

There's No Such Thing as "Nonjudgmental" Debriefing: A Theory and Method for Debriefing with Good Judgment

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We report on our experience with an approach to debriefing that emphasizes disclosing instructors' judgments and eliciting trainees' assumptions about the situation and their reasons for acting as they did. To highlight the importance of instructors disclosing their judgment skillfully, we call the approach "debriefing with good judgment." The approach draws on theory and empirical findings from a 35-year research program in the behavioral sciences on how to improve professional effectiveness through "reflective practice." This approach specifies a rigorous self-reflection process that helps trainees recognize and resolve pressing clinical and behavioral dilemmas raised by the simulation and the judgment of the instructor. The "debriefing with good judgment" approach is comprised of three elements. The first element is a conceptual model drawn from cognitive science. It stipulates that the trainees' "frames"—comprised of such things as knowledge, assumptions, and feelings—drive their actions. The actions, in turn, produce clinical results in a scenario. By uncovering the trainee's internal frame, the instructor can help the learner reframe internal assumptions and feelings and take action to achieve better results in the future. The second element is a stance of genuine curiosity about the trainee's frames. Presuming that the trainee's actions are an inevitable result of their frames, the instructor's job is that of a "cognitive detective" who tries to discover, through inquiry, what those frames are. The instructor establishes a "stance of curiosity" in which the trainees' mistakes are puzzles to be solved rather than simply erroneous. Finally, the approach includes a conversational technique designed to bring the judgment of the instructor and the frames of the trainee to light. The technique pairs advocacy and inquiry. Advocacy is a type of speech that includes an objective observation about and subjective judgment of the trainees' actions. Inquiry

is a genuinely curious question that attempts to illuminate the trainee's frame in relation to the action described in the instructor's advocacy. We find that the approach helps instructors manage the apparent tension between sharing critical, evaluative judgments while maintaining a trusting relationship with trainees.

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Sharing critical judgments is an essential part of learning in simulation and debriefing. Instructors often avoid giving voice to critical thoughts and feelings because they do not want to appear confrontational and they worry that criticism might lead to hurt feelings or defensiveness on the part of the trainee. Voicing critical judgment poses a dilemma for many instructors: "How can I deliver a critical message and share my expertise while avoiding negative emotions, preserving social 'face' and maintaining my relationship with the trainee?" This paper offers an approach to debriefing that addresses this dilemma.

The existing debriefing literature^{1–9} provides little guidance on how to create an environment in which trainees feel simultaneously challenged and psychologically safe¹⁰ enough to engage in rigorous reflection. By "rigorous reflection," we mean a process that brings to the surface and helps resolve the clinical and behavioral dilemmas and areas of confusion raised by the simulation experience. Drawing on a 35-year research program on improving professional effectiveness in the business world through "reflective practice,"^{11–17} this article articulates a model of debriefing for medical simulation exercises. The research program from which we adapted our approach has studied and helped thousands of practicing business executives and managers improve their personal and interpersonal effectiveness through the discipline of reflective practice. "Reflective practice" is a term coined by the late MIT professor Donald Schön to describe the discipline of examining the values, assumptions, and knowledge-base that drives one's own professional practice [see reference 12]. The debriefing model has three primary components: The first component is a conceptual model, drawn from research in cognitive science and on reflective practice, that guides the instructor on how to illuminate the mental models that were salient in guiding trainees' actions during the simulation. The second is an underlying debriefing "stance" that unites the apparently contradictory values of curiosity about and respect for the trainee and the value of clear evaluative judgments about trainee performance. The third component is a way of

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talking—combining advocacy and inquiry—that embodies the underlying stance.

The basis of this paper is the literature in the field of reflective practice and our experience with exercising the “debriefing with good judgment” approach. The four authors, who use this approach regularly, have together conducted approximately 2,000 debriefings using this method. Over the last 2 years, we have trained nearly 200 medical educators to use this approach. Most medical educators are able to reliably demonstrate competence after approximately 2 days of lecture and practice; expertise appears to require considerably longer to develop. Of the approximately 20 teaching faculty who regularly use simulation as an educational technique at our simulation center, approximately half use the “debriefing with good judgment” approach. The other half has not yet been trained in its use. Faculty who are comfortable with the technique find their skills quite stable and robust in the face of a great variety of trainees.

