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**Academic Medicine**

**DOI: 10.1097/ACM.0000000000004501**

**How Trainees Come to Trust Supervisors in Workplace-Based Assessment: A Grounded Theory Study**

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Supplemental digital content for this article is available at

<http://links.lww.com/ACADMED/B202>.

*Acknowledgments:* The authors wish to thank the trainees who participated in this study.

*Funding/Support:* This study was supported by an untied grant from the ANZCA Research Foundation, Australian and New Zealand College of Anaesthetists, reference 17/031.

*Other disclosures:* Damian J. Castanelli and Jennifer M. Weller hold or have held voluntary unpaid positions on education committees of the Australian and New Zealand College of Anaesthetists. Otherwise, all authors report no declarations of interest in this work.

*Ethical approval:* The Deakin University Human Research Ethics Committee granted ethical approval for this study (approval number 2017-160, June 8, 2017).

*Previous presentations:* This work was presented in part at the Association for Medical Education in Europe Virtual Conference, September 2020.

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## **Abstract**

### **Purpose**

In competency-based medical education, workplace-based assessment provides trainees with an opportunity for guidance and supervisors the opportunity to judge the trainees' clinical practice. Learning from assessment is enhanced when trainees reveal their thinking and are open to critique, which requires trust in the assessor. If supervisors knew more about how trainees come to trust them in workplace-based assessment, they could better engender trainee trust and improve trainees' learning experience.

### **Method**

From August 2018 to September 2019, semistructured interviews were conducted with 17 postgraduate anesthesia trainees across Australia and New Zealand. The transcripts were analyzed using constructivist grounded theory methods sensitized by a sociocultural view of learning informed by Wenger's communities of practice theory.

### **Results**

Participants described a continuum from a necessary *initial trust* to an experience-informed *dynamic trust*. Trainees assumed initial trust in supervisors based on accreditation, reputation, and a perceived obligation of trustworthiness inherent in the supervisor's role. With experience and time, trainees' trust evolved based on supervisor actions. Deeper levels of trainee trust arose in response to perceived supervisor investment and allowed trainees to devote more emotional and cognitive resources to patient care and learning rather than impression management. Across the continuum from initial trust to experience-informed trust, trainees made rapid trust judgments that were not preceded by conscious deliberation; instead, they represented a learned "feel for the game."

## **Conclusions**

While other factors are involved, our results indicate that the trainee behavior observed in workplace-based assessment is a product of supervisor invitation. Supervisor trustworthiness and investment in trainee development invite trainees to work and present in authentic ways in workplace-based assessment. This authentic engagement, where learners “show themselves” to supervisors and take risks, creates assessment for learning.

Workplace-based assessment offers trainees an opportunity for guidance and supervisors the opportunity to judge the trainees' clinical practice. However, many trainees do not see workplace-based assessments as an opportunity to learn but rather a hurdle to be passed<sup>1-3</sup> and may alter their practice specifically for these assessments.<sup>4,5</sup> One reason for this inauthenticity may be lack of trust in their supervisor. Trust is a complex concept. Exploration from varied viewpoints across the social sciences has yielded multiple salient characteristics (List 1). We consider that trust takes place when one risks being vulnerable to benefit from the response of another whose actions we cannot control or predict.<sup>6-8</sup> The central characteristic of trust is that it is a leap of faith.<sup>9</sup>

Most research and commentary have focused on supervisors' need to trust trainees,<sup>10-12</sup> driven by the emergence of entrustment as a preferred way for supervisors to determine trainees' progression toward independent practice.<sup>10,13</sup> Supervisors trust trainees whom they see as competent, conscientious, honest,<sup>14</sup> and responsible.<sup>13</sup> They look for confidence, insight, and a willingness to call for help and learn from feedback and reflection.<sup>12,13,15</sup> However, trust is a 2-way street,<sup>16</sup> and much less is known about how trainees come to trust their supervisors.

Understanding how trainee trust develops may allow better implementation of workplace-based assessment to both stimulate learning and support assessment decisions.

Investigations into trainee feedback-seeking behavior suggest that trainees require trust to be receptive to feedback and engage fully in learning opportunities.<sup>17,18</sup> Trainee trust in supervisor judgment enhances the perceived credibility of feedback information.<sup>19</sup> Similarly, trainees' trust in the supervisor increases their receptivity to feedback and the perceived quality of the educational alliance.<sup>20</sup> Interweaving feedback with assessment can amplify the perceived

consequences.<sup>21</sup> While trust in supervisors is important in feedback, we think it may be of even greater importance within workplace-based assessment.

