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Psychological safety in feedback: What does it look like and how can educators work with learners to foster it?

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Abstract

Context: Feedback conversations play a central role in health professions workplace learning. However, learners face a dilemma: if they engage in productive learning behaviours (such as asking questions, raising difficulties, offering opinions or contesting ideas), they risk exposing their limitations or offending the educator. This highlights the importance of psychological safety in encouraging learners to candidly engage in interactive dialogue and the co-construction of knowledge. Previous research has recommended that building safety, trust or an educational alliance is key to productive feedback encounters. Yet it is unclear how to translate this into practice. Hence our research question was: what does psychological safety look like in workplace feedback and how can educators work with learners to foster it?

Methods: We analysed 36 videos of routine formal feedback episodes in clinical practice involving diverse health professionals. A psychologically safe learning environment was inferred when learners progressively disclosed information and engaged in productive learning behaviours during the conversation. We used thematic analysis to identify associated educator strategies which seemed to promote psychological safety.

Results: Four themes were identified: 'Setting the scene for dialogue and candour', 'Educator as ally', 'A continuing improvement orientation' and 'Encouraging interactive dialogue'.

Educators approaches captured within these themes, seemed to foster a psychologically safe environment by conveying a focus on learning and demonstrating respect and support to learners.

Conclusions: This study builds on claims regarding the importance of psychological safety in feedback by clarifying what psychological safety in workplace feedback conversations might look like and identifying associated educator approaches associated. The results may offer educators practical ways they could work with learners to encourage candid dialogue focused on improving performance.

Introduction

Feedback plays a central role in workplace learning in health professions education.¹⁻⁴

Commonly in clinical practice, this involves a senior clinician ('educator') and a junior clinician ('learner') discussing the learner's performance. This may be in formal settings, such as workplace-based assessments or end-of-attachment appraisals), or embedded informal discussions, such as after a clinic or during wound-closure in theatre. The aim of feedback is to assist learners to understand what 'quality work' looks like and how their work compares with these standards, and to use this performance information to implement practical strategies to improve performance.⁵⁻⁹

¹⁰To achieve these aims, there is consensus in contemporary feedback literature, underpinned by social constructivist stance, that learners' active engagement is essential. Learning conversations offer opportunities for learners to refine their understanding and contribute to shaping co-constructed ideas.^{5,11} For example, learners might articulate a thoughtful self-assessment by comparing their own performance with the desired performance. This process of reflection and evaluative judgement engenders valuable learning in itself (as well as offering further avenues for learning).^{9,12,13} In addition, dialogue between an educator and learner offers the opportunity for a catalytic reaction, as their different perspectives interact, to co-create new insights and strategies uniquely tailored to assist the learner.¹⁴⁻¹⁷ All this requires a learner to candidly reveal their learning needs and negotiate the design of an improvement strategy that will work for them.¹⁸ On the other hand, if a learner does not reveal the difficulties they have experienced, ask questions,

propose their own ideas (even if partial or flawed) or contest an idea, then an educator's advice may not be sufficiently relevant, useful or acceptable for the learner to put into practice.¹⁷

However, despite the espoused importance of learner participation in optimising feedback outcomes, this does not appear to have been translated into routine practice. Observational studies have reported that feedback commonly comprises 'one-way' information provision, dominated by the educator.¹⁹⁻²¹ Learners often report that educators' comments are not specific, clear or actionable and they struggle to 'make sense' and 'make use' of it.²²⁻²⁶

To counter this lack of learner involvement, there has been increasing focus in the literature on the value of the educator-learner relationship in creating safe spaces to allow for learner contribution. In health professions education, Ende called for the learner and educator to work 'as allies'.²⁷ The R2C2 feedback model includes 'relationship building' as the first phase, with the goal to 'build a positive relationship based on trust and respect'.^{14,28,29} The concept of an 'educational alliance' has also been proposed, derived from the 'therapeutic alliance' in psychotherapy. A strong therapeutic alliance is said to exist when a client believes the therapist shares with them a positive bond, the same therapeutic goals and strategies for working towards them. Junior doctors, who felt a strong educational alliance with their supervisors, reported seeking feedback, being open and honest during discussions and implementing planned strategies.^{30,31} In higher education, Carless explored the role of trust in dialogic feedback.³² He used a definition by Tschannen-Moran that trust is one's willingness to be vulnerable to another based on an investment of faith that the other is open, reliable, honest, benevolent, and competent.³³ Carless asserted that trust was essential if learners were to take risks and fully engage in challenging learning activities that may reveal their weaknesses.

We propose that psychological safety is an overarching construct that ties these concepts together (working as allies, the educator-learner relationship and trust), which has a powerful influence on engagement and learning. Drawing on Edmondson's work within psychology, psychological safety may be defined as "a shared belief that the educator-learner relationship is safe for interpersonal risk taking", which creates 'a sense of confidence that [the educator] will not embarrass, reject or punish [the learner]...due to mutual respect and trust'.³⁴

Edmondson's research exploring interpersonal dynamics and healthcare outcomes found that, in nursing teams with high psychological safety, productive learning behaviours were commonly seen, such as asking questions, discussing mistakes, seeking help or trialling new

ideas. The environment was characterised by respect for others' expertise; trust that people had good intentions and were invested in others' success; and interest, acceptance and care for people as individuals.³⁴ Team leaders held high standards and were continually seeking to improve. Yet they were also supportive, coached their team, minimised hierarchy, were not defensive when challenged, and role modelled learning behaviours.³⁴

The effect of psychological safety on learning and performance has been demonstrated in other areas of healthcare.³⁵⁻³⁸ In simulation-based education, the importance of psychological safety is particularly emphasised; it is explicitly labelled as a goal at the outset and both educators and learners commit to ground rules that 'realise it' in practice.³⁹⁻⁴¹ In the area of doctor-patient communication, psychological safety promotes greater patient involvement and free flow of information between doctor and patient, which results in more accurate assessments, shared decision making, resolution of uncertainties, implementation of plans and improved clinical outcomes.⁴²