REFLECTIVE PRACTICE: METHOD AND THEORY

“Reflective practice” is a method used to scrutinize one’s own taken-for-granted assumptions and professional work practices. It is often accomplished in a collaborative setting¹⁶: in our case, the relevant setting is the simulation debriefing wherein we help colleagues and trainees develop crisis resource management, clinical, and reflective practice skills. Researchers at Harvard and the Massachusetts Institute of Technology developed the method as part of their investigation on how to support students in their professional schools and also to help experienced professionals to develop self-correcting versus “self-sealing” practice habits.¹⁹ They found that “reflective practitioners,” who learned to scrutinize their taken-for-granted assumptions and mental routines, were able to self-correct and improve their professional skills. On the other hand, those without skill in this self-scrutiny tended to seal out or ignore disconfirming data and maintained ineffective habits of practice.^{11,12,14,18,20}

The theory underlying reflective practice draws on cognitive science, social psychology, and anthropology. The central idea is that people make sense of external stimuli through internal cognitive “frames,” internal images of external reality.^{20–25} Terms for these images are myriad: “frames of reference,” “schemata,” and “mental models,” to name a few. People don’t passively perceive an objective reality, but engage in “sense-making” by which they actively filter, create, and apply meaning to their environment.^{26–28} For example, a diagnosis is a frame, as are the assumptions of “It’s not a good idea to discuss mistakes here,” or “I must have an bag-mask apparatus to ventilate this patient.” Figure 1 shows the relationships among frames, actions, and simulation results.

These frames, in turn, shape the actions people take. A trauma physician facing a patient with a ventilation problem will, for example, take one set of actions if she frames the symptoms as a physical obstruction of the airway and another if her diagnosis is reactive airway disease. A nurse who holds the frame that reporting an error will lead to punishment will report errors at a very different rate than one who believes the

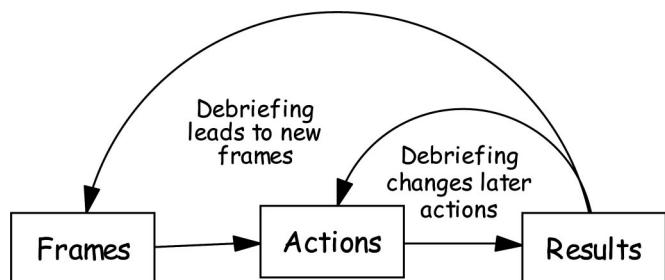


FIGURE 1. Frames are invisible, but inferable; they are in the mind of trainees and of instructors. Actions (including speech) are observable. Most results (e.g., vital signs, order/chaos) are also observable.

report will be used to improve work processes.²⁹ Or, in an example we will use throughout this article, consider an anesthesiologist who is called to manage an unresponsive patient in a setting where a bag-mask apparatus is not readily available. He holds the frame that he can only resuscitate using the device with which he is most familiar, a bag mask, and delays treatment while the patient descends into hypoxemia and arrest. The model suggests that people’s actions, including those of this anesthesiologist, are an inevitable result of how they frame the situation they face.

Importantly, even mistakes are usually the result of “intentionally rational” actions.^{23,27,30} That is, the actions make perfect sense given how the person was framing the situation at that moment. Continuing the example of the anesthesiologist, the instructor may be surprised that instead of considering passive oxygenation or delivering a mouth-to-mask “rescue breath,” the anesthesiologist trainee searched relentlessly for a bag-mask apparatus while the patient desaturated. These actions make perfect sense, however, when the instructor understands that the trainee held the belief that basic life support cannot be achieved without a bag-mask device, mouth-to-mask was out of the question, and passive oxygenation is something that he has never learned. It is the instructor’s job during a debriefing to help the trainee bring these frames to the surface, analyze their impact on actions, and craft new frames (e.g., “If I don’t find a bag-mask apparatus quickly, I have other options for ventilating”) and actions (giving mouth-to-mask breaths, or apply oxygen and mechanically optimize the airway opening). In practice, the instructor asks questions during the debriefing to elicit these frames.

