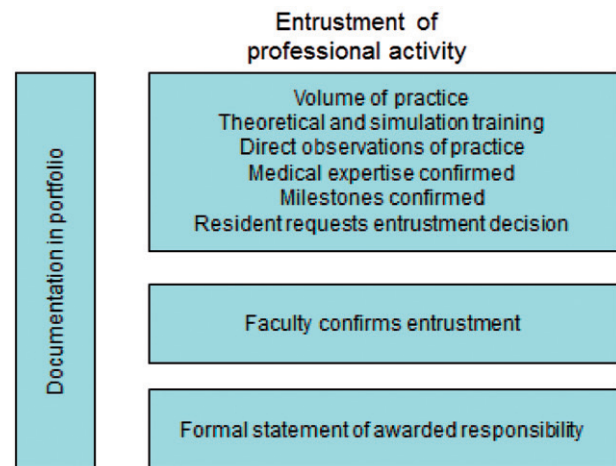


Figure 1. Entrustment of professional activity.

practice, patient safety and quality of care with good communication, not only with the patient but also with the surrounding teams often play an even greater role. Finally, the combination of the results of workplace-based assessment and the “gut feeling” of the supervisors who have worked with the trainee produces an entrustment decision that is valid in the eyes of the clinicians (Dijksterhuis et al. 2009).

A useful instrument to translate practice into competencies and to set required competency levels for specific EPAs within a “mini curriculum” is rubrics. Rubrics (also called anchors, descriptors or milestones) typically contain descriptions of each competency at different levels, such as the levels of a novice, a competent professional and an expert (Meade et al. 2012). For example, within the EPA “complicated delivery with high risk” the novice explains to the patient the routines to be expected. The competent professional coaches the patient during all the steps of the delivery and is able to recognise and treat an abnormal course, whereas the expert is able to keep an overview over the course of the delivery within a broader context. Novices and young professionals often underestimate the importance of the context, e.g. the limited availability of operation time, weaknesses in the team and potential risks coinciding with certain patient characteristics. Figure 1 illustrates how workplace-based assessment can be used to determine whether it is safe to entrust an EPA to a trainee.

## Using workplace-based assessment to assess tomorrow’s learners

In the opening paragraph of this article, we stated that workplace-based assessment is more commonly given a lukewarm than a warm welcome by its prospective users. The success of workplace-based assessment in practice depends crucially on its implementation. It seems fitting therefore to conclude our article with some relevant insights regarding the implementation of workplace-based assessment to ensure that it is meaningful to the learning of trainees, provides improved assessment of trainees’ progress towards

professional independence and is perceived by trainees and teachers as doable and meaningful rather than burdensome and bureaucratic.

First of all, it should be clear to assessors which type of “does” they are expected to assess. Otherwise the effect of workplace-based assessment may be alienating. To create clarity using EPAs in curriculum construction is very helpful. Second, faculty development is essential. The meaningfulness and validity of non-standardised observational assessments is largely determined by the extent to which assessors take assessment seriously and how much time they can afford to spend on it (van der Vleuten et al. 2012). As quite a few clinical teachers contribute to the training of one postgraduate trainee, expertise in workplace-based assessment has to be disseminated among many teachers to enable them to conduct workplace-based assessments and judge and interpret the outcomes. It is not enough to present information about the methods that are to be used: most clinicians are not used to non-standardised assessment methods and it takes time for them to familiarise themselves with these methods. Third, to make sure that workplace-based assessment is in proper alignment with practices in the workplace, the educational structure should give leeway to the compelling variety of clinical practice. Structure should follow global competencies and training requirements to allow for differences between teaching settings and individual trainees. Such an approach is at odds with the culture of the clinical workplace which emphasises guidelines, structure and monitoring (Driessen et al. 2010b). With regard to the implementation of workplace-based assessment, a culture of monitoring shows in a focus on assessment and testability, while workplace-based assessment should focus on supporting supervisors in taking entrustment decisions by complementing their “gut feeling” with information from assessments. Fourth, both trainees and teachers tend to feel an aversion to extensive workplace-based assessment. It creates more work than is necessary and distracts from the real issue: discussing and if needed remedying trainee performance. Recent reviews teach that “lean” workplace-based assessment portfolios with rather a global structure are more effective than bulky portfolios with a very detailed structure (Driessen et al. 2007; Tochel et al. 2009). A final tip, which we feel compelled to add, is to shift the emphasis in workplace-based assessment from assessment of trainee performance to the learning of trainees. Only then will workplace-based assessment gain credibility in the eyes of trainees and supervisors.

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