In theory, individual workplace-based assessments are low stakes,<sup>22</sup> thus reducing the risk to the trainee and the need to trust. These low-stakes assessments should provide trainees with valuable information about the standard of their work and advice on how they might improve. Yet multiple studies have found that trainees participate in these assessments in a performative manner,<sup>4,23-25</sup> aiming to create a favorable impression.<sup>5,21</sup> Trainees in these studies appear unwilling to assume the vulnerability inherent in practicing authentically, that is, as if they were not being observed. Hiding ignorance in performance conversations forgoes learning opportunities,<sup>26</sup> and trainees report feedback received from observation of staged performances is less valuable as a source of improved practice.<sup>21</sup> The work involved in impression management may heighten trainee anxiety, deplete mental energy, and potentially impair performance with a subsequent paradoxical detrimental effect on impression management.<sup>26</sup> These highly staged performances, therefore, compromise both assessment for and assessment of learning.

However, trust allows trainees to take a leap of faith, present a more authentic performance, and engage in a more authentic post-performance conversation. Trust is widely recognized to support learners making use of the assessment messages within workplace-based assessments.<sup>27</sup> In contrast to the emerging literature on how supervisors come to trust trainees,<sup>12,28,29</sup> the role of trainee trust in their supervisors and how this trust develops is generally acknowledged only in passing in the literature.<sup>23,30,31</sup> In particular, the role of trainee trust within workplace-based assessments remains mostly unexplored. Therefore, our research question in this study was, how do trainees come to trust their supervisors in the context of workplace-based assessment?

## **Method**

### **Positioning and design**

We adopted an interpretivist approach in this research,<sup>32</sup> basing our analysis on an understanding of our participants' viewpoints informed by our sociocultural worldview. In this view, learning arises from participation in social activity,<sup>33</sup> and the quality of the participation the workplace offers, or its affordances, mediate this learning.<sup>34</sup> Learners' personal epistemologies guide their participation so that they make a unique contribution to practice.<sup>35</sup> Workplace-based assessments are themselves a social practice<sup>36</sup> that trainees learn, contribute to, and learn from.<sup>37</sup> This perspective guided our choice of constructivist grounded theory methodology for this study. Constructivist grounded theory emphasizes that "the researcher and researched co-construct the data"<sup>38</sup> and sees "participants' views and voices as integral to the analysis."<sup>38</sup>

### **Context**

Postgraduate anesthesia training in Australia and New Zealand is centrally administered by a professional college rather than individual universities or health services. In 2019 there were approximately 1,600 trainees in 160 training hospitals.<sup>39</sup> Trainees enter specialist anesthesia training after 2 or more years of general residency, and training takes a minimum of 5 years. The format and minimum number of workplace-based assessments required of trainees are prescribed, and all training hospitals in Australia and New Zealand use a single electronic assessment system. Without minimizing the essentially local nature of any curriculum in practice, all trainees across both countries have the same formal curriculum and assessment system. A trainee can thus complete a workplace-based assessment with an anesthesiologist in any training hospital and it is recorded in the trainee's online portfolio. Trainees are familiar with

the workplace-based assessments because the current competency-based curriculum and assessment system has been in use since December 2012.<sup>40</sup>

### **Participants and data collection**

This study is part of a larger program of research examining assessment for learning in the workplace. We used qualitative interviews to generate our data, which we then analyzed concurrently to meet separate research aims within the larger project. We interviewed anesthesiology trainees from across Australia and New Zealand selected from respondents to a previous survey who had volunteered to participate in interviews. We purposively selected participants to ensure representation of gender, level of training, and geographic region. Ten of the 17 participants were female, with 5 participants in their third year and 3 from each of the other 4 training years; 2 were from New Zealand, and each Australian state and territory was represented by at least 1 participant.

We used semistructured interviews,<sup>41</sup> with an interview guide that included initial questions (Supplemental Digital Appendix 1 at <http://links.lww.com/ACADMED/B202>) and available probes informed by our conception of trust, studies of supervisor trust in learners in medical education,<sup>28,29</sup> and our methodology.<sup>42</sup> In keeping with the inductive nature of our analysis, we did not define trust for our participants; instead, we aimed to elicit their conceptualization of trust from their responses. Interviews were conducted either by the first author (n = 12) or an experienced research assistant (n = 5) and took 50 to 80 minutes. Interviews were conducted from August 2018 to September 2019. Using both a clinician-researcher and a nonclinician to interview provided an insider and an outsider perspective in data collection.