“Results” in the reflective practice model are seen, in turn, to be prompted by the actions the trainee takes. Results are states; for example, the patient’s cardiac rhythm, whether the trainee ended up knowing the etiology of the clinical problem, or whether there was chaos or order in the clinical environment. The instructor and the trainee usually have an implicit idea of what the desired results were. For example, the patient remains stable and does not go into cardiac arrest, the trainee and others know why the patient arrested in the first place, or the resuscitation ran smoothly. The instructor explores with the trainee what frames and linked actions lead to the actual results and then, as depicted in the feedback

arrows in Figure 1, collaborates with the trainee in developing alternative frames and actions for the future.¹⁶

DEBRIEFING STANCE: MOVING FROM JUDGMENTAL DEBRIEFING TO DEBRIEFING WITH GOOD JUDGMENT

Although it may be obvious how discovering trainees' frames can enhance debriefing in medical simulation, the importance of identifying and revealing the instructor's frames is less obvious. Instructors' learning to identify and examine their own frames related to the simulation they observed is crucial to the process of a rigorous debriefing that is both nonthreatening and direct. Without an understanding of their own frames, instructors are handicapped in their ability to help illuminate a trainee's frames. The reasons for this are twofold. First, the instructors have to pull from experience about the frames and actions they themselves might have employed in a similar situation and be able to disclose these to the participant. Second, instructors have to be willing to test the validity of their own frames about the trainee's performance with trainees. To explain how this works, we start by describing and contrasting instructors' underlying frames when they are using judgmental, nonjudgmental and debriefing with good judgment approaches (Table 1).

THE JUDGMENTAL APPROACH TO DEBRIEFING

Imagine or recall the instructor whose voice, dripping with disdain, inquires of a group of students, "Can anyone tell me what went wrong here?" or "Can anyone tell me Pat's big mistake?" The judgmental approach, whether laced with harsh criticism or more gently applied, places truth solely in the possession of the instructor, error in the hands of the trainee, and presumes that there is an essential failure in the thinking or actions of the trainee. In the last 15 years, the discourse in medical journals suggests that many clinicians concerned about reducing medical error and improving patient safety have sought to move healthcare away from the "shame-and-blame" approach captured in this style of questioning.^{31,32} A judgmental approach to debriefing, especially one that includes harsh criticism, can have serious costs: humiliation, dampened motivation, reluctance to raise questions about later areas of confusion, or exit of talented trainees from the specialty or clinical practice altogether. But the shame-and-blame approach has an important virtue: the trainee is rarely left in doubt about what the instructor feels are the salient issues.

THE "NONJUDGMENTAL" APPROACH TO DEBRIEFING

The central dilemma facing instructors who want to move away from this judgmental approach is how to deliver

TABLE 1. Contrasting Judgmental, "Nonjudgmental," and Good Judgment Approaches to Debriefing

	Judgmental	Nonjudgmental	Debriefing with Good Judgment
The effective instructor	Gets the trainee to change	Gets the trainee to change	Creates a context for learning (and change)
Primary focus of debriefing	External: The actions or inactions of the other person	External: The actions or inactions of the other person	Internal: The meanings and assumptions of both instructor and trainee
How the trainee is seen	A mistake maker; a doer of actions	A mistake maker; a doer of actions	A meaning maker whose actions are the consequence of specific assumptions and knowledge
Who has the truth of the situation?	The instructor	The instructor	Possibly neither, either, or both
Who doesn't understand?	The trainee; "I (the instructor) will set you straight"	The trainee; "I (the instructor) will find the kindest way of filling you in on how to do this right."	The instructor: "I see what you are doing or not doing, and given my view, I don't get it;" Or "Given my view, it seems problematic; what am I missing here?" Genuine report of puzzlement and inquiry into how the trainee's actions can make sense.
Basic stance toward self and trainee	"I'm right" or "You're wrong." "I'm setting you straight" "I'm teaching you"	"I'm right" or "You're wrong" but, "I don't want you to get defensive so how do I tell you the bad news and get you to change in a nice way?" "I'm setting you straight" "I'm teaching you"	Respect for self (I have a take on what happened in this simulation that <i>does</i> lead me to think there were some problems but . . .) Respect for trainee (you are also a smart, well-trained practitioner, trying to do the right thing and have your own view on the simulation) so . . . I'm going to approach this as a genuine puzzle; not paralysis or indecision, but holding my own view tentatively. I seek clarity via honest inquiry (we both may learn something or change our minds); "Help me understand why you . . . ?"