Applying this to feedback interactions, it may be that psychological safety is a key mediator encouraging or deterring learners' participation. When learners use productive learning behaviours, they may reveal previously undetected limitations and trigger adverse responses from the educator, for example a disparaging remark, lower grading or exclusion from a group of the 'favoured few'.^{29,34,43} Potential threats are amplified when educators are senior health professionals with power over learners' progress, such as responsibilities for summative assessments or professional references.^{44,45} Medicine, in particular, has a powerful hierarchy.^{46,47} Hence a learner may decide to keep quiet, or, at least, to control the risk by regulating their exposure. The key question for any learner contemplating what to volunteer during a feedback conversation is: 'What is the likelihood that I will be respected, accepted and assisted or the opposite, that I will be humiliated, reprimanded or judged as inept?'^{29,39,46,47}

If educators could work with learners to maximise psychological safety, feedback conversations might be transformed. Learners might honestly reflect on their performance, explain their reasoning, reveal their difficulties, ask questions, propose their own ideas for improvement or contest educators' comments. If these learner contributions interacted with valuable educator inputs, the resulting co-construction of knowledge could substantially enhance learning outcomes. While this construct of psychological safety has been the focus of research in other contexts, the manifestation of psychological safety in workplace feedback discussions has been under-examined. Hence, our research question was: What

does psychological safety look like in workplace feedback and how can educators work with learners to foster it? Our definition of feedback, and the theoretical positioning of this research, sits within social constructivism with acknowledgement of the interdependence of social processes in knowledge generation.⁴⁸

Method

Collection of videos of feedback episodes

As part of a broader program of research investigating feedback practices, we collected self-recorded videos of formal face-to-face feedback episodes in routine clinical practice.

Participants involved health professional educator-learner pairs who were working together, within a major Australian hospital network.¹⁹ During recruitment, diversity was sought by rolling advertising to potential participants, with consideration of key factors including health profession and specialty, gender and supervisor experience (educators) or training level (learners). All participants gave written informed consent. Ethics approval for this study was obtained from the health service and university human research ethics committees (References: 15233L and CF13/1912-2013001005 respectively).

Videos were professionally transcribed verbatim and one researcher checked accuracy by watching the videos while reading transcripts (CJ). While viewing videos, initial impressions and observations were recorded as memos, and educators' practice was analysed using the Feedback Quality Instrument (FQI). The FQI is designed to assist educators in facilitating high quality, learner-centred feedback, aligning with a social constructivist paradigm. FQI items describe observable educator behaviours considered to engage, motivate and enable a learner to improve. Items were developed through a process involving an extensive literature review to identify information that substantiated ways educators could promote beneficial learner outcomes and a Delphi process with a panel of experts.^{19,49} During further testing and refining of the FQI, the gap in the literature on psychological safety became apparent (as described in the Introduction), which was the inspiration for this study. We chose to focus on the educator's role because of their power to steer feedback interactions.

Data collection and analysis for this study

In this study we looked for signs of psychological safety and associated educator approaches which seemed to help achieve the conditions that enabled candid learner contributions. We reasoned that learners' propensity to be forthcoming and participate in 'risks for the sake of learning' were indicators of learner psychological safety. Hence, we searched for occasions during the feedback sessions when learners repeatedly undertook productive learning

behaviours, particularly when learners became progressively more candid about their learning needs. Examples of these learning behaviours included sharing information, describing a difficulty, identifying their own sub-standard performance, naming a learning need, asking for help, asking a question or proposing a solution.³⁴ We then looked for corresponding educator behaviours that seemed to promote this form of engagement. We also looked for educator behaviours previously proposed to promote psychological safety in clinical and simulation-based conversations.^{34,39,40,50}

Transcripts were inductively coded according to principles of thematic analysis, guided by our research question focussing on psychological safety and sensitised by our theoretical framework of social constructivism.⁵¹ Ten transcripts of videos rated most highly using the FQI (reflecting a greater number of quality educator behaviours observed) were used to develop a coding framework, as these seemed most likely to involve a psychologically safe environment. First, four transcripts were open coded independently by each researcher, then researchers met to discuss and create an initial set of codes. Following this, a further six transcripts were coded independently then discussed in pairs (three by CJ and EM; three by CJ and JK), using and modifying the initial coding framework. Further team discussions led to consensus on a final coding framework with operational definitions and codes with similar properties grouped together. It included markers suggesting when learners felt psychologically safe and when they did not, noting corresponding educator behaviours.

The lead researcher (CJ) then re-watched each video and re-coded all transcripts using the analytical framework utilising NVivo 12 (NVivo version 12.5.0, QRS International). Interpretation and assimilation of codes, with descriptive quotes, into themes occurred at three separate research team meetings, with the final key themes agreed by consensus. In each meeting, a constant comparison process was utilised to identify consistencies and differences in coding between researchers.⁵² Repeated examination of the transcripts and coded data increased the likelihood that themes were grounded in the data.

Theoretical framing

Social constructivism is the theoretical framework underpinning our interpretation of productive feedback interactions. According to social constructivism, knowledge is created during the process of people interacting, particularly through discussion; hence the learning is specific and intrinsically linked to the context and people involved.⁵³ As effective feedback depends on a learner implementing desired changes, it is crucial for the learner to play an active role in understanding and contributing to the discussion. Hence, although we focused

on educators' approaches to helping establish psychological safety, we used learners' behaviours to signpost periods during the feedback interaction that we wanted to examine more closely. In our analysis of psychological safety using observational methods, we are aware of the risks of interpreting a phenomenon that is 'held' or 'experienced' by individuals. However, we viewed evidence of learner risk-taking and co-construction of knowledge as markers of an interaction that was enabled (or limited) by psychological safety.

Reflexivity

Reflexivity, the influence of the researchers' own perspectives, beliefs and experiences, on the interpretation of the data, was explicitly recognised and discussed. CJ is a physician, medical educator, and researcher with a special interest in feedback, who works at the health service involved in this study. JK and EM are both physiotherapists with extensive expertise as health professions educators and researchers in feedback and workplace based assessment. Their employment is university-based and not linked with the health service in this study.

Results

Thirty-six feedback sessions were collected. Participants included 34 educators (26 medical across 9 specialties, 4 nursing, and 4 physiotherapy professionals with a range of supervisor experience; 16 (47.1%) were male) and 35 learners (students and clinicians with a range of experience; 12 (34.3%) were male). Feedback was related to a specific task in 25 (69.4%) videos and a mid/end-of-attachment appraisal in 11 (30.6%) videos. Most of these feedback occasions were formative in nature but some served as summative contributions to longitudinal evaluations.