## **Analysis**

In our analysis, which began when we commenced interviewing, we used constructivist grounded theory methods, including initial open coding, focused coding, constant comparison, and memo writing,<sup>42</sup> using NVivo version 12.6.0 (QSR International Pty Ltd, Melbourne, Victoria, Australia). As we progressed, we also sampled theoretically, seeking to test our interim theorizing with subsequent participants.<sup>42</sup> D.J.C. led the analysis, and frequent meetings between members of the research team enabled all authors to contribute. In keeping with constructivist grounded theory methodology, we sought to analyze actions and processes initially and then develop conceptual and analytic categories from which to generate descriptive and explanatory theory.<sup>42</sup> We ceased interviewing when we were no longer encountering variations in our theoretical categories.

We started this study intent on inductively deriving theory from data but informed by our sociocultural views of learning in the workplace. However, constructivist grounded theory requires researchers to remain open to modifying their methodology and analysis if new insights emerge during the research process.<sup>38</sup> As we interviewed and analyzed data, we were struck by a particular quality in how trainees described making trust decisions. This quality led us to incorporate Bourdieu's "feel for the game"<sup>43</sup> into our analysis.

Bourdieu described feel for the game as the "art of anticipating the future of the game, which is inscribed in the present state of play."<sup>44</sup> Bourdieu used the analogy of the game to represent any and all social fields of practice where people aim to attain or maintain their position.<sup>45</sup> He viewed feel for the game as a learned practical sense based on experience where participants unconsciously incorporate the regularities of social interactions into habits and dispositions that they can then use to improvise new actions. Just as in actual games, learning the feel for the

game requires trial and error, and participants develop on different trajectories and to varying extents.<sup>45</sup> This additional theoretical perspective of feel for the game then informed subsequent data collection and our final analysis.

### **Ethical approval**

The Deakin University Human Research Ethics Committee granted ethical approval for this study (approval number 2017-160, June 8, 2017).

### **Results**

Overall, trainees trusted supervisors with their workplace-based assessments more intuitively than deliberately, although their actions were concordant with our view of trust as managing vulnerability in relations with another. Their descriptions of trust represented a continuum of development from a necessary initial trust to an experience-informed dynamic trust. The established level of trust had implications for the emotional burden of training. Perceived supervisor investment in the trainee led to deeper trust, and with senior trainees, this trust could lead to shared vulnerability. These key aspects are developed further in the following sections. Illustrative quotations from participants are presented with the participant number in parentheses.

### **Trust judgments are not conscious decisions**

Participants seldom used the term “trust” without prompting. On reflection, trust was important in their decisions regarding workplace-based assessments, but participants were not consciously aware of it at the time: “I think I probably trust most of the supervisors ... I just haven’t addressed it consciously.” (#3)

Participant accounts affirmed that trust requires accepting vulnerability in the hope of benefit as we have defined it. However, trainees were not consciously calculating in the moment whether

their vulnerability was warranted. They made rapid trust judgments, tailored to the situation, that were not preceded by active deliberation, just as Bourdieu described in feel for the game.

Participants reported examples in which their feel for the game in trusting a supervisor facilitated their learning:

One of my supervisors asked . . . , “Are there any WBAs [workplace-based assessments] you need to get done?” And I said, “Actually yes, I’d like to do a DOPS [direct observation of procedural skills] on a spinal.” (#14 )

Hence, the participant took up the supervisor’s invitation and a valuable learning opportunity ensued:

So, we did, and it was a very anxious patient, and so there was quite a lot of talking to the patient, coaching her. . . . She did have gestational hypertension, so we talked a bit about that, and the implications in doing a cesarean . . . the frequency of your blood pressure monitoring, fluid loading. . . . I left feeling good about the experience and felt I had a chance to actually showcase what I knew.

(#14 )

Although reported as an immediate decision, on reflection the trainee explained the decision as a response to “a real invitation to have a think about what [the trainee] needed to achieve . . .” from “someone that I respect very much but also feel very comfortable with” (#14).

In contrast, at other times a trainee’s feel for the game might have failed the trainee. In the following example, the participant reported an incident that arose after a misjudgment in selecting a supervisor for a workplace-based assessment:

I said, “I know we’re in a bit of a hurry, but because I need central lines for my WBAs [workplace-based assessments], would you mind if I do the central line?” After a while, she agreed, reluctantly. Anyway, it was a bit hard to get a central line, so she got impatient and took over. And then halfway through the case, while she was out of the room, the technician inadvertently turned off the cauterizer that the surgeon was using. And I didn’t realize it, I had no idea . . . a few things started beeping, the surgeon [said] “What the hell’s going on?” And the propofol machine [maintaining the patient unconscious] beeped because he’d actually turned that off by mistake. So, I fixed that up. And then the boss comes back in and she blamed me for the whole thing, said that my situational awareness wasn’t up to scratch, it was all my responsibility. . . . And then she went off and said, “Oh, you should have just let me do the central line.” And I couldn’t talk any sense into her. (#11)

In this instance, the trainee missed the supervisor’s signals of reluctance and ignored the expressed need for haste. The supervisor’s interpretation of the trainee’s subsequent performance appeared to have been compromised by the performance in the workplace-based assessment.