Adapted from Table 7.2 in Kegan R, Lahey LL. How The Way We Talk Can Change The Way We Work. San Francisco: Jossey-Bass, 2001.

a critical message while avoiding negative emotions and defensiveness, preserving social “face,” and maintaining trust and psychological safety. Psychological safety is a person’s sense that the immediate environment is safe for interpersonal risk taking; that trying out new ways of talking or acting will not be ridiculed; that mistakes will be worked on together as a source of learning instead of being treated as a crime to be punished or covered up.^{10,23} Instructors using a “nonjudgmental approach” often resolve the dilemma by employing protective social strategies such as sugar-coating errors; the “sandwich” approach in which a compliment is followed by a criticism, which is, in turn, followed by another compliment; filtering out too-critical insights; or by avoiding the problem topic altogether.^{33,34}

Many instructors (ourselves included) have used a Socratic approach in which we ask leading questions and use a kind tone-of-voice to lead the trainee to the critical insight we hold but are reluctant to state explicitly, a process Argyris has termed “easing in.”²³ To our surprise and dismay, we have found that when the instructor holds a critical judgment, open-ended or Socratic questions that camouflage the judgment may backfire when the trainee becomes confused about the nature of the question or suspicious about the instructor’s unexplained motives.

Although the nonjudgmental approach has the advantage of being nonblaming, and therefore avoids some of the hurt and humiliation generated by the judgmental approach, it has serious weaknesses. In spite of a desire to appear nonjudgmental, hints of one’s views often “leak” via subtle cues such as facial expression, tenor, cadence, and body language. Furthermore and most importantly, it is *not* nonjudgmental. Although the surface tone of nonjudgmental debriefing may be softer than the judgmental approach, as we illustrate in Table 1, the underlying assumptions are the same: I’m right; I have the complete picture; my job is to hand-off the correct knowledge or behavior to you, the trainee. Whereas the judgmental approach often humiliates directly, the nonjudgmental approach conveys nonverbally that mistakes are not discussible, or possibly shameful,^{35,36} undermining the very values—mistakes are puzzles to be learned from rather than crimes to be covered up—*instructors aim to endorse with the nonjudgmental approach.*

DEBRIEFING WITH GOOD JUDGMENT APPROACH

We offer a brief rationale of why we arrived at this framework. When our center started 12 years ago we relied on a nonjudgmental approach. To maintain a positive relationship with trainees, we thought it necessary to withhold judgment and use open-ended and leading questions in the hopes that the participants would arrive at the conclusions we were reluctant to say. We began to become uncomfortable with the approach when we realized that we weren’t “walking our talk.” That is, we were saying that mistakes were discussable and a source of learning, yet we found that we tended to cover them up or shy away from discussing them. This conflicted with our commitment and stated mission to make errors discussable and enhance patient safety. We

thought to ourselves, “If we can’t discuss errors here in a simulation center, how can we expect others in the medical world to do it?” We felt that if we were going to advocate for patient safety, then we had to find a way to openly discuss errors—and by the same token, we had to find a way to respectfully insert our clinical and behavioral expertise into our debriefings. We migrated to a position of “debriefing with good judgment,” which allowed us, it seemed, the best of all worlds: it fit with educational theory; it allowed our participants to make mistakes and feel that they were still worthwhile and intelligent; it allowed us to use our clinical and behavioral expertise; and it fostered deep learning among both our participants and instructors.

The “debriefing with good judgment” approach shifts the focus of debriefing in several ways. First, it focuses on creating a context for adult learners (including the instructor) to learn important lessons that will help them move toward key objectives, determined either unilaterally by the instructor or collaboratively with the trainee. Second, the focus widens to include not only the trainees’ actions, but also the meaning-making systems of the trainees such as their frames, assumptions, and knowledge. Third, the instructor’s sense-making system about the simulation also becomes part of the debriefing terrain (Table 1). The instructor has one view of the situation—and it may be an expert view—that is shared as a way to initiate dialogue with the trainee. Instructors’ stating their main concerns in a debriefing is especially important in the domain of healthcare simulation where being indirect about crucial errors can perpetuate medical mistakes and undermine patient safety when the trainee returns to the real clinical environment. In this approach, in contrast to the nonjudgmental approach, the instructor shares critical or appreciative insights about the simulation explicitly. Then these insights are tested and explored with trainees step-by-step as illustrated in the next section and in Table 2.

This “good judgment” approach is one that values the expert opinion of the instructors, while at the same time valuing the unique perspective of the trainees. The idea is to learn what participant frames drive their behaviors so that both their “failures” and successes can be understood as an ingenious, inevitable and logical solution to the problem as perceived within their frames.