Educators used a variety of approaches to promote psychological safety. This included educators' setting the scene for a candid feedback interaction, positioning themselves as allies alongside the learner, focusing on continuing improvement and encouraging interactive dialogue, which signalled to learners that honest contributions were expected and valued. Four key themes are presented below with illustrative quotes.

Theme 1: Setting the scene for dialogue and candour

When feedback sessions began, many educators simply announced the topic for the session, for example: *'So we're going to talk about the surgery today'* [V4] and then moved swiftly onto performance evaluation.

A few educators did more to set up the interaction. Here, an educator highlighted the aim of the session and the importance of learners' input:

Educator: It's midway through the rotation, so it's a good opportunity to...touch base and see where things are at, see how you feel things are going, and...make sure things are on track. So, from your perspective, how do you feel the...rotation is going so far?

Learner: For me, the rotation has been very amazing. Psychiatry has always been my weakest area during my medical training, and that's one of the main reasons that I have requested to come here. [I] don't normally do a comprehensive psychiatric assessment...so I find that it is quite challenging. But, on the other side, I'm learning combining mental health along with the medical issues...I find that...very rewarding. [V19]

In this next example, the educator proposed their plan for the session, so the learner knew what to expect. Yet the most outstanding feature was the educator's explicit invitation for the learner to contest their comments or ask questions, thereby encouraging productive learning behaviours:

We've just gone through a clinical scenario and what I'd like to do is talk about a couple of aspects of your performance where you've done some really good skills that are worth continuing with and identify...a couple of areas that you can work on, over the next little while, to improve your performance....feel free to stop me at any point in time if I say things that you don't agree with or that you need clarification on. [V3]

However, educators did not comprehensively set the scene for a quality feedback interaction by highlighting the purpose (to help learners improve), outlining the plan (to analyse their performance and develop a learning plan), setting expectations for an interactive dialogue focussed on learning and clarifying the time available. Even when educators did include some of these components, none sought learners' input to negotiate any aspects of the session structure.

Theme 2: Educator as ally

Educators commonly positioned themselves as an ally, working alongside the learner. They offered support and assistance, to facilitate learner development and actively tried to reduce the power gap.

Offering support and assistance

Educators frequently used the collective pronoun 'we', suggesting solidarity with the learner and expressed empathy for the struggles that learners faced.

*Educator: So, arterial lines: like I said before, they're the things that **we** stuff up, that **we** fail at the most often....They're difficult, they're fiddly...and ...often **we**...take multiple attempts to get [them in]...Saying that, what can you do to be better at them? Have you used the [Tradename] kits?*

Learner: Yes, I have used them before...I thought...it would actually...be a bit too big for [the patient's blood] vessel because she was quite dainty, and...they seem a bit chunkier...and with smaller vessels, I've struggled to get them in. So that's why I didn't initially go for that.

Educator: No, fair enough...What's your default?...The advantage of [these kits] is, as soon as you get a flashback [of blood once you're in the artery]...you can just put the [guide] wire in...So...have a think about it...I think they're handy but obviously not everyone uses them. [V28]

It was very common for educators to offer advice to help learners improve. Often these were useful practice tips (as above). In addition, some educators addressed meta-cognitive processes, for example by suggesting strategies to make the most of learning opportunities:

Don't be afraid to put your hand up and say, "Can I come and watch you do that?"...if it's...a learning opportunity that you need...I know that's hard...when it's busy...but it might be that you offer to do something on their behalf. [V36]

Reducing the power gap

The literature describes how the hierarchy within the health professions may exacerbate a learner's fear of negative consequences if they expose their limitations or contest ideas. We found some educators demonstrated humility and tried to reduce the power gap. A few educators did this by revealing their own vulnerabilities, such as admitting they had made mistakes, did not know everything or were still learning:

So there's always things to learn, and I'm still learning [V17]

Educators actively shared power by showing respect for learners' opinions or not assuming their own judgement or advice were indisputable. Here an educator indicated awareness that their evaluations may not accurately reflect the learner's capability due to limited observations:

'Like I've said before, it's hard to differentiate between 'always demonstrates' and 'mostly demonstrates' [rating options on the assessment form] when I'm not working with you every day.' [V36]

Similarly, an educator specifically explored how their presence may have affected the learner's performance:

Educator: So we've just gone through the Mini CEX process. You mentioned you haven't done one of those before. How did you find it?

Learner: I thought it was good. It's different having somebody there...As a student...you often have somebody in the room but...when you work for a while, and don't have someone in the room...it's a little bit, ah, daunting at first but you get used to it.

Educator: Do you think you did things differently because I was standing there watching?

Learner: ...because I was being assessed, it kept running through my mind whether I'd missed something, which I wouldn't normally do. I'd do that as I was writing notes and then go back and check with the patient. [V9]

Some educators used phrases such as 'I suggest' or 'I would recommend' when they offered ideas, rather than 'you need to' or 'you must', and explained their reasoning. Educators also checked learners' thoughts about their judgements or recommendations:

Educator: When we're doing consultant ward rounds, I like the way you present what's happened to the patient [and] the issues but I'd like more of a management plan as well... Making sure that you're making those decisions and...taking ownership of the patient...Just a few things that you can work on and become even better. Does that sound fair?

Learner: Yeah, that's good....I suppose, when you're a reg, I feel like, "Oh, [the consultant]'s here to fix all the patients"...It's always...how I have been...just to present the issues.

Educator: But I think you...can step up...If there's anything that you're not quite sure about, you can say, "Hm, I'm not quite sure, but I think this is the way that I would go."... So even if you're not 100% sure, you suggest something. I mean, when you become a consultant, ...you may not know all the right answers but it's all about making a [reasonable] decision.

Learner: Yeah, all right, sounds good. I'll work on that. [V1]

In summary, many educators used strategies to convey their desire to be allies with learners. Educators' helpful, caring, humble and respectful responses (and the absence of punitive

ones) seemed to build trust. This was evidenced by learners frequently responding to these safety signals by revealing more of their perspective, as demonstrated in the passages above. Learners were monitoring educator cues within the feedback session, which appeared to influence what they chose to contribute subsequently.

Theme 3: A continuing improvement orientation

We observed ways educators attempted to create a psychologically safe environment when dealing with learner's inexperience, mistakes and skills gaps. This approach was characterised by a focus on continuous improvement.