### **Initial trust provides a basis for working together**

Trainees reported they began with a baseline expectation that they could trust all their supervisors in a limited way.

As a trainee, I think the entire system only works if you walk into a theater having never worked with someone before and you have some implicit trust that they’re competent; someone that you can have as a supervisor (and) can safely anesthetize patients with. (#6)

There was a recognition that supervisors needed to act the part and behave as expected, including in workplace-based assessment. This recognition was sometimes expressed as a teleological argument in that initial trust was necessary for the system to work, and the system worked, so therefore, it was a reasonable assumption. The external credibility provided by employing hospitals and the college and a particular supervisor's reputation also played a role.

Participants' expectation that supervisors are obliged to act in a trustworthy manner was reinforced on one occasion in which a participant became aware of a lapse in supervisory norms. The breach in confidentiality of assessment information was reported and appropriate supervisor behavior reinforced, with subsequent supervisor behavior noted to conform to expectations:

I've been privy to . . . inappropriate discussion of other people's performance, and I discussed it with a trusted mentor who had it raised at a supervisor meeting, so supervisors were more vigilant about not discussing trainees [with] other trainees.

(#10)

### **Experience-informed trust develops with time**

We found the trust relationship dynamically evolved from this initial trust toward an equilibrium based on trainee experience with a supervisor:

You're always going to be unfamiliar with people when you start working with them, but then you build on that, working together, and knowing how each other works really makes a difference. It's just time and familiarity. (#4)

This progression was not linear but ebbed and flowed as the trainee added new experiences. Not all relationships developed a high level of trust; rather, trainee trust fluctuated on the basis of supervisor behavior but tended to settle to a consistent level with an individual supervisor.

Alignment between the participant's emerging view of how he or she should practice and the supervisor's practice encouraged deeper levels of trust, with one trainee describing how the trainee came to trust "people with similar ideas and similar strategies when it comes to anesthetizing" (#4). One participant eloquently summarized:

One of the questions I've got in my head is, is this the type of anesthesiologist that I want to be like? And the ones that I would have been far more likely to approach for workplace-based assessments would have been those ones where I would have said, "Yeah, this is the type of anesthesiologist that I want to become." (#5)

Other participants also valued supervisor performance as a teacher:

Someone that you trust as a teacher, someone that you value their actual clinical expertise. . . . Someone that, if they had an issue with something you did, they'd raise it in a constructive way and make it a learning experience for you without either talking about you behind your back to your supervisor of training or making you feel bad about it. (#14)

This quote highlights another important desired characteristic of trustworthy supervisors. The idea that a supervisor "talking about you behind your back" would indicate someone who should not be trusted emphasizes the role of perceived supervisor integrity in establishing trainee trust. Participants recognized that they shared responsibility for developing trust, that "supervisor trust has to be a two-way relationship" (#5). However, the first move into this cycle of increasing trust usually came from supervisors. It was easier for trainees to develop trust in supervisors who trusted them: "One of the reasons why I feel more comfortable with them is because they seemed quite confident in my abilities from early on and trusting of what I'm able to do." (#3)

Trainees attributed their evolving trust in a supervisor to increasing evidence of perceived expertise, especially sound judgment:

I think part of the way the trust develops is just having them watching you . . . and getting from their point of view whether they trust you, but then . . . it's due to whether I trust their clinical judgment and skills in different situations. (#2)

Another aspect of the evolution of experience-informed trust was the quality of the interpersonal relationship between the trainee and the supervisor:

Having worked with them, our relationship has grown close . . . I feel more comfortable talking to them. . . . If you've got someone that you can converse with comfortably . . . that's a really important part of the relationship. (#9)

The long periods of time anesthesia trainees spend with their supervisors, "being in a room for 8 to 10 hours over the day together," were also important in the development of trusting relationships:

You actually enjoy being in the same room as some people, and . . . you feel like you can chat with [them] more comfortably . . . [that] it's going to be a nice, relaxed day and you'll get things out of it. . . . Where with others you feel a bit more on edge. (#8)

### **Emergent trust reduces the emotional burden of training**

When a trusting relationship developed, it allowed predictability and a settled way of working together that carried through into workplace-based assessments:

I have to have worked with them a fair bit and be fairly comfortable with them to get to this point. . . . When you don't have that trust with a supervisor, you don't know what their expectations are, you don't know what they think of you. . . . She

let me run the cases and wasn't questioning what I was doing all the time, and I was able to ask her questions without feeling like I was getting grilled. (#11)

Some participants found that the settled nature of trusted relationships decreased the emotional work required to navigate their training, including workplace-based assessments. One trainee contemplating rotating away from a familiar hospital explained it this way:

The better I know somebody, the better I can read them, and you already know how your interactions with them are going to go. . . . Based on my previous experience of going to a new place, it's going to be quite stressful for a period of 3 to 6 months. (#7)

In these predictable relationships, trainees reported no longer needing to maintain a "veneer" but being able to have open and honest dialogue with supervisors. Participants with this experience reported being "more confident in knowing what they think of you" (#16), which minimized the emotional work of monitoring their own performance for alignment with supervisor expectations in workplace-based assessments.

