Debriefing: A Practical Guide

6

David Crookall

Dedication
This chapter is dedicated to a dear friend, the late Dr. Ajarn Songsri Soranastaporn. Ajarn Songsri was the initiator (with me) and Secretary General of ThaiSim, the Thailand Simulation and Gaming Association. For over 10 years, she and her colleagues organized the International ThaiSim Conferences (including an ISAGA conference), probably the most wonderful and memorable simulation/gaming meetings anywhere in the world. She helped with the journal *S&G*, was a major force in Thailand for educational simulation and applied linguistics and was dearly loved by all her colleagues and students. In true Buddhist tradition, she gave so much and asked for so little. We might feel closer to Ajarn Songsri and understand her passing better by reading Upasen and Thanasilp (2020).

Simulation without including adequate debriefing is ineffective and even unethical. (Willy Kriz, 2008)

The debriefing is where the 'magic' happens. (Dick Duke, 2011)

Overview

Debriefing is the most important part of a simulation. That is why this is a key chapter in this book. The chapter contains several sections, each one offering insights, guidance and stories for debriefers. The central sections of this chapter look at various aspects of debriefing, such as what it is and when, why and how we should conduct it. Each section looks at debriefing, not so much from a theoretical stance, but more from a practical, down-to-earth perspective. The appendix contains a number of ready-to-use examples of materials to use for

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M. L. Angelini and R. Muñiz (eds.), *Simulation for Participatory Education*,
Springer Texts in Education, https://doi.org/10.1007/978-3-031-21011-2_6

debriefing and also suggestions of courses or curriculums that use larger simulation and thus that must employ and deploy debriefing in a judiciously managed fashion. Having developed and conducted debriefs and trained trainers in debriefing for many years, I have written this chapter from a personal angle, sometimes offering short vignettes or stories of my own experience.

Keywords

Simulation · Experiential learning · Debriefing · Reflection · Sharing

Learning Objectives

By the end of this chapter, readers should be able to:

- grasp the broad **notion** of debriefing, and its importance in the simulation endeavour;
- understand (a) that **simulation objective**s are different from **learning goals**, (b) that simulation is about **experience** and (c) that debriefing is about **learning** from that experience;
- understand the **complex** nature of debriefing—its design and implementation;
- understand that debriefing can **vary** widely in its format, its structure and its modus operandi;
- **configure** debriefing sequences and integrate them into a simulation, **during** and/or **after** the simulation;
- **adapt** debriefing forms (such as those in the Appendix) for their own games and learning objectives:
- **design** debriefing materials for their own specific learning objectives;
- think about debriefing as **belonging to participants** and realize that facilitators need to get out of the way of their learners' learning;
- be (more) **flexible** in their debriefing facilitation and be willing to **change** strategy as the simulation or debriefing evolves;
- understand clearly that the **learning starts when the game stops**;
- understand some of the many **aspects** of how to run a debriefing;
- be more **confident** as a debriefer.

This chapter cannot, however, teach you the hands-on skills of facilitating debriefing. The only way that you will learn to facilitate a debrief is to do it yourself, make mistakes, get feedback, reflect and implement corrections—in cyclical fashion, somewhat as in the experiential learning cycle itself.

Preamble

Meaning. Debriefing can be described as an episode during a simulation in which participants reflect on and share their experience with fellow participants, with the

purpose of transforming it into learning. That is one way of describing the essence of debriefing. Many other descriptions of the term and action of debriefing have been offered by practitioners and theorists. This chapter does not attempt to review the many definitions of and publications on debriefing. Readers who wish to pursue a more academic route to working with or understanding debriefing should look at some of the references at the end of this chapter.

Practice. The only sure and convincing way to understand and learn debriefing is to practice it (as a facilitator–debriefer) or experience it (as a participant). In the same way that a book cannot substitute for the experience of a simulation, a chapter cannot make anyone a master debriefer—only practice, training, debriefing (of your debriefing) and more practice can do that. You cannot learn to ride a bicycle from a book or lecture; you have to get on and fall off several times, and then continue to practice. Recently, tools have been developed to help improve debriefing skills (see, e.g., Coggins et al., 2022).

Guidance. This chapter, then, can only provide guidance; it is you, dear reader, who must practice and learn. This chapter will provide ideas, leads, food for thought and concrete, ready-to-use examples of materials for debriefing; you have to go out, jump in, get debriefed on your debriefing, adapt ideas here in this chapter, consider other practitioner's ideas and be sensitive to your participants' feedback. Every practitioner follows their own path; my path has been long and winding, and I am unlikely ever to reach the end. Luckily, I have had friends, colleagues and debrief participants to suggest, guide and criticize along the way. I hope that this chapter will be a useful companion for you.

Event. As you read through the chapter, you will encounter a variety of terms for the kinds of things that are, and often must be, debriefed; they include simulation, game, exercise, experience, role-play and event. I like the term ***event***. Many years ago, my friend and talented game designer, Ken Jones (1998), used the term *event* to refer to a game or simulation and other similar types of …, well, event. At first, I felt uneasy with the term, but over recent years I found myself being drawn "back?" to the term. Ken used the word in the title of one of his books: *Interactive Learning Events*. One great advantage of this term is that it avoids the tendency for some to write nonsense like "a simulation is a game that …" or "a game is a simulation in which …".

In addition, we all know (or at least should know) that we tend to vary the use of our terms as a function of the character of our interlocutor, not the characteristics of the event itself (the social psychology of language also tells us that, see Giles, n.d.). For example, with an audience sceptical about games, I use the word simulation or activity (even though I know that they are, technically, different things). To distinguish debriefing from event, I will use the term *episode*, for example, a debriefing or reflecting or taking stock episode during a simulation event. You will also notice that I sometimes use the terms game and simulation interchangeably, in similar vein to the early gamers, who used the term game as shorthand for

simulation/game. Many books and articles offer their varied definitions of the terms used. My own attempt, which needs some major revision at some point, is to be found in one of my early articles (Crookall et al., 1987).

