

Learner-Centered Debriefing for Health Care Simulation Education

Lessons for Faculty Development

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Summary Statement: Better debriefing practices may enhance the impact of simulation-based education. Emerging literature suggests that learner-centered debriefing may be effective in helping instructors identify and address learner needs while building learner's engagement and sense of responsibility for learning. This contrasts with instructor-centered approaches to debriefing, where instructors maintain unilateral control over both the process and content of the debriefing, thus limiting input and direction from learners. Although different approaches to debriefing for simulation-based education exist, the simulation literature is largely mute on the topic of learner-centered debriefing. In this article we will (1) compare and contrast learner- versus instructor-centered approaches to teaching; (2) provide a rationale for applying more learner-centered approaches to debriefing; (3) introduce a conceptual framework that highlights the key dimensions of learner- versus instructor-centered debriefing; (4) describe key variables to consider when managing the balance between learner- and instructor-centered debriefing; and (5) describe practical learner-centered strategies for various phases of debriefing.

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Key Words: Debriefing, Learner-centered teaching, Instructor-centered teaching, Simulation, Education.

Health professions educators are integrating simulation-based education (SBE) in many ways, and research demonstrating its effectiveness has supported the widespread implementation of this powerful educational modality.^{1–5} Debriefing, defined here as a “discussion between 2 or more individuals in which aspects of a performance are explored and analyzed with the aim of gaining insights that impact the quality of future clinical practice,”⁶ is a critical component of SBE that provides a venue for learners to reflect on action, discuss areas for improvement, and incorporate new information with previous knowledge.^{6–9} To what extent learners engage in the debriefing depends heavily on how psychologically safe they feel^{10,11} and on instructors' facilitation skills.¹²

The educational literature describes many teaching styles, spanning learner-centered teaching (LCT) at one end and instructor-centered teaching (ICT) on the other end of a continuum.^{13–18} By depicting each approach as an archetype, LCT embodies learning as an active meaning-making process whereby learners and instructors co-construct knowledge, skills, and attitudes collaboratively.^{13,16–18} In contrast, ICT emphasizes efficient information transfer from the instructors to learners, with instructors wielding control over learning environments.^{13,16–18} Although educators often espouse LCT methods, these values, as evidenced in practice, are often more instructor centered.¹³ With good reason, LCT is often more time consuming, requires giving up some control of discussion, and sometimes makes it harder for instructors to achieve closure around objectives.

Recent reviews of the simulation literature highlight the benefits of debriefing,^{2,4,6,19–22} but no work to date in health care simulation explores how LCT might be applied to debriefing. Previous work by Dismukes et al^{23,24} describe the importance of a learner-centered approach in aviation debriefing and highlight how instructors often struggle to lead debriefings in a way that encourages learner self-analysis and discussion. Our work builds on Dismukes' pioneering research in debriefing and seeks to apply these concepts to health care simulation debriefing. The purposes of this article are to describe learner- versus instructor-centered methods of teaching and to highlight strategies for incorporating learner-centered methods into debriefing. By describing these concepts, we hope that instructors will consciously choose how and when to use learner- versus instructor-centered approaches to debriefing and, in turn, have greater awareness of how these decisions impact learning outcomes. The

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article is a critical reflection, review of the literature, and synthesis of discussions held during the State of the Art Faculty Development Symposium at the International Meeting for Simulation in Healthcare in January 2013. In this article we will endeavor to achieve the following:

- Compare and contrast learner- versus instructor-centered approaches to teaching
- Provide a rationale for more learner-centered approaches to debriefing
- Introduce a conceptual framework highlighting key dimensions of learner- versus instructor-centered debriefing
- Describe key variables to consider when managing the balance between learner- and instructor-centered debriefing
- Describe practical learner-centered strategies for various debriefing phases

DEFINING LCT AND ICT

Learner-Centered Teaching

Learner-centered approaches to teaching allow learners to construct knowledge and skills in an environment where both the instructor and students learn together (Fig. 1). In considering the continuum of teaching styles, with LCT and ICT at opposite ends, Weimer¹⁸ describes several key concepts that illustrate the differences between LCT and ICT. In LCT, the role of teachers is to serve as a “guide on the side,” where students do more discovering and learning from and with each other.¹⁸ Instructors “tell” less, with learners actively using material and feedback to achieve learning goals. Next, the balance of power shifts to students, promoting mutual power and collaboration in an environment where students and instructors work together.²⁵ Through greater control over learning experiences, learners are typically more motivated to learn.^{17,18} In learner-centered approaches, the content serves to promote learning to develop knowledge and skills. Because LCT nurtures active meaning makers, learners must process new material and experiences and make sense of how new knowledge and skills apply to their environments.^{25–27} Finally, instructors create learning environments that empower learners to accept more responsibility for learning.^{25,28} By shifting more responsibility for learning to students, instructors help foster autonomy and create independent, self-directed learners.^{13,16–18} In learner-centered debriefings, instructors promote learner