When the established relationship reflected a low level of trust, trainees needed to expend significantly more emotional effort monitoring their own performance to align with supervisor preferences:

You work really hard to try and make things go right. . . . You tend to ask them what they like and how they like things done. . . . Whatever you do is not what they want anyway. There's very few of those people around, but they do make it stressful. . . . You don't learn a lot from them . . . you never feel like you're good enough for them. (#17)

### **Supervisor investment in the trainee magnifies trainee trust**

Almost all participants reported at least one supervisor with whom they had a particularly trusting relationship. Trainees attributed this trust to the supervisor's concern for them as a person, often manifested by altruistic efforts to help them in their learning:

She's someone that I do very much trust as having my best interests at heart. . . .  
[She] spent a fair bit of her own personal time, after hours, doing tutorials with us and doing exam practice. . . . She's someone that I know will give me honest feedback but in a constructive way . . . someone that I would be very happy to approach for assessment . . . because you've got that preexisting relationship, you know that even if this particular assessment doesn't go too well, you know that it's not going to be disastrous for your relationship or your training. (#14)

As in this case, the confidence that any single assessment would not jeopardize the established trust was a key marker of this investment by the supervisor in the trainee.

For most participants, these relationships with invested supervisors were the most stable and trusting they experienced. However, a few senior trainees described subsequently developing a deeper reciprocal trust:

I guess you feel more relaxed around them . . . more friendly and collegial. . . .  
[They] would give good solid feedback and advice on where you went well and where you didn't go well. . . . They're willing to hear from you about what you want to do and how to do things and run with it. . . . They also are willing to take advice [and] open to learning themselves . . . you're more relaxed, you're not worried about doing things in a way that they might not like. (#17)

These trainees reported that their judgments were respected, and they felt more like a colleague, which increased their confidence. This reciprocal trust, which was only reported toward the end of training, was interpreted as a welcome recognition of their readiness to enter unsupervised practice.

## **Discussion**

Based on our grounded theory analysis, we have described how trainee trust in supervisors develops in the context of workplace-based assessment. Trainees made trust judgments intuitively rather than deliberately calculating trust moment to moment. The unconscious nature of these decisions may explain why participants needed prompting to describe how they arrive at trusting their supervisor despite acknowledging the importance of this sense of trust in their training and assessment. Trainees initially assumed a limited trust, primarily based on supervisors' perceived obligation to fulfill their role, which then progressed to an experience-informed trust. Supervisor investment in the trainee enhanced perceived trust. The nature of the established trusting relationship between the supervisor and the trainee influenced the emotional work trainees undertook to accommodate their practice to their supervisor.

We found that Bourdieu's concept of feel for the game encapsulated the way trainee trust decisions in workplace-based assessments were made intuitively in response to supervisor behavior.<sup>43</sup> These dynamic interactions allow little time for deliberation, but experience imparts a feel for the game that allows trainees to navigate these encounters. Our data suggest that the trial and error involved in learning to negotiate this complexity can have emotional cost for trainees. We think it may contribute to the reported emotional burden that impression management entails.<sup>26</sup> While this learning may be indispensable in trainee development, raising awareness of the learning process and its emotional impact might help trainees. Making learning the concept

of feel for the game visible may allow us to coach learners and enhance their work and quality of life during training.<sup>46</sup> Perhaps trainees could be helped to discern how trusting they should be in the varied supervisory practices they will encounter in their training.

From a sociocultural perspective, supervisor behavior is only one of the invitational qualities or affordances of the clinical environment.<sup>34</sup> However, this study suggests that supervisor behavior is a key influence upon trainees' willingness to learn from their assessment. Almost all of our participants could give an example in which they felt safe to practice authentically rather than in a performative manner in workplace-based assessment with a supervisor with whom they had a trusting relationship. When the conditions were favorable, trainees were willing to trust and engage in assessment for learning. The implication is that the trainee behavior observed in workplace-based assessment reflects the behavior supervisors invite. Enhancing supervisor behaviors that promote trainee trust seems an essential requirement for improving trainee engagement in assessment for learning.