It's OK, gaps and mistakes are expected while learning

Some educators expressed that skill gaps or errors were expected during skill development:

It's okay to make mistakes, and stumble, ...because... you're a student and the point is to learn. [V10]

A common strategy was for educators to normalise a learner's mistake, by saying it was common or admitting they had made the same mistake while learning the skill. Here a surgeon gives some technical advice:

You need to go...directly down, rather than into it, which is a common mistake. I did it when I first started and everyone does it. [V24]

Educators often mentioned the learner's experience or training level during performance evaluations. This suggested that educators aligned their expectations accordingly, commending fledgling skills and accepting deficiencies early in the learning journey:

When you came in, your neuro assessment skills...weren't particularly strong. But...we need to take into account the fact that you haven't actually covered that at [university] yet. [V10]

At times educators worked with learners to reduce excessively high learner expectations:

Learner: ...sometimes it gets too busy...one discharge, one admission... [I would like] to learn how to manage all the things on time...The nurses...sometimes get really, really busy and they manage really, really well...

Educator: ...You guys come in for two weeks and then you're gone again... don't stress too much...because you just don't spend enough time in the ward to have really good time management. [V10]

Educator focuses on learning strategies

Some educators commended learners' effort, strategies and progress thereby privileging ongoing development over validating performance:

Educator: I think your critical thinking is really good...From where you started to where you are at now, that ability to stop and think, "Okay, I'm doing this; this is why I'm doing it", is really good...What sort of strategies have you put in place to get there...?

Learner: I think [after an experience]...which I'm not familiar with, going to someone or going back home and...reflecting and then going to...our study day notes, just to scrub up on things.

Educator: You can..definitely see that in your work; that you've gone home, looked things up ...You're a very keen learner, which has obviously helped in your practice.

[V36]

In summary, some educators focussed on how learners could progressively develop their skills. They took account of learners' experience, provided commentary which implied that gaps and errors were an integral part of the learning process and concentrated on optimising learning strategies that could assist with ongoing development.

Theme 4: Encouraging interactive dialogue

We found that interactive dialogue, when both perspectives were voiced and responses were related to the other's comments, formed the basis for co-construction of tailored improvement strategies. This went beyond turn-taking; there was evidence of both educators and learners modifying their views, as new information was considered.

Sharing information

First, we looked at how information was shared, offering the opportunity for each party to hear and consider the other's perspective. We found that educators routinely expressed their thoughts and opinions. In contrast, learners typically only spoke when educators asked them questions and even then, their initial answers tended to be brief and superficial.

Educator: Why don't you start off by telling me how you went?

Learner: I thought it was okay...nothing went terribly wrong. [V11]

A few educators made additional efforts to gain a greater understanding of the learner's perspective by exploring it more thoroughly. The following excerpt concerned a learner's assessment of an elderly man, accompanied by his daughter, in the emergency department:

Educator: If you had your time again, is there anything that you would have done differently?

Learner: Uhm.. not that I can think of...[long pause, uninterrupted by the educator]

I think uugh...maybe, just clarify a few more things with the patient themselves...I spoke quite a lot to the daughter.

Educator: Mhm, mhm.

Learner: I got a little bit of information out of the patient, but he...seemed to be referring to his daughter, anyway, for the history, which is why I turned to...her for a bit more information.

Educator: Yes.

Learner: Uhm, so maybe... starting off with the patient a bit more...and then just checking in with the... daughter for further information.

Educator: Mm.

Learner: Yeah. [learner indicates she has finished talking]

Educator: It's always difficult when there's family in the room that know more; they keep wanting to interject but you're trying to build a relationship with the patient [first] [V9]

Here, the educator used open-ended questions and demonstrated attentive listening. These skills include remaining silent when the learner paused, to allow them to think and then continue talking; encouraging (sounds that convey, 'I'm listening, go on' such as 'hmm' or 'yes'); summarising and echoing. After an initial deflection, the learner reflected on events, revealed their difficulties and proposed a potential solution (all valuable learning behaviours). The educator's comments were characterised by empathy and assistance, not criticism, thereby promoting psychological safety.

In particular, learners typically only revealed difficulties when they were specifically asked about them:

Educator: What are some of the things that you're finding difficult...on the ward?

Learner: I still feel like, with the patient load,...that I haven't really...gotten on top of that yet...there's still things...that I'd like to do that I just haven't got the time to do.
[V1]

Alternatively, some educators cited a specific instance and then asked learners for their comments. This example comes later in the emergency department interaction:

Educator: When you entered the room, tell me about the way that you introduced yourself...to the daughter.

Learner: [I] made the mistake of - I knew she was in the room, but I didn't - I should have initially...asked who she was [V9]

Responding to the other's comments

Next, we explored how participants responded to the other's comments, to complete communication loops. Here, a student was discussing their assessment of a patient presenting with paranoia:

Educator: What else do you think you could have improved on?

Learner: Probably handling her getting a little bit upset or ...completely shutting down....I had a feeling she might, regarding that topic...Do you automatically just stop everything and go, 'Okay we'll come back to it later,' or can you get past that?

Educator: That's the key information that you really want to find out...Now obviously you don't want to...make it escalate and get aggressive...In situations...where it is a touchy subject, you may sit back and, just for three or four seconds, wait and see whether they carry on with the conversation.

...Did you realise how it took a little bit of time for us to actually see her real presentation? So, like in the first ...10 minutes, she kept it together pretty well...then it.. started – she was getting irritable, she wanted to end the conversation-

Learner: Was it 15 minutes, really? It didn't feel that long.

Educator: Yeah...that's why you need to...keep the conversation going for a longer period of time...getting them to...tap in a little bit more...

Learner: That makes sense because I found with the risk assessments that we do..each shift...can be...very abrupt... In those five minutes, not everyone is open enough to -

Educator: Correct.

Learner: ... I hear later on [that] they've got paranoid thoughts or...delusions but they never actually showed that when I was...talking to them. [V35]

Notably, the learner directly asked the educator for help; this bold move was unique within our data set. Generally when learners mentioned a difficulty, they appeared to assume this was a sufficient hint and did not explicitly ask for assistance (some educators responded but others did not).