Cases where the instructor has significant concerns about the trainee’s clinical judgment or motives—concerns that might merit remedial training, counseling, or discipline—are best treated in a follow up. That is, if the instructor needs to convey that certain clinical approaches or social behaviors will not be tolerated in the program, that important message is a good topic for a postdebriefing conversation.

“TRANSPARENT” TALK IN DEBRIEFING: ENACTING THE GOOD JUDGMENT APPROACH WITH ADVOCACY-INQUIRY

The “debriefing with good judgment” frames outlined in Table 1 are enacted via the style of speaking used by the instructor. Like all frames, mental models, or schemata, the values underlying the “good judgment” approach are invisible; the only way to see them is when they are transformed

TABLE 2. Example of Using Advocacy-Inquiry to Elicit Trainee's Frames

Damon answers:

"Actually yes, I knew what was going on, I had heard the saturation monitor decline earlier and I knew it wasn't going to get better on its own. I didn't care what the actual reading was, which is why I figured I really needed ventilation equipment."

An instructor might say:

"Okay, that seems reasonable. I saw you looking all around the room for equipment, though, and that seemed to prevent you from trying any alternative approaches to oxygenating the patient [advocacy]. Can you help me understand what you were considering at the time? [inquiry]"

When Damon replies:

"Well, since breathing comes before circulation, I needed the manual resuscitator before doing anything else," the instructor is starting to surface the trainee's frame that he can only help a patient breathe if he has a bag-mask apparatus, and a valuable discussion point, linked specifically to the trainee's need, emerges.

The instructor can now pursue such questions as:

Does one always need a bag-mask apparatus to oxygenate a patient?

What other options does one have?

Will apneic oxygenation be sufficient in the short run?

Will chest compressions provide adequate ventilation?

What are the risks and benefits of mouth-to-mouth, mouth-to-mask, mouth-to-tube or other rescue methods?

If one is committed to manual ventilation, how does one manage personnel to get the proper equipment in the room expeditiously?

the question and has a judgment that is lurking in the background. The advocacy-inquiry utterance clearly and directly stated the instructor's perspective and concerns, and set out to understand the meaning-making process that had Damon focused on finding missing equipment.

The advocacy-inquiry version also helps surface Damon's frames. For example, consider the debriefing between Damon and his instructor illustrated in Table 2. This example, taken from one of our actual debriefings, shows how advocacy-inquiry can be used in a simulation debriefing. When said with a true sense of curiosity, paired advocacy and inquiry not only helps trainees like Damon learn from simulations by digging deeper into the frames that drive their actions, but it also helps the instructor learn about the trainees' thought process and provides a lever for deeper teaching. To be clear, this technique isn't about "talking nicely." On the contrary, it places the instructors' thoughts, judgments, and feelings front-and-center. The difference is that by treating the instructor's views as also requiring public testing, the instructor increases mutuality by making himself or herself "vulnerable" to learning and opens their own views to challenge. Additionally, by pairing this advocacy with true inquiry, the instructor increases mutuality by respecting the trainee enough to value the trainee's perspective, and this, in turn, improves learning.

Table 3 provides an example of how to apply the debriefing with good judgment approach. The table shows how the frames-actions-results conceptual model, the instructor's judgments, and advocacy-inquiry fit together to discover the frames that led to a respiratory arrest and chaos in scenario requiring a cardiac resuscitation.

CONCLUSION

The "debriefing with good judgment" approach is designed to increase the chances that the trainee will be able to hear and process what the instructor is saying without being defensive or trying to guess what the instructor's critical judgment is. The "debriefing with good judgment" appellation is not meant to imply that the judgmental or nonjudgmental approach do not have good judgment as their basis. We believe that all three approaches often start with some important evaluative insight held by the instructor. We chose the salutary name, "debriefing with good judgment," to highlight the positive attributes of the approach. These are providing trainees with a clear signal about the instructor's point of view while reducing the potential "noise"—misunderstandings or defensiveness—that too often are associated with the judgmental and nonjudgmental approaches. The judgmental approach poses a substantial risk of embarrassing or humiliating the student and the nonjudgmental approach may send confusing and mixed messages to the learner. Both approaches can obfuscate or reduce the clarity of the instructor's message and the trainee's frames.