Social expectations around the supervisor-trainee relationship promoted a base level of trust in our study; however, for trainees to trust supervisors as their relationship develops, supervisors needed to be perceived as trustworthy. Trustworthiness has been reported to include the qualities of ability, benevolence, and integrity.<sup>47</sup> Our participants highlighted the role of integrity and both clinical and teaching ability in developing trust. However, benevolence was their most important criterion for a trusting relationship that enabled assessment for learning. Episodes where the trainee was vulnerable and the supervisor's response affirmed trust in the trainee were crucial in strengthening trusting relationships. These trusting relationships reassured trainees of the supervisor's continuing respect for them even if they failed. This demonstrated supervisor commitment and investment in trainees' development invited a deeper level of trust. Similarly,

supervisors' willingness to interact collegially with senior trainees and reveal their own vulnerability, reminiscent of intellectual candor,<sup>48</sup> led to an enhanced reciprocal trust that facilitated learning.

Trainee trust engendered by supervisor trustworthiness has positive implications. In surgical training, impression management is considered vital by trainees to access practice and learning opportunities; however, it increases emotional work, can hinder education, and can threaten patient care.<sup>26</sup> With trusted supervisors, our participants could let go of the veneer; trust provided safety for genuinely expressing emotion. Expending less emotional effort on impression management may free space for learning. Another way of thinking about this implication of our work is that trustworthy supervisors invite trainees to seek assessment in their zone of proximal development.<sup>49</sup> Trainees might be more willing to extend themselves beyond their comfort zone, increasing the likelihood of less than perfect performance but also maximizing their learning opportunity. For supervisors, engendering higher levels of trust reportedly increases trainee receptivity to feedback and hence teacher effectiveness.<sup>20</sup> We have found that trainees will actively engage in learning from assessment with trusted supervisors. If trainees are not requesting workplace-based assessments or are not using them for learning, supervisors might reflect on how they are perceived by trainees; supervisors may wish to consider how they can signal their trustworthiness and invite learning through workplace-based assessment.

The opportunity for trainees to develop experience-informed trust or for supervisors to invest in a learning relationship takes repeated supervisor-trainee interactions. The traditional rotational systems in postgraduate medical education restrict these opportunities. Like us, others have found relationships where learners feel safe and supported promote learning from feedback and assessment.<sup>23,24</sup> If training programs are to foster trust and encourage assessment for learning,

they may need to be creative in fostering at least some long-term relationships within rotational systems. Educational designers must also recognize that assessment for learning requires trainee trust that depends on supervisor behavior and commitment. Since the organization of their work limits their opportunity to develop trust in their supervisors, it follows that trainees would be ill-advised to engage in assessment for learning in every workplace-based assessment.

What recommendations can we make to facilitate the growth of trainee trust in supervisors and encourage learning from workplace-based assessment? Changing individual supervisor behavior may help but is unlikely to be sufficient. Perhaps there is an opportunity for supervisors in a department to collectively behave in a more trustworthy manner. If supervisor benevolence and integrity were the norm, then areas of trainee performance requiring improvement in workplace-based assessment may be seen as opportunities rather than threats. Such a local assessment culture would invite and reward trainee vulnerability. Culture is a powerful influence on individual practice that is viewed paradoxically as both resistant to change and a vehicle to bring about desired change.<sup>50</sup> We have previously noted shadow systems in the local assessment culture,<sup>51</sup> potentially legitimizing trainees' fears that they are being talked about behind their back and undermining their collective trust in their supervisors. Determining how we might establish a desirable assessment culture that ameliorates the disadvantages of fragmented supervision and enhances trust would be a valuable area for future research.

### **Strengths and limitations**

We have extended the study of trust in workplace-based assessment to include the trainee perspective, which we think is a significant strength of our study. We have also included participants with different levels of experience from across 2 countries; however, our study is

confined to anesthesia, which may be considered a limitation. Investigating the views of trainees from other specialties and countries may provide different insights.

## **Conclusions**

In our study of workplace-based assessment, trainee trust in supervisors started with an initial trust based on the expectation supervisors would fulfill their assigned role but then progressed based on trainee experience with the supervisor. Supervisor trustworthiness invited more authentic trainee behavior in their observed practice. We found that trainee trust judgments represented a feel for the game that allowed rapid, intuitive adaptation to supervisors in the moment. Ultimately, perceived supervisor investment in the trainees and their learning allowed deeper trust to develop between trainees and their supervisors and facilitated a learning focus in workplace-based assessments. Because short trainee rotations decrease opportunities for supervisor-trainee relationships to develop, investigating ways to facilitate a culture of trust within a department may help realize the benefits of workplace-based assessments for learning.