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| • Learner has some choice of topics and objectives | • Instructor decides what objectives to cover |
| • Learner contributes to addressing gaps in knowledge and performance | • Instructor primarily closes gaps in knowledge and performance by teaching |
| • Both instructor and trainees learn together | • Only trainees are viewed as learners |

Learner-Centered Teaching

Basic Premise: Allowing learners to construct knowledge and skills is an ideal method of learning

Instructor-Centered Teaching

Basic Premise: Transmitting information through demonstration is efficient and effective

FIGURE 1. Learner-centered and instructor-centered teaching definitions.

independence and self-directedness by sharing power and promoting mutual collaboration through group reflection and discussion.

Instructor-Centered Teaching

In contrast to LCT, ICT emphasizes teaching activities and deemphasizes learning processes (Fig. 1).^{16–18} Based on the premise that transmitting information is most efficient and effective, ICT evokes the metaphor of teachers as the “sage on the stage,” holders of knowledge who address learning gaps through their teaching. By controlling learning content, the balance of power weighs heavily toward instructors, who decide what to cover, how it is addressed, and how much time to spend on each learning objective. At its most extreme, ICT represents a banking model of education in which instructors “make deposits, and where the students are passive vessels that patiently receive, memorize, and repeat” the information provided to them.²⁹ With ICT, responsibility for learning falls primarily on instructors, while learners engage less in self-assessment, self-regulation, or identification of areas for self-improvement.^{16,17} Lecturing, in its purest form, where instructors deliver information in a one-directional manner to an audience, would be considered heavily instructor centered. In instructor-centered debriefings, instructors focus primarily on content and aim to develop capable, knowledgeable learners who can process and memorize information and are ready to master a set of learning objectives defined by the instructor. Although instructors do not intend to promote dependent, instructor-centered learners, this may be an unintended side effect.

RATIONALE FOR LCT

Educational research supports LCT, which increases student engagement with content, student learning, and long-term retention of knowledge.¹⁷ In a review of research on motivational learning, Pintrich^{30,31} describes that “students who believe they have more personal control of their own learning...are more likely to do well.” One form of LCT, active learning, defined as “a process of having students engage in some activity that forces them to reflect upon ideas and how they are using those ideas,” is an effective educational modality in the learning and cognitive sciences.³² Active learning works because students are empowered to construct meaning by combining what they know with new information.³² When applied at the institutional level in colleges, LCT results in higher rates of student retention and better-prepared graduates compared with those students trained more traditionally.³³

Medical and nursing schools have adapted their curricula by introducing more learner-centered approaches, including problem-based learning and individualized learning opportunities for SBE.^{34–37} A widely used form of LCT, problem-based learning, promotes skill acquisition and retention of acquired knowledge.³³ Recent work provides insight into how specific learner-centered strategies can be applied to SBE.^{38–41} In two separate studies, Boet et al^{38,39} explored the effectiveness of self-debriefing for improving crisis resource management skills and within-team debriefing for improving team performance in simulated crisis scenarios. In both instances, debriefing facilitated by learners themselves was at least as

TABLE 1. A Conceptual Framework for Learner- Versus Instructor-Centered Debriefing for SBE