As the speaker's role alternated, it allowed each participant to frequently contribute to the shared mental construction zone, in which ideas (or gaps) were clarified, tested and developed. The educator endorsed the learner's dilemma, offered a solution and then focused back on the learner. Throughout, the learner had a central role in the discourse, with the educator taking their cues from the learner and tailoring comments accordingly.

However, such interactive dialogue was not common. Commonly educators ignored learners' comments and pursued their own agenda. They typically only asked, 'Do you have any questions?' at the conclusion of the session. Learners habitually acknowledged educators' comments by saying 'yes' but little input beyond this, and rarely sought a response from educators to their comments.

In particular, views were scarcely contested. In our data, no learner overtly disagreed with an educator's remarks. When educators did express a different opinion, mostly they were reassuring learners that their work was satisfactory, contrary to their concerns. In this unique example, a paediatric specialist counters a junior doctor's view:

Educator: ... I would encourage you to...[propose] how...to settle this...You had a [young] boy and...parents, who were very strong in their opinions and their wishes on things...In terms of your management plan: I think you knew what you wanted to do but you felt unsure because...of [how the parents might react].

Learner: The moment I was examining the child...and the mother...strongly voiced her concerns...I immediately...went, "Maybe I should have a consultant here before I even suggest [the required procedure] to the parents"...In paediatrics, you tend to take a step back when a parent raises their voice because you're worried, maybe they are right, because occasionally they are right when they raise their voice.

Educator: ...It's a difficult balance, isn't it, between having conviction in your own approach and being open to the concerns of the parents, which we always need to

listen to, even if they're not necessarily right or helpful [for the child]? That's not just an experience of being a little junior in the team, that's an experience you get all the way through your career...You will have parents who have their own ideas about... how this needs to be managed, and you're beginning to develop skills on how to engage them in that process and the fear that usually underlies that behaviour, as well as making sure that the priorities for the patient's management are still followed...

Learner: Hmm, definitely. The other thing...is – I'm worried that sometimes when, as a junior you're overconfident, given you don't know much, you go into a room thinking, "Yep, I can handle this situation" but over-confidence...can lead to more harm.

Though I think I've always been in the under-confident side, like, "Always seek help before you put something in or do something," because after that, back tracking won't always help you.

Educator: No, you're absolutely right and we always need to be cognisant of safety...You know, most of the time quite clearly what needs to happen clinically... having a bit of confidence...and saying [to the parent], "Look, this is what I think I need to do but I will go and clarify that with my consultant because [your child]'s obviously in distress and you've got some strong ideas about what needs to happen."

[V3]

The educator clearly repositioned the parents' views as paramount, while empathising and normalising the predicament this created for the learner. The educator continued by sharing their clinical insights into this challenge. This response seemed to promote psychological safety as the learner then candidly redirected the discussion by revealing another concern, specifically what had held them back from initiating the management plan. This gave the educator the chance to more accurately target their advice to address a problem the learner was grappling with.

In summary, we identified examples of interactive dialogue in which learners openly shared their mindset and participants responded to each other's comments. This building on the thoughts of others was distinct from 'turn-taking' as a proxy for 'two-way interaction'. However, this scenario was uncommon. Learners tended to speak only when invited. Therefore, learners' difficulties, reasoning, questions, opinions or ideas were mostly never voiced, and hence, could not be responded to. However, a few educators used exploratory questions and attentive listening; this seemed to sustain the invitation for the learner to

speak and convey that the educator was interested in and valued the learner's input. This approach appeared to contribute to building psychological safety and encouraged candour from learners.

However, mostly communication loops were 'left hanging' incomplete, when participants did not respond to the other's contributions. Educators did not routinely respond to learners' comments. These were lost opportunities to promote psychological safety by reducing uncertainty in the learner's mind regarding the educator's opinion on what the learner had said, or to offer support and assistance. In addition, both parties appeared reluctant to debate or disagree. Hence, most chances to find out more, clarify, challenge or modify discussion points and construct common ground during the conversation were not utilised. Nevertheless, on the few occasions when both participants engaged in an interactive discussion, we saw an evolution in thinking on both sides and co-development of tailored improvement strategies. By encouraging the learner to articulate exactly what they were struggling to do, the educator was able to customise their advice.

Appendix 1

See online supplementary material, in Appendix 1, for an extended excerpt showcasing what psychological safety could look like and how an educator might work with a learner to foster it.

Discussion

We have presented our analysis under four themes that describe how educators worked with learners to create psychological safety in verbal feedback sessions: *Setting the scene for dialogue and candour*, *Educator as ally*, *A continuing improvement orientation* and *Encouraging interactive dialogue*. Despite the literature advocating that aspects of psychological safety such as 'trust', relationship building' and 'educational alliance' are crucial for effective feedback, there is little empirical evidence of what this looks like in workplace feedback conversations.^{22,28,31,32} This is the gap we have attempted to address, using empirical research, to describe ways that educators worked with learners to foster psychological safety in formal verbal feedback sessions. However, the approaches presented here are neither prescriptive nor exhaustive.

Importantly, there were indications of an undercurrent or a 'meta feedback loop' for the learner, in which educators' reactions promoted or inhibited learners' openness and engagement in learning within the conversation. Indeed, this highlights the value of an

educator setting the scene for dialogue and candour at the start of a feedback session (although this explicit invitation requires ongoing support throughout the session by what the educator *does*). Learners appeared to be making moment-by-moment assessments about psychological safety and the risk-to-benefit analysis of what to say. When educators offered support and assistance (not criticism), we saw learners progressively engage more candidly in learning activities, like explaining details, offering their opinion, broaching drawbacks in educators' recommendations or suggesting alternatives. In other words, learners were dynamically reading cues from the educator, to determine whether they should advance or retreat. When a learner 'dipped their toe in', where the response fostered psychological safety, the learner boldly took a step deeper. However, it is important to note in many of the feedback sessions in this study, educators dominated the conversation and when a learner made an initial comment, this was ignored. This closely mirrors research into doctor-patient communication, in which doctors' responses strongly influenced how much patients disclosed during consultations.^{42,54,55} Frequently doctors ignored patients' initial hints, which suppressed further elaboration and cooperation.⁵⁶

This pattern reinforces the importance of assisting educators to understand the value of learner-centred feedback interactions, and offering practical ideas on how they could operationalise this construct in clinical practice in collaboration with learners. Clinical educators hold a high degree of structural power over learners (both students and junior clinical staff) as control over training progression is commonly embedded in educators' roles.^{18,57} Helping educators to be more conscious of the impact of their invitations and responses (or lack thereof) on learners' propensity to take productive intellectual risks, may motivate educators to change their practice. Having linguistic examples of how to elicit and respond to another's agenda may assist educators to enact changes and have a positive impact on feedback rituals in clinical practice.