## References

1. Bindal T, Wall D, Goodyear HM. Trainee doctors' views on workplace-based assessments: Are they just a tick box exercise? *Medical Teacher*. 2011;33:919-927.
2. Massie J, Ali JM. Workplace-based assessment: A review of user perceptions and strategies to address the identified shortcomings. *Advances in Health Sciences Education*. 2016;21:455-473.
3. Scarff CE, Bearman M, Chiavaroli N, Trumble S. Trainees' perspectives of assessment messages: A narrative systematic review. *Med Educ*. 2019;53(3):221-233.
4. Gaunt A, Patel A, Rusius V, Royle TJ, Markham DH, Pawlikowska T. 'Playing the game': How do surgical trainees seek feedback using workplace-based assessment? *Medical Education*. 2017;51(9):953-962.
5. LaDonna KA, Hatala R, Lingard L, Voyer S, Watling C. Staging a performance: Learners' perceptions about direct observation during residency. *Medical Education*. 2017;51:498-510.
6. Beitak K. *Trust and Incidents: The Dynamic of Interpersonal Trust Between Patients and Practitioners*. Wiesbaden, Germany: Springer; 2015.
7. Sztompka P. *Trust: A Sociological Theory*. Cambridge, UK: Cambridge University Press; 2003.
8. Rousseau DM, Sitkin SB, Burt RS, Camerer C. Introduction to special topic forum: Not so different after all: A cross-discipline view of trust. *The Academy of Management Review*. 1998;23:393-404.
9. Frederiksen M. Dimensions of trust: An empirical revisit to Simmel's formal sociology of intersubjective trust. *Current Sociology*. 2012;60(6):733-750.

10. ten Cate O. Medical education: Trust, competence, and the supervisor's role in postgraduate training. *British Medical Journal*. 2006;333(7571):748.
11. Sterkenburg A, Barach P, Kalkman C, Gielen M, ten Cate O. When do supervising physicians decide to entrust residents with unsupervised tasks? *Academic Medicine*. 2010;85(9):1408-1417.
12. Hauer KE, ten Cate O, Boscardin C, Irby DM, Iobst W, O'Sullivan PS. Understanding trust as an essential element of trainee supervision and learning in the workplace. *Adv Health Sci Educ Theory Pract*. 2014;19(3):435-456.
13. ten Cate O, Hart D, Ankel F, et al. Entrustment decision making in clinical training. *Academic Medicine*. 2016;91:191-198.
14. Kennedy TJ, Regehr G, Baker GR, Lingard L. Point-of-care assessment of medical trainee competence for independent clinical work. *Academic Medicine*. 2008;83(10 suppl):S89-S92.
15. Dijksterhuis MG, Voorhuis M, Teunissen PW, et al. Assessment of competence and progressive independence in postgraduate clinical training. *Medical Education*. 2009;43(12):1156-1165.
16. Sklar DP. Trust is a two-way street. *Academic Medicine*. 2016;91(2):155-158.
17. Bok HG, Teunissen PW, Spruijt A, et al. Clarifying students' feedback-seeking behaviour in clinical clerkships. *Medical Education*. 2013;47(3):282-291.
18. van de Ridder JMM, McGaghie WC, Stokking KM, ten Cate OTJ. Variables that affect the process and outcome of feedback, relevant for medical training: A meta-review. *Medical Education*. 2015;49(7):658-673.

19. van de Ridder JMM, Berk FCJ, Stokking KM, ten Cate OTJ. Feedback providers' credibility impacts students' satisfaction with feedback and delayed performance. *Medical Teacher*. 2015;37(8):767-774.
20. Telio S, Regehr G, Ajjawi R. Feedback and the educational alliance: Examining credibility judgements and their consequences. *Medical Education*. 2016;50(9):933-942.
21. Watling CJ, Ginsburg S. Assessment, feedback and the alchemy of learning. *Medical Education*. 2019;53:76-85.
22. van der Vleuten CP, Schuwirth LW, Driessen EW, Govaerts MJ, Heeneman S. Twelve tips for programmatic assessment. *Medical Teacher*. 2015;37(7):641-646.
23. Schut S, Driessen E, van Tartwijk J, van der Vleuten C, Heeneman S. Stakes in the eye of the beholder: An international study of learners' perceptions within programmatic assessment. *Medical Education*. 2018;52:654-663.
24. Harrison CJ, Könings KD, Dannefer EF, Schuwirth LWT, Wass V, van der Vleuten CPM. Factors influencing students' receptivity to formative feedback emerging from different assessment cultures. *Perspectives in Medical Education*. 2016;2:276-284.
25. Castanelli DJ, Jowsey T, Chen Y, Weller JM. Perceptions of purpose, value, and process of the mini-Clinical Evaluation Exercise in anesthesia training. *Canadian Journal of Anesthesia*. 2016;63(12):1345-1356.
26. Patel P, Martimianakis MA, Zilbert NR, et al. Fake it 'til you make it: Pressures to measure up in surgical training. *Academic Medicine*. 2018;93(5):769-774.
27. Schut S, Maggio LA, Heeneman S, van Tartwijk J, van der Vleuten C, Driessen E. Where the rubber meets the road—An integrative review of programmatic assessment in health care professions education. *Perspectives in Medical Education*. 2021;10(1):6-13.