The debriefing with good judgment approach has two constraints of which we are aware. The most important is that the model presumes that the trainee is operating with good will and is trying to do the right thing. In those rare cases where the trainee is willfully negligent or malevolent, the

TABLE 3. Example Debriefing Dialogue Using Advocacy Plus Inquiry to Establish Individual then Group Frames

Debriefer	Trainees	Comments
To the group: It looked to me like it was confusing. Did you feel that way?	Group: Several members agree.	Establish a common problem.
To the group: So, from perspective it seemed that confusion may have prevented you from effectively executing respiratory resuscitation and, then, later the ACLS algorithm. How did you all see it?	Group: Yes, the confusion was a problem etc. etc.	Establish clinical consequences. Thus the problem of lack of role clarity is established.
To Diana: Diana, it looked to me like you might have been the leader. Did you feel that was your job?	Diana: Yes, I was the leader sort of, but we never said anything about it. And then later, it seemed that Suresh was more in charge. Diana: Right.	Explore actions that may have led to the resulting confusion.
To Diana: I noticed that too. You looked like you were managing the event, but no one ever said anything.		
To Diana: I was thinking that it would have helped for either you or someone in the group to explicitly state that you were the leader. I am wondering why that didn't happen?	Diana: Well, I wasn't too sure of myself. I mean the other people are pretty much equal to me and I didn't want to seem bossy and unlikable. Also, I was unsure about whether I would do a good job and maybe I would look stupid.	Diana's frame is established.
To the group: Anyone else have a thought?	Eliza: I would have felt much better if I knew Diana was in charge. I certainly didn't want to do it and we needed someone to be in charge. But, I didn't want to put Diana on the spot.	Beginning to understand Eliza's frame.
To the group: In my experience, I have occasionally heard someone running an event like this say, "I'll run this event, but you all have to help me." I am curious what you all would have thought if Diana has said something like that?	Ricardo: I would have been relieved and grateful to Diana. Someone has to run it! I guess I could have just confirmed that Diana was the leader.	Group beginning to reframe.
Turning to Diana: Diana, do you have a thought on this?	Diana: Yes, I can see that is probably a good idea. Then I don't have to look too bossy and I have people on the team who know they have to help me.	Diana moves to a new frame.

The debriefer's goal is that trainees understand the importance of role clarity and establishing an event manager for resuscitations. The example shows how the debriefer: 1) helps to identify an important problem (establishing an event manager); 2) uncovers one student's frame; 3) explores other student's frames; 4) facilitates reframing; and 5) offers a new action to deal more effectively with establishing an event manager in the future.

model is unlikely to work. In those circumstances, other techniques are superior, such as counseling, goal setting, and discipline. Second, instructors may find difficulty with this approach when dealing with trainees who come from cultures in which deferring to authority and elders is of paramount importance and inhibits their disclosing views that may appear to contradict those of the instructor. To support the method in this context, explicit preparation regarding the goals and norms of the simulation environment is required—and sometimes that is not enough.

We conclude with the following insights. In debriefing the heat and drama of a high-fidelity clinical simulation, it is easy to focus primarily on trainees' actions. The debriefing with good judgment approach, however, highlights three additional areas of importance. First, it is vital that instructors ask questions that, like an anthropologist, help bring to the surface and clarify the invisible sense-making process, the cognitive frames and the emotions that governed the trainee's actions. Second, instructors work to become aware of, and explicitly narrate their own invisible judgments and concerns

about crucial elements of the scenario. But instead of treating their own judgments or concerns as the single "truth," they test their views against the trainees' view of the same issue. This does not mean that instructors relinquish their expertise, or "sugar-coat" their judgments; rather, they state their view of the situation and use that as a springboard to legitimize and explore the trainees' view. The reward of this approach is that by understanding how trainee frames, assumptions, and beliefs drive the actions they take, the instructors can match their teaching objectives with problems that are deeply meaningful to the trainee. Finally, the debriefing with good judgment approach helps trainees and instructors learn of unintended consequences of common clinical and social frames and assumptions.