The Function of Content		
Component	ICT Approaches “Filling up Passive Vessels”	LCT Approaches “Nurturing Active Meaning Makers”
Student engagement in content	Instructor provides facts/knowledge via didactics so that students can take in new material as given to them.	Instructor facilitates discussion and reflective learning on facts and knowledge, allowing students to make their own meaning out of it.
	Instructor coaches learners the skills to help them reach a set standard based on the instructor’s assessment of the learners’ skill (with minimal to no reflection on action).	Learners experiment with alternative approaches to a new skill and self-assessed outcomes.
Use of content to facilitate future learning and application in the real clinical environment	Content is efficiently transferred, understood, and memorized as defined by the instructor. Learners apply knowledge to the real clinical environment guided by instructor-defined opportunities and criteria.	Content is used as an opportunity to codevelop critical thinking skills. Learner’s concerns and goals are used to adapt knowledge to learners’ contexts and the real clinical environment.
The Role of the Instructor		
Component	ICT Approaches “Sage on the Stage”	LCT Approaches “Guide on the Side”
Creation of an environment for learning	Debriefing approach and objectives are set unilaterally within parameters decided by the instructor.	Learning objectives, expectations, and roles are determined collaboratively with learners.
Use of body language and tone of voice	Body language and tone of voice used to keep debriefing on a track set by instructor.	Body language and tone of voice used to adapt debriefing emergently to processes and topics suggested by learners.
Alignment of course objectives with teaching/learning methods	The instructor unilaterally determines the method of debriefing independent of learner’s preferences or learning needs.	The instructor adapts the method of debriefing to fit learner’s needs with respect to different learning objective (eg, directive feedback for procedural skills; inviting reflection for ethical dilemmas).
The Responsibility for Learning		
Component	ICT Approaches “Dependent, Instructor-Directed Learners”	LCT Approaches “Independent, Self-Directed Learners”
Responsibility for learning	Instructor assumes all (or most) of the responsibility for participants’ learning, providing the content in a didactic form or directive feedback to close performance gaps.	Instructor shifts responsibility for learning to students by engaging them in discussion, promoting reflective learning, and allowing them to struggle and figure out how to solve their own problems (whether they get there or not).
Assessment of learner strengths and weaknesses	Instructor assesses learner performance based on subject matter expertise and primarily uses this as the basis for teaching and discussion.	Instructor encourages student self-assessment during the debriefing (eg, plus-delta technique) and uses this as the basis for teaching and discussion (occasionally at the expense of providing directed feedback based on their subject matter expertise.)
Assessment and summary of learning from the simulation plus debriefing.	Instructor summarizes by stating important take-home messages based on his or her expertise and observations during the summary phase of debriefing.	Instructor asks students what they learned and their main take-home messages as part of the summary phase in debriefing.
The Balance of Power		
Component	ICT Approaches “Instructor With Unilateral Power”	LCT Approaches “Mutual Power and Collaboration”
Determination of content (and prioritization of content) for discussion	The instructor predominantly chooses topics and discusses them in an order based on his or her own expertise and assessment of perceived importance.	The instructor predominantly chooses topics and discusses them in an order based on learner’s interests and concerns.

(continued on next page)

TABLE 1. (Continued)

The Balance of Power		
Component	ICT Approaches “Instructor with Unilateral Power”	LCT Approaches “Mutual Power and Collaboration”
Flow of discussion and transitions in discussion points	The instructor unilaterally manages flow and transitions of discussion points based on his or her own experience and priorities.	The instructor collaboratively manages the flow and transitions of discussion points based on learner’s interests and concerns.
Expression of alternate perspectives	The instructor highlights various perspectives based on his or her knowledge and priorities. Student perspectives are not included or are secondary.	The instructor encourages students to express their perspectives on specific issues that arise during the debriefing, occasionally at the expense of sharing their own perspective.
Use of open-ended questions	The instructor closely controls the flow of discussion by using close-ended, yes-no, guess-what-I-am-thinking, or leading questions that direct the learner to topics and answers already held in mind by the instructor.	The instructor loosely controls the flow of discussion or does not control the flow by asking open-ended questions and exploring topics related to the answers.

effective as instructor-led debriefing. The concept of individualized learning in the form of directed self-guidance has been studied in the context of SBE,^{40,41} where “self-guided learning is informed and structured by external influences... (that) shape the educational content and context.”⁴⁰ Self-guided learning in SBE has been effective, provided that trainees progress through training at a pace determined by skills acquisition rather than time.⁴⁰ These studies highlight that learner-centered approaches to SBE empower learners to identify their learning needs and discover how new knowledge can be applied in the future.

A CONCEPTUAL FRAMEWORK FOR LEARNER- VERSUS INSTRUCTOR-CENTERED DEBRIEFING

To support educators in managing the balance between LCT and ICT approaches to debriefing, we offer a conceptual framework for learner- versus instructor-centered debriefing using Weimer’s key concepts for LCT,¹⁸ namely, the function of content, the role of instructors, the responsibility for learning, and the balance of power. Table 1 presents the conceptual framework and describes the two ends of the continuum of learner- versus instructor-centered debriefing as applied to the key components of each concept.⁴² We recognize the importance of the other aspects of SBE (eg, curriculum design, simulation event development and evaluation) to an LCT approach, but full discussion of these aspects is beyond the scope of this article.