Our findings overall reinforce previous research across the fields of higher education, health professions education and communication, which have reported that learning behaviours are fostered by trust, respect, empathy, seeking to understand the learners' perspective and a non-judgemental attitude that accepts mistakes as inevitable during learning.^{29,32,50} In simulation-based education, a set of 'promising practices' have been proposed for creating a safe context for learning, derived from a literature review and the team's expertise.^{39,40} These included clarifying expectations; attending to logistical details; showing respect and curiosity regarding participants' perspectives; understanding that mistakes occur in challenging learning environments, focusing on assisting learners to enhance their skills and maintaining

positive regard for them. Some of the themes we identified are consistent with these experts' insights into the phenomenon in simulation-based contexts, but our examples of practical behaviours and dialogue offer options that educators, wanting to build psychological safety, could tailor for specific contexts during their own feedback encounters.

The theme '*Setting the scene for dialogue and candour*' examined how educators set the tone for the session upfront. In our study, this was not done well. When educators indicate their intention to assist and highlight the value of learners' contributions from the outset, this endorses interactive dialogue and enables learners to better position themselves to actively participate. It is likely that some of the educator-learner pairs did not know each other well. In this context, being explicit about expectations is likely to be even more important as routines have not been established. By creating transparency and offering some degree of control about what is going to happen and what is expected, learners are likely to feel less anxious. This is important for learning outcomes as excessive anxiety distracts attention, interferes with complex thinking and impairs memory.^{58,59} This theme aligns closely with guidelines for simulation-based education and doctor-patient communication skills, which outline the importance of setting the tone for a collaborative partnership from the start.^{39,40,60}

The next theme '*Educator as ally*' identified how educators offered support and assistance to learners and purposefully attempted to reduce the power imbalance. These strategies seem to foster psychological safety by increasing the likelihood that 'taking a chance on learning' would reap benefits for learners. Bearman and Molloy used the phrase 'intellectual streaking' to describe instances when educators 'exposed' their own limitations to learners, with the potential to build trust and reduce the power imbalance through this gesture of reciprocal vulnerability.⁶¹ In a subsequent article, the same authors explored the 'vulnerability-credibility' tension where educators revealing their uncertainties regarding complex clinical problems to facilitate learning, are also trying to maintain their standing as experts. They advocated for the value of "building a culture that acknowledges fallibility" - as errors are central to learning throughout life at work - "rather than honouring perfectionism."^{18,62}

The theme '*A continuing improvement orientation*' aligns with a 'growth mindset', as described by Dweck.⁶³ This mindset privileges ongoing learning and focuses on developing skills by seeking out challenging tasks and applying effective strategies, effort and persistence. Mistakes and knowledge gaps are seen as opportunities to learn, not cause for covering up by a learner or criticism from an educator. This offers an approach to combine

high professional standards with an understanding that mistakes or gaps are expected while learning.

The final theme '*Encouraging interactive dialogue*' describes ways that educators facilitated discussions in which participants build on each other's contributions. This led to the creation of common ground (explicitly shared understandings), and the co-construction of development strategies targeted to address the learner's difficulty. This key finding aligns with recommendations to 'build a history' by equally prioritising the patient's and doctor's perspectives and priorities during a consultation.^{50,54} This has been likened to "two writers collaborating on a manuscript...until both are satisfied".⁵⁵ This paradigm of integrating both unique contributions has been shown to result in better patient trust, satisfaction and clinical outcomes, probably related to improved adherence to plans developed collaboratively.⁵⁵ However, in our study, and other studies of feedback,⁶⁴ this was not commonly seen.

Strengths and weaknesses

Our study analysed 36 videos of authentic formal verbal feedback sessions during routine clinical practice with diversity of health professional participants across specialty, experience and gender. We examined the context in which learners increasingly disclosed information and engaged in learning activities, as a signpost for psychological safety. The thematic analysis was rigorous and identified novel insights into educator behaviours associated with indications of a safe learning environment. This article adds to the literature by drawing on the approaches of clinical educators as they attempted to invite learners into honest discussion and collaborative planning.

Our work has some limitations. We could only observe associated educator behaviours and postulate effects on psychological safety, inferred from learners' inputs or lack thereof. It is possible that learners freely expressed themselves despite feeling unsafe, although we attempted to mitigate this by focusing on occasions when learners became increasingly candid throughout the session. Further research is required to test our propositions. We did not record how long educator-learner pairs had worked together. Previous encounters would have likely influenced psychological safety within the recorded feedback episodes. In addition, participating in the study and videoing the session may have influenced participant behaviours. All participants worked at a single large health service in Australia and hence this may limit generalisability as feedback is influenced by culture and context. Other factors that may influence psychological safety, such as the individual's preferences for learning and communication, the local unit and institution involved, were not investigated.⁶⁴

Conclusions

There is increasing evidence to suggest that feedback, when characterised by an interactive dialogue, results in better outcomes for learners.^{8,15,32,65} However, the literature is thin when it comes to explaining how a safe climate is built, to encourage learners to take risks within a feedback dialogue. Our data demonstrated that when learner and educator perspectives were shared, considered and responded to, new co-constructed ideas were fashioned. There were indications of learners 'testing the waters', with educators' responses strongly influencing subsequent learner involvement. When there were signs of psychological safety, conversations took on a 'building on' tenor, which incorporated the agendas of both parties. If participants set their sights on optimising learning through feedback, creating a psychologically safe environment, to encourage learners to take risks, becomes crucial.

This in-depth observational study clarifies what psychologically safe workplace feedback conversations could look like and offers educators linguistic strategies that may foster learners' contributions to feedback 'created with them', not 'directed at them'.

Contributors

CJ conceived the research question, participated in research design, analysed videos and transcripts, interpreted data and prepared and revised the manuscript.

JK participated in designing the research, analysed videos and transcripts, interpreted data and helped prepare and revise the manuscript.

EM participated in designing the research, analysed videos and transcripts, interpreted data and helped prepare and revise the manuscript.