28. Hauer KE, Oza SK, Kogan JR, et al. How clinical supervisors develop trust in their trainees: A qualitative study. *Medical Education*. 2015;49(8):783-795.
29. Sheu L, Kogan JR, Hauer KE. How supervisor experience influences trust, supervision, and trainee learning: A qualitative study. *Academic Medicine*. 2017;92:1320-1327.
30. Driessen EW, van Tartwijk J, Govaerts M, Teunissen P, van der Vleuten CP. The use of programmatic assessment in the clinical workplace: A Maastricht case report. *Medical Teacher*. 2012;34(3):226-231.
31. Bok HG, Teunissen PW, Favier RP, et al. Programmatic assessment of competency-based workplace learning: When theory meets practice. *BMC Medical Education*. 2013;13:123.
32. Crotty M. *The Foundations of Social Research: Meaning and Perspective in the Research Process*. St Leonards, New South Wales, Australia: Allen & Unwin; 1998.
33. Wenger E. *Communities of Practice: Learning, Meaning, and Identity*. Cambridge, UK: Cambridge University Press; 1998.
34. Billett S. Co-participation at work: Learning through work and throughout working lives. *Studies in the Education of Adults*. 2004;36(2):190-205.
35. Billett S. Personal epistemologies, work and learning. *Educational Research Review*. 2009;4(3):210-219.
36. Boud D. Assessment for developing practice. In: Higgs J, Fish D, Goulter I, Loftus S, Reid J-A, Trede F, eds. *Education for Future Practice*. Rotterdam, Netherlands: Sense Publishers; 2010;251-262.
37. Kemmis S. *A Practice Sensibility: An Invitation to the Theory of Practice Architectures*. Singapore: Springer; 2019.

38. Charmaz K. Constructionism and the grounded theory method. In: Holstein JA, Gubrium JF, eds. *Handbook of Constructionist Research*. New York, NY: The Guildford Press; 2008;397-412.
39. Australian and New Zealand College of Anaesthetists. Anaesthesia training program. <https://www.anzca.edu.au/education-training/anaesthesia-training-program>. Accessed March 2, 2021.
40. Australian and New Zealand College of Anaesthetists. Anaesthesia training program curriculum. <http://www.anzca.edu.au/documents/anaesthesia-training-program-curriculum.pdf>. Published 2012. Accessed March 2, 2021.
41. Kvale S, Brinkmann S. *InterViews: Learning the Craft of Qualitative Research Interviewing*. 2nd ed. Thousand Oaks, CA: Sage; 2009.
42. Charmaz K. *Constructing Grounded Theory*. 2nd ed. London, UK: Sage; 2014.
43. Bourdieu P. *The Logic of Practice*. Cambridge, UK: Polity Press; 1990.
44. Bourdieu P. *Practical Reason: On the Theory of Action*. Stanford, CA: Stanford University Press; 1998.
45. Bourdieu P, Wacquant L. *An Invitation to Reflexive Sociology*. Cambridge, UK: Polity Press; 1992.
46. Boud D, Middleton H. Learning from others at work: Communities of practice and informal learning. *Journal of Workplace Learning*. 2003;15(5):194-202.
47. Damodaran A, Shulruf B, Jones P. Trust and risk: A model for medical education. *Medical Education*. 2017;51(9):892-902.
48. Molloy E, Bearman M. Embracing the tension between vulnerability and credibility: 'Intellectual candour' in health professions education. *Medical Education*. 2019;53:32-41.

49. Vygotsky L. *Mind in Society*. Cambridge, MA: Harvard University Press; 1978.
50. Bearman M, Mahoney P, Tai J, Castanelli D, Watling C. Invoking culture in medical education research: A critical review and metaphor analysis. *Med Educ*. 2021;55(8):903-911.
51. Castanelli DJ, Weller JM, Molloy E, Bearman M. Shadow systems in assessment: How supervisors make progress decisions in practice. *Advances in Health Sciences Education*. 2020;25:131-147.

**Reference cited only in List 1**

52. Smith C. Understanding trust and confidence: Two paradigms and their significance for health and social care. *Journal of Applied Philosophy*. 2005;22(3):299-316.