KEY VARIABLES TO CONSIDER WHEN BALANCING LEARNER- AND INSTRUCTOR-CENTERED DEBRIEFING

Although we present learner- and instructor-centered debriefing as opposite ends of a continuum, we recognize the need for the instructor to actively manage the balance in an effort to best meet learner needs. Although some debriefings warrant more instructor-centered approaches, we encourage instructors to integrate aspects of LCT into all debriefings. We suggest several key variables to consider, individually and collectively, when managing the delicate balance between learner- and instructor-centered approaches to debriefing: (a)

the amount of time available⁴³; (b) the knowledge and experience of learners⁴³; and (c) national culture.⁴⁴ Table 2 describes how each of these variables relates to learner- and instructor-centered debriefing as well as provides supportive rationale and an illustrative example to highlight how modifications of the variable may influence the balance between learner- and instructor-centered debriefing.

PREPARING FOR DEBRIEFING WITH EFFECTIVE PREBRIEFING

Engagement in prebriefings or briefings provides opportunity for learners to familiarize themselves with the environment and equipment and prepares learners to regulate their own learning.⁴⁵ Instructors can prompt learners during the prebriefing to stimulate “reflection-before-action,”⁴⁶ clarify roles, and identify their learning needs.¹¹ Establishing ground rules for simulation with a basic assumption, that everyone participating in simulation is “intelligent, capable and is trying to do their best to learn and improve” helps create an environment conducive to LCT.⁴⁷ Furthermore, research shows that task interpretation (ie, Why am I here? What is the purpose?) is a vital skill for learners because it informs how they plan, which strategies they implement, and which criteria for success they select.⁴⁸

IMPLEMENTING LEARNER-CENTERED DEBRIEFING

The facilitator’s overall demeanor factors importantly in students’ debriefing experience.⁴⁹ Open body language, an interested and receptive tone of voice, and active listening engage learners and set the stage for a collaborative, learner-centered debriefing experience.⁴⁶ Similarly, nonverbal gestures and facial expressions that demonstrate interest to learners help promote discussion and reflective learning.

Many different debriefing methods promote reflective learning,^{6,7,43,49} including Debriefing for Meaningful Learning²²; TeamGAINS⁵⁰; GAS (ie, Gather, Analyze and Summarize)¹⁹; Alternatives, Pros and Cons⁵¹; and Debriefing with Good Judgment^{27,52} to name a few. Regardless of the particular debriefing method used, several generalizable strategies can be used to promote learner centeredness. We describe these

TABLE 2. Key Variables to Consider When Managing the Balance Between Learner- and Instructor-Centered Debriefing

Variable	Instructor-Centered Debriefing	Learner-Centered Debriefing
Time ⁴¹	Short	Moderate/Long
Rationale	When there is less time available, the instructor must work efficiently to address performance gaps directly.	When there is more time available, the instructor engages learners in reflection and discussion.
Example	Near the end of a debriefing, the instructor realizes three objectives remain with only a few minutes left. As a result, he or she quickly teaches in a didactic manner to address the remaining learning objectives.	An instructor has 45 min to debrief a team that has just managed a complicated trauma patient. He or she uses a debriefing method that engages learners in reflection to identify and address issues on the learner agenda through group discussion.
Knowledge and experience of learners ⁴¹	Little relevant background knowledge and/or clinical experience	Moderate or high degree of relevant background knowledge and/or clinical experience
Rationale	Learners lacking knowledge and/or relevant clinical experience are unlikely to engage in discussion that leads to meaningful learning. Consequently, the instructor should provide information to ensure that learning occurs.	The learners have sufficient knowledge and/or clinical experience to engage in discussion that will result in meaningful learning.
Example	Medical and nursing students with no previous clinical experience are being debriefed after participating in the management of an adult with cardiac arrest. The instructor decides to review the guidelines for cardiac arrest in a didactic fashion since he or she knows none of the students has taken the Advanced Cardiac Life Support course.	An experienced interprofessional team from the emergency department is being debriefed after participating in the management of an adult with cardiac arrest. The instructor allows the team to self-identify areas for improvement and, through group discussion, formulate solutions to address these issues in the future.
National culture ⁴²	Cultures that have considerable dependence of subordinates on superiors (high power distance) and have a need to resolve ambiguity quickly and leave as little as possible to chance (high uncertainty avoidance). ⁴²	Cultures that have a limited dependence of subordinates on superiors (low power distance) and are not so driven and tend to be more relaxed in their work (low uncertainty avoidance). ⁴²
Rationale	Cultures with a high power distance and uncertainty avoidance results in a debriefing environment whereby instructors are revered and learners are passive and/or submissive.	Cultures with a low power distance and low uncertainty avoidance create a debriefing environment where learners feel safe to contribute to discussion, as both learners and instructors are recognized as potential contributors to learning.
Example	In some Asian countries, instructors end up predominantly teaching during debriefing as learners are, for the most part, quiet and are hesitant to participate in the discussion.	Many simulation programs in North America are moving toward learner-centered debriefing where the learners are viewed as vital contributors to the learning process.