All authors approved the final manuscript and agreed to be accountable for all aspects of this work.

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None

Ethics approval

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References

1. Watling CJ. Unfulfilled promise, untapped potential: feedback at the crossroads. *Medical Teacher*. 2014;36(8):692-697.
2. Wood D. Formative assessment. In: Swanwick T, ed. *Understanding medical education. Evidence, theory and practice*. 1st ed. Oxford: Wiley-Blackwell; 2010.
3. van der Leeuw RM, Teunissen PW, van der Vleuten CPM. Broadening the Scope of Feedback to Promote Its Relevance to Workplace Learning. *Academic Medicine*. 2018;93(4):556-559.
4. Johnson CE, Weerasuria MP, Keating JL. The effect of face-to-face verbal feedback compared to no or alternative feedback on the objective workplace task performance of health professionals: a systematic review and meta-analysis. *BMJ Open*. 2020;*In press*.
5. Boud D, Molloy E. What is the problem with feedback? In: Boud D, Molloy E, eds. *Feedback in higher and professional education*. London: Routledge; 2013:1-10.
6. Sadler DR. Formative assessment and the design of instructional systems. *Instructional Science*. 1989;18(2):119-144.
7. Hattie J, Timperley H. The Power of Feedback. *Review of Educational Research*. 2007;77(1):81-112.
8. Nicol DJ, Macfarlane-Dick D. Formative assessment and self-regulated learning: a model and seven principles of good feedback practice. *Studies in Higher Education*. 2006;31(2):199-218.
9. Johnson CE, Molloy EK. Building evaluative judgement through the process of feedback. In: Boud D, Ajjawi R, Dawson P, Tai J, eds. *Developing evaluative judgement in higher education. Assessment for knowing and producing quality work*. London: Routledge; 2018:166-175.
10. Dawson P, Ajjawi R, Boud D, Tai J. Introduction: what is evaluative judgement? In: Boud D, Ajjawi R, Dawson P, Tai J, eds. *Developing evaluative judgement in higher education. Assessment for knowing and producing quality work*. London: Routledge; 2018:1-4.

11. Noble C, Billett S, Armit L, et al. "It's yours to take": generating learner feedback literacy in the workplace. *Advances in health sciences education : theory and practice*. 2019.
12. Kaufman DM, Mann KV. Teaching and learning in medical education: How theory can inform practice. In: Swanwick T, ed. *Understanding medical education. Evidence, theory and practice*. 2nd ed. Oxford: Wiley Blackwell; 2014:7-29.
13. Tai JH, Ajjawi R, Boud D, Dawson P, Panadero E. Developing evaluative judgement: enabling students to make decisions about the quality of work. *Higher Education*. 2017: <https://doi.org/10.1007/s10734-10017-10220-10733>.
14. Sargeant J, Lockyer J, Mann K, et al. Facilitated Reflective Performance Feedback: Developing an Evidence- and Theory-Based Model That Builds Relationship, Explores Reactions and Content, and Coaches for Performance Change (R2C2). *Academic Medicine*. 2015;90(12):1698-1706.
15. Ajjawi R, Boud D. Researching feedback dialogue: an interactional analysis approach. *Assessment & Evaluation in Higher Education*. 2017;42(2):252-265.
16. Armson H, Lockyer JM, Zetkovic M, Könings KD, Sargeant J. Identifying coaching skills to improve feedback use in postgraduate medical education. *Medical Education*. 2019;53(5):477-493.
17. Ramani S, Könings KD, Ginsburg S, van der Vleuten CPM. Twelve tips to promote a feedback culture with a growth mind-set: Swinging the feedback pendulum from recipes to relationships. *Medical Teacher*. 2018:1-7.
18. Molloy E, Bearman M. Embracing the tension between vulnerability and credibility: 'intellectual candour' in health professions education. *Med Educ*. 2019;53(1):32-41.
19. Johnson CE, Keating JL, Farlie MK, Kent F, Leech M, Molloy EK. Educators' behaviours during feedback in authentic clinical practice settings: an observational study and systematic analysis. *BMC Medical Education*. 2019;19(1):129.
20. Molloy E. Time to pause: feedback in clinical education. In: Delany C, Molloy E, eds. *Clinical education in the health professions*. Sydney: Elsevier; 2009:128-146.
21. Blatt B, Confessore S, Kallenberg G, Greenberg L. Verbal interaction analysis: viewing feedback through a different lens. *Teaching and Learning in Medicine*. 2008;20(4):329-333.
22. Carless D, Boud D. The development of student feedback literacy: enabling uptake of feedback. *Assessment & Evaluation in Higher Education*. 2018;43(8):1315-1325.

23. Sargeant J, Mann K, Sinclair D, van der Vleuten C, Metsemakers J. Challenges in multisource feedback: intended and unintended outcomes. *Medical Education*. 2007;41(6):583-591.
24. Pelgrim EAM, Kramer AWM, Mokkink HGA, Vleuten CPM. Quality of written narrative feedback and reflection in a modified mini-clinical evaluation exercise: an observational study. *BMC Medical Education*. 2012;12(12):97.
25. Bing-You RG, Paterson J, Levine MA. Feedback falling on deaf ears: residents' receptivity to feedback tempered by sender credibility. *Medical Teacher*. 1997;19(1):40-44.
26. Winstone NE, Nash RA, Rowntree J, Parker M. 'It'd be useful, but I wouldn't use it': barriers to university students' feedback seeking and recipience. *Studies in Higher Education*. 2017;42(11):2026-2041.
27. Ende J. Feedback in clinical medical education. *Journal of the American Medical Association*. 1983;250(6):777-781.
28. Sargeant J, Lockyer JM, Mann K, et al. The R2C2 Model in Residency Education: How Does It Foster Coaching and Promote Feedback Use? *Acad Med*. 2018;93(7):1055-1063.
29. Sargeant J, Armson H, Chesluk B, et al. The processes and dimensions of informed self-assessment: a conceptual model. *Academic Medicine*. 2010;85(7):1212-1220.
30. Telio S, Ajjawi R, Regehr G. The "educational alliance" as a framework for reconceptualizing feedback in medical education. *Academic Medicine*. 2015;90(5):609-614.
31. Telio S, Regehr G, Ajjawi R. Feedback and the educational alliance: examining credibility judgements and their consequences. *Medical Education*. 2016;50(9):933-942.
32. Carless D. Trust and its role in facilitating dialogic feedback. In: Boud D, Molloy E, eds. *Feedback in higher and professional education*. London: Routledge; 2013:90-103.
33. Tschannen-Moran M. *Trust matters: Leadership for successful schools*. San Francisco: Jossey Bass; 2004.
34. Edmondson AC. Psychological Safety and Learning Behavior in Work Teams. *Administrative Science Quarterly*. 1999;44(2):350-383.
35. Rosenbaum L. Cursed by Knowledge — Building a Culture of Psychological Safety. *New England Journal of Medicine*. 2019;380(8):786-790.