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REFERENCES

1. Darling M, Parry C, Moore J. Learning in the thick of it. Cambridge: Harvard Business Review, 2005.
2. Dismukes RK, Smith GM. Facilitation and debriefing in aviation training and operations. Aldershot, UK: Ashgate, 2001.
3. Hankinson H. The cognitive and affective learning effects of debriefing after a simulation game. School of Education. Indianapolis: Indiana University, 1987:116.
4. Lederman LC. Debriefing: Toward a systematic assessment of theory and practice. *Simulat Gaming* 1992; 23:145–160.
5. Morrison JE, Meliza LL. Foundations of the after action review process. United States Army Research Institute for the Behavioral and Social Science, 1999.
6. Petranek CF, Corey S, Black R. Three levels of learning in simulations: Participating, debriefing, and journal writing. *Simulat Gaming* 1992; 23:186–195.
7. Porter T. Beyond metaphor: Applying a new paradigm of change to experiential debriefing. *J Exp Educ* 1999; 22:85–90.
8. Steinwachs B. How to facilitate a debriefing. *Simulat Gaming* 1992; 23:186–195.
9. Thiagarajan S. Using games for debriefing. *Simulat Gaming* 1992; 23:161–173.
10. Edmondson A. Psychological safety and learning behavior in work teams. *Admin Sci Quart* 1999; 44:350–383.
11. Argyris C, Schön DA. Theory in practice: Increasing professional effectiveness. Jossey-Bass Series in Higher Education. London: Jossey-Bass, 1974.
12. Schön D. The Reflective Practitioner. New York: Basic Books, 1983.
13. Torbert WR. Learning from experience: Toward consciousness. New York: Columbia University Press, 1972.
14. Senge PM. The Fifth Discipline: The Art and Practice of the Learning Organization. New York: Doubleday, 1990.
15. Stone D, Patton B, Heen S. Difficult Conversations. New York: Penguin Books, 1999.
16. Rudolph JW, Taylor SS, Foldy EG. Collaborative off-line reflection: A way to develop skill in action science and action inquiry. In: Handbook of Action Research. Reason P, Bradbury H, eds. Thousand Oaks, CA: Sage, 2001:405–412.
17. Kegan R, Lahey LL. How The Way We Talk Can Change The Way We Work. San Francisco: Jossey-Bass, 2001.
18. Schön D. Educating the reflective practitioner: Toward a new design for teaching and learning in the professions. San Francisco: Jossey-Bass, 1987.
19. Friedman VJ. Action science: Creating communities of inquiry in communities of practice. In: Handbook of Action Research: Participative Inquiry and Practice. Reason P, Bradbury H, eds. London: Sage, 2001: 159–178.
20. Argyris C, Schön DA. Organizational learning: A theory of action perspective. Reading, MA: Addison-Wesley, 1978.
21. Bartunek JM. Changing interpretive schemes and organizational restructuring: The example of a religious order. *Admin Sci Quart* 1984; 29:355–372.
22. Gentrer D, Stevens AL. Mental Models. Hillsdale, NJ: Lawrence Erlbaum Associates, 1983.
23. Argyris C, Putnam R, Smith DM. Action science: Concepts, methods and skills for research and intervention. San Francisco: Jossey-Bass, 1985.
24. Steinbruner JD. The cybernetic theory of decision: New dimensions of political analysis. Princeton, NJ: Princeton University Press, 1974.
25. Watzlawick P, Weakland JH, Fisch R. Change: Principles of problem formation and problem resolution. New York: Norton, 1974.
26. Weick KE. Sensemaking in Organizations. In: Foundations for organizational science. Whetten DA, ed. Thousand Oaks, CA: Sage, 1995.
27. Snook SA. Friendly Fire: The Accidental Shootdown of US Black Hawks Over Northern Iraq. Princeton, NJ: Princeton University Press, 2000.
28. Weick KE, Sutcliffe K, Obstfeld D: Organizing and the process of sensemaking. *Organ Sci* 2006; 16:409–421.
29. Edmondson AE. Learning from mistakes is easier said than done: Group and organizational influences on the detection and correction of human error. *J Appl Behav Sci* 1996; 32:5–28.
30. Scanlon T. What we owe to each other. Cambridge, MA: Belknap Press, 1998.
31. Leape LL. Error in medicine. *JAMA* 1994; 272:1851–1857.
32. Leape LL. The preventability of medical injury. In: Human Error in Medicine. Bogner MS, ed. Hillsdale, NJ: Lawrence Erlbaum Associates, 1994.
33. Weisinger H. The Critical Edge: How to Criticize Up and Down Your Organization and Make it Pay Off. New York: Little Brown and Company, 1989.
34. Weisinger H. The power of positive criticism. New York: AMACOM, 2000.
35. Argyris C. On Organizational Learning. Cambridge, MA: Blackwell, 1994.
36. Argyris C. Knowledge for Action. San Francisco: Jossey-Bass, 1993.