strategies in the context of the various phases of debriefing: the reactions phase, the analysis phase, and the summary phase, recognizing that there may be variation in how these phases are named, depending on the method of debriefing used by the instructor.^{10,43,53}

Reactions Phase

The reactions phase of the debriefing allows instructors to identify issues most important to the learners (ie, the *learner agenda*). When learners are invited to describe their immediate reactions to the simulation exercise, they may share frank emotions (ie, anger, frustration) or immediately start discussing interactions, behaviors, or issues arising from the simulation. This provides an opportunity for instructors to unearth the learner agenda. By taking time to identify personal interests of each learner, the instructor contributes positively to a dynamic of mutual power and collaboration, whereby learners

help determine the content for discussion.⁴² When instructors verbally acknowledge topics on the learner agenda, this validates these learning needs and further empowers learners to take responsibility for their own learning. If time is short, instructors should be up front and articulate that some topics may not be covered during the debriefing. Finally, by summarizing the learner agenda before transitioning to the analysis phase, instructors assure learners that these topics will be explored, thus further engaging the learners in preparation for reflective learning. Table 3 highlights learner-centered, instructor-centered, and blended approaches as they are applied to the various phases of debriefing.

Analysis Phase

According to Weimer's key premises of LCT, reframing the instructor role from sole leader to "fellow traveler" in the

TABLE 3. LCT and ICT as Applied to the Phases of Debriefing

Phase of Debriefing	Debriefing Task	Instructor-Centered Debriefing Approach	Balanced Approach (Incorporating Aspects of Both LCT and ICT)	Learner-Centered Debriefing Approach
Reactions phase	Identifying the learner agenda	The learners are not given sufficient opportunity to fully share their initial thoughts or emotions. As a result, response from the learners is minimal, and the instructor is unaware of the learner agenda. Even when topics on the learner agenda are shared, the instructor does not provide acknowledgment or validation of the learner agenda.	The instructor provides opportunity for some, but not all, learners to share their initial thoughts and/or emotions. As a result, the instructor is only partially aware of the entire learner agenda. The instructor acknowledges or validates the learner agenda that is uncovered.	The learners are provided ample opportunity for all learners to share their emotions and initial reactions to the simulated event. As a result, the instructor is able to identify the learner agenda. The instructor verbally acknowledges the learner agenda as topics arise and validates the learner agenda by summarizing what he or she has heard from the learners before proceeding to the analysis phase.
Analysis phase	Prioritizing content for discussion	The instructor leads off and prioritizes topics that are important to him or her, without consideration of the learners desire to explore or discuss specific topics. There is no negotiation of including learner agenda items or objectives that are different from those that were initially planned. The instructor unilaterally guides the debriefing agenda.	The instructor discusses the items on the learner agenda first and then moves to discussing topics that are important to him or her. The instructor does not discuss items brought up by learners beyond those that were initially brought up during the reactions phase.	The instructor discusses the objectives that they want to explore in debriefing (ie, learner agenda), invites the learners to add any additional items and then assists in prioritizing the discussion within the time constraints of the debriefing. The instructor may decide to discuss items on the common agenda first, to ensure that both the learner's needs and predefined learning objectives are discussed.
	Promoting learner self-assessment	The instructor does not focus on learner's self-assessment but rather guides the debriefing by their assessment of the performance.	The instructor engages learners in a self-assessment exercise but interjects with his or her own assessment part way through. As a result, learners are not provided opportunity to complete the self-assessment exercise.	The instructor engages the learners in a self-assessment exercise (eg, plus-delta) as a means to actively identify learning needs.
	Exploring rationale for behaviors	The focus of the debriefing is to correct the "errors" the instructor noted during the simulation. The only focus is what went well and what went wrong. The instructor presents his or her view and a rationale for why the learner needs to change his or her perspective.	The instructor takes the time to explore the learner's rationale for certain selected behaviors. For other behaviors, the instructor presents his or her view only and a rationale for why the learner needs to change his or her perspective.	The instructor explicitly describes the process as a time for the learners to explore their thinking and learn from each other. Throughout the discussion, other points of view are solicited from the learners, and the instructor strives to balance closure of knowledge gaps with a didactic approach and exploring the learner's perspective.
	Closing performance gaps	The instructor uses a didactic style that involves primarily directive feedback. He or she does not adapt the style despite a willingness among the learners to participate in discussion.	The instructor selectively uses directive feedback to close performance gaps for some behaviors, whereas for other actions, he or she allows the learners to close performance gaps through group reflection and discussion.	The instructor facilitates discussion to understand the rationale behind specific actions and allows the learners to close performance gaps through group reflection and discussion.