36. Riskin A, Erez A, Foulk TA, et al. The Impact of Rudeness on Medical Team Performance: A Randomized Trial. *Pediatrics*. 2015;136(3):487-495.
37. Katz D, Blasius K, Isaak R, et al. Exposure to incivility hinders clinical performance in a simulated operative crisis. *BMJ Quality & Safety*. 2019;28(9):750-757.
38. Edmondson AC. Learning from Mistakes is Easier Said Than Done: Group and Organizational Influences on the Detection and Correction of Human Error. *The Journal of Applied Behavioral Science*. 1996;32(1):5-28.
39. Rudolph JW, Raemer DB, Simon R. Establishing a Safe Container for Learning in Simulation: The Role of the Presimulation Briefing. *Simulation in Healthcare*. 2014;9(6):339-349.
40. Kolbe M, Eppich W, Rudolph J, et al. Managing psychological safety in debriefings: a dynamic balancing act. *BMJ Simulation and Technology Enhanced Learning*. 2019;bmjstel-2019-000470.
41. Krogh K, Bearman M, Nestel D. "Thinking on your feet"—a qualitative study of debriefing practice. *Advances in Simulation*. 2016;1(1):12.
42. Silverman J, Kurtz S, Draper J. Building the relationship. In: *Skills for communicating with patients*. 3rd ed. London: Radcliffe Publishing 2013:118-148.
43. Bynum WE, Haque TM. Risky Business: Psychological Safety and the Risks of Learning Medicine. *Journal of Graduate Medical Education*. 2016;8(5):780-782.
44. Harrison CJ, Konings KD, Schuwirth L, Wass V, van der Vleuten C. Barriers to the uptake and use of feedback in the context of summative assessment. *Advances in health sciences education : theory and practice*. 2015;20(1):229-245.
45. Castanelli DJ, Jowsey T, Chen Y, Weller JM. Perceptions of purpose, value, and process of the mini-Clinical Evaluation Exercise in anesthesia training. *Can J Anaesth*. 2016;63(12):1345-1356.
46. Panhwar MS, Kalra A. Breaking Down the Hierarchy of Medicine: The airline industry has taken the lead to improve communications for pilots, it is now time for medicine to follow with physicians. *European Heart Journal*. 2019;40(19):1482-1483.
47. Crowe S, Clarke N, Brugha R. 'You do not cross them': Hierarchy and emotion in doctors' narratives of power relations in specialist training. *Social Science & Medicine*. 2017;186:70-77.
48. Palincsar AS. Social constructivist perspectives on teaching and learning. *Annual Review of Psychology*. 1998;49(1):345-375.

49. Johnson CE, Keating JL, Boud DJ, et al. Identifying educator behaviours for high quality verbal feedback in health professions education: literature review and expert refinement. *BMC Medical Education*. 2016;16(1):96.
50. Silverman J, Kurtz S, Draper J. *Skills for communicating with patients*. 3rd ed. London: Radcliffe Publishing; 2013.
51. Miles M, Huberman AJS. *Qualitative data analysis: a methods sourcebook*. Los Angeles: Sage; 2014.
52. Boeije H. A Purposeful Approach to the Constant Comparative Method in the Analysis of Qualitative Interviews. *Quality and Quantity*. 2002;36(4):391-409.
53. Vygotsky LS. Interaction between learning and development. In: Cole M, John-Steiner V, Scribner S, Souberman E, eds. *Mind and Society*. Cambridge Massachusetts: Harvard University Press; 1978:77-91.
54. Haidet P, Paterniti DA. "Building" a History Rather Than "Taking" One: A Perspective on Information Sharing During the Medical Interview. *Archives of Internal Medicine*. 2003;163(10):1134-1140.
55. Platt FW, Platt CM. Two Collaborating Artists Produce a Work of Art: The Medical Interview. *Archives of Internal Medicine*. 2003;163(10):1131-1132.
56. Zimmermann C, Del Piccolo L, Finset A. Cues and concerns by patients in medical consultations: A literature review. *Psychological Bulletin*. 2007;133(3):438-463.
57. Urrieta L. Figured Worlds and Education: An Introduction to the Special Issue. *The Urban Review*. 2007;39(2):107-116.
58. Silverman J, Kurtz S, Draper J. Defining what to teach and learn. In: *Skills for communicating with patients*. 3rd ed. London: Radcliffe Publishing 2013:7-34.
59. Rudolph JW, Simon R, Raemer DB, Eppich WJ. Debriefing as formative assessment: closing performance gaps in medical education. *Academic Emergency Medicine*. 2008;15(11):1010-1016.
60. Silverman J, Kurtz S, Draper J. Initiating the session. In: *Skills for communicating with patients*. 3rd ed. London Radcliffe Publishing; 2013:35-58.
61. Bearman M, Molloy E. Intellectual streaking: The value of teachers exposing minds (and hearts). *Med Teach*. 2017;39(12):1284-1285.
62. Billett S. Errors and learning from errors at work. In: Bauer J, Hartteis C, eds. *Human Fallibility: The Ambiguity of Errors for Work and Learning*. Dordrecht: Springer; 2012:17-32

63. Dweck CS. Motivational processes affecting learning. *The American psychologist*. 1986;41.
64. Ramani S, Post SE, Könings K, Mann K, Katz JT, van der Vleuten C. "It's Just Not the Culture": A Qualitative Study Exploring Residents' Perceptions of the Impact of Institutional Culture on Feedback. *Teaching and Learning in Medicine*. 2017;29(2):153-161.
65. Molloy E, Boud D. Changing conceptions of feedback. In: D. B, Molloy E, eds. *Feedback in higher and professional education*. London: Routledge 2013:11-33.