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TABLE 3. (Continued)

Phase of Debriefing	Debriefing Task	Instructor-Centered Debriefing Approach	Balanced Approach (Incorporating Aspects of Both LCT and ICT)	Learner-Centered Debriefing Approach
Analysis Phase	Managing transitions	The instructor can somewhat abruptly change topics based on their schedule of the agenda. The instructor does not solicit learner input before transitioning to the next topic.	In the first half the debriefing, the instructor engages learners to ensure there are no further comments, questions, or clarifications required before transitioning to the next topic. In the second half of the debriefing, the instructor does not solicit learner input before transitioning to the next topic.	The instructor engages learners to ensure there are no further comments, questions, or clarifications required before transitioning to the next topic. If the learners are not ready to move on, the instructor is able and willing to continue discussing what is important to the learners.
	Managing time	Instructors assign more time and priority to topics on their own personal agenda or choose to address their own personal agenda first. Insufficient time is allocated to address items on the learner agenda.	The instructor allocates equal time to address issues on the learner agenda and the instructor agenda, recognizing that this may mean some items on both agenda may not be covered.	Instructors dedicate ample time to address the learner agenda and hold their own agenda loosely.
Summary phase	Identifying key take-home messages	The instructor wraps up with their own assessment of what was learned and how learners should use that information.	The instructor provides learners with an opportunity to express their own take-home messages but also includes his or her assessment of what the learners should have learned.	The instructor provides learners the opportunity to express their main take-home message(s) from the experience. The instructor is also thoughtful in his or her approach to debriefing to leave enough time to not rush this phase of debriefing.

quest for knowledge is an important paradigm shift.¹⁸ In attempting to make this shift, instructors may grapple with the dynamic tension between learner and instructor agendas when addressing performance issues during the analysis phase of debriefing. This tension relates to several key debriefing challenges that instructors face during the analysis phase, namely, prioritizing content, promoting learner self-assessment, exploring rationale for behaviors and closing performance gaps, transitioning smoothly, and managing time. Here, we discuss how each of these elements can be managed to promote LCT.

Prioritizing Content for Discussion

Once the learner agenda surfaces during the debriefing, instructors assess which items are common to both the learner and instructor (ie, the *common agenda*). Discussing topics on the common agenda first enhances learner centeredness by promoting mutual power and collaboration.⁴² For example, during the reactions phase in a debriefing of a case designed to illustrate crisis resource management principles, several learners may comment on the team's lack of situational awareness. The instructor may highlight this issue by stating: "I'm hearing several of you share your thoughts on the importance of situational awareness... I was thinking the same thing... I was wondering if we could discuss this further." By explicitly sharing this thought process, the instructor confirms his or her alignment with the learner agenda and, in turn, helps build trust among the learners, which supports a learner-centered environment.

Instructors may find that certain items on the learner and/or common agenda do not match predefined learning objectives or, more importantly, items that are critically important to patient care (ie, patient-centered debriefing⁵⁴). In this event, instructors face choices that involve tradeoffs. For example, by covering an important topic not on the learner agenda, the debriefing becomes less learner centered, or instructors may only address the learner agenda at the expense of discussing topics critically important to patient outcomes. Instructors should carefully prioritize topics and manage their time while balancing learner- versus instructor-centered methods of teaching, which ensures sufficient opportunity to address critical issues for improving patient care.

Promoting Learner Self-Assessment

During the analysis phase, a learner self-assessment strategy such as plus-delta can be a powerful tool.^{6,7,43} To promote self-assessment, instructors invite learners to describe what they think they did well and what they could improve on when faced with a similar situation next time.^{7,43} In doing so, instructors empower learners to reflect on and assess their performance, share their personal agenda, and help them to address their own learning needs. By engaging learners in active reflection and self-assessment, instructors help learners assume greater responsibility for learning.⁴² Once learners identify their own performance gaps, instructors can select items for more discussion to explore the rationale for those behaviors.⁴³

Exploring Rationale for Behaviors and Closing Performance Gaps

In learner-centered approaches to debriefing specific performance gaps, instructors engage learners in a process of mutual self-discovery to uncover the underlying rationale driving certain behaviors.^{27,43} Exploring underlying thought

processes allows learners to express various points of view, while at the same time, nurturing active meaning makers as they work to collectively identify solutions to their problems.^{27,52} Once the underlying rationale surfaces, which may clarify the behavior or provide direction on how to improve it, it can be addressed in either an instructor-centered (eg, directive feedback or teaching) or learner-centered manner, depending on the learner's need.⁴³ By allowing learners to formulate solutions, facilitators shift the power and responsibility for learning to the learners. Practically, debriefers can facilitate a discussion about the alternatives and their pros and cons related to clinical decision making during the case.⁵² Furthermore, making time to identify and correct the underlying rationale (when appropriate) also allows instructors and learners to discuss how new perspectives promote future application in real-world environments.^{27,43,52}

Managing Transitions

Instructors should attend to transitions from one topic to another during the debriefing. Abrupt, absent, or ineffective transitions risk leaving learners feeling confused and undervalued. Sometimes, transitions occur before performance deficits are fully addressed, while other times, transitions occur before learners have shared their valuable thoughts. To manage transitions in a learner-centered manner, the instructor can (a) check in with learners before transitioning, asking learners if there are further questions or clarifications before switching topics, thus engaging learners in the content and allowing them to contribute to the choice to move on; (b) briefly summarize the previous discussion before asking learners if they are ready to switch topics to transition deliberately and make learners aware of how the discussion will flow; or (c) verbally preview the next topic of discussion—by doing so, the instructor makes the transition explicit and allows learners to prepare mentally for the discussion of a new topic, thus encouraging learners' engagement.

Managing Time

Time management is a critical component of debriefing. Instructors who focus on their personal agenda first risk not saving enough time to address the learner agenda. By taking time to elicit learners' values and points of view or engaging them in problem solving, debriefings may seem slower, while promoting learning outcomes more aligned with the learners' needs. Although we recognize that directive feedback has its place in addressing certain learning needs, we encourage instructors to dedicate ample time to tackle the learner agenda while at the same time holding their own agenda loosely.⁴³ By doing so, instructor assign priority to the learner agenda, which may augment learner engagement in the debriefing. For instructors whose agenda are set by curriculum committees or other accrediting authorities, balancing the learner agenda with the preset curriculum poses challenges. Taking a long-term approach of examining and collecting learners' interests and preplanning how to balance emergent topics with required ones may be useful.

Summary Phase

At the end of the debriefing, a summary phase is powerful for identifying what has been learned. A learner-centered approach to summarizing involves asking learners what their

key take-home messages were from the simulation and debriefing.⁴³ Doing so allows instructors to assess whether the debriefing met predefined learning objectives of the session, but instructors must allocate enough time at the end of the debriefing to engage learners in a summary. Engaging students in a self-assessment of their learning helps promote independent, self-directed learners who embrace the responsibility for their own learning.

FUTURE DIRECTIONS

We have outlined LCT and ICT approaches and discussed how simulation instructors can implement strategies to enhance learner centeredness during debriefings. Moving forward, we encourage instructors to reflect on their own debriefing style and try out these concepts and strategies for learner-centered debriefings. Theoretical and empirical work is needed to ascertain how to optimize the balance of LCT and ICT given time constraints, cultural differences, and learner background to improve provider knowledge, skills, attitudes, and patient care outcomes. Future research should explore the relative benefits of LCT and ICT as they are applied to debriefing and identify the strategies best suited to promote effective learning.

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