Rules. One thing that you should keep in mind is avoiding dogma of any kind, either in what some people say or even in your own thinking—and that includes my own dogma in this chapter! Learning and people are so complex and varied that it is impossible, in our current state of unknowledge, to lay down the "law of debriefing", except maybe to say that it really is a **required** episode in almost all experiential learning activities, including games and simulations. In other words, the first, but crucial, rule about debriefing is that it must be done. The second rule is that you must do it well, both for your own professional satisfaction and for the well-being and learning of your participants.

A third rule might be: Use your own ideas; take advice, but adapt to your participants and their learning; experiment with a variety of formats, configurations and materials; invite your debrief participants to help by asking them about the debrief; conduct action research on your debriefings; never mind what others (especially fellow teachers) might mutter, do your thing; be proud (in yourself or even brag if that is your personality) when you feel that a debrief has gone particularly well, but remember that the people doing and making the big effort in the debrief are your participants, you are a facilitator.

The rest of this chapter provides some down-to-earth thoughts on the debriefing episode from several angles. The chapter is organized according to several wh-words, starting with ***What*** and ending with ***How***.

6.1 What—Object/Idea/Process

Many authors start their text with a definition. Just as with the all-too-many and confusing definitions of terms like *game* and *simulation*, the word *debriefing* has been defined in a myriad ways, and each time in a manner that gives the impression that its author considers it to be definitive, and that no more thought or discussion is possible.

The important thing is to do debriefing well, not to worry about how it may be variously defined. For the purpose of this chapter, in a book on simulation, the simple description offered at the start will suffice:

> Debriefing can be described as an episode during a simulation and in which participants reflect on and share their experience with fellow participants, with the purpose of transforming it into learning.

That description (not a definition) has the advantage of saying what it is (an episode or activity in a simulation or similar learning event), who does it (participants), the manner of their participation (refection and sharing), the object of their reflection

(their experience), why they do it (to learn) and how it happens (through transformation). Debriefing occurs widely outside simulation, and this will be mentioned as it is relevant for our learning-focused debriefing, but for present purposes, our main concern is its use in simulation/games for learning.

Some readers may twitch at seeing the preposition *during* in the phrase "episode **during** a simulation". My approach is that debriefing should form an integral part of a simulation, starting with design. Debriefing should also be mentioned in the introduction (briefing) for a simulation. It is usually a mistake to design a simulation, and then as an after-thought to say "oh, well, maybe we should add on something for a debriefing". That approach is likely to take you into territory so well highlighted by my friend Willy Kriz (2008) in his statement that "simulation without including adequate debriefing is ineffective and even unethical". In addition, thinking of debriefing as being *included in*, as an integral part of, a simulation makes it easier to think about including debriefs at strategic points during the simulation, and not exclusively placed at the end; this is discussed in the section *When*.

Different people and professions use different terms for essentially the same thing. Table 6.1 lists some that I have seen or heard; no doubt others exist.

Of course, just like game and simulation, the terms related to debriefing have a variety of meanings, each one conceptualized for a given purpose, and, thus, resulting in a variety of designations. For example, the US Army uses *after action review*, but the UK Army uses the term *debrief*. This chapter uses a single term to embrace the existing variety. The term *critical incident stress debriefing* (CISD) is used in specific circumstances after a disaster such as an earthquake or an accident. It usually needs special training. It will not be discussed in this chapter, although it may be that some elements here could be useful in CISD, and some aspects of CISD can be useful in debriefing for learning.

Table 6.1 A variety of terms used for debriefing

• After action review (AAR)*	• Feedback
• After-game discussion	• Game critique
• Assessment	• Gather intelligence
• Cognitive assimilation of experience	• Guided reflection
• Critical incident stress debriefing (CISD)	• Historical group debriefing
	• Interactive, bidirectional and reflective discussion
• Critical analysis	• Pause and learn
• Critical appraisal	• Post-experience analytic process
• Critical reflection	• Post-game analysis
• Debriefing	• Process debriefing
• Deliberate reflection on experience	• Processing experience
• Exit interview	• Psychological debriefing
• Facilitated reflective conversation	• Reflection
• Facilitator-guided post-event debriefing	• Transforming experience

* "A professional discussion of an event, focused on performance standards, that enables soldiers to discover for themselves what happened, why it happened, and how to sustain strengths and improve on weaknesses." (US Army)

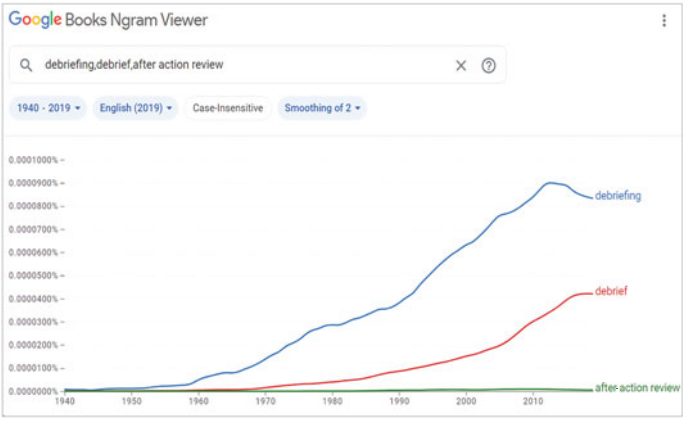


Fig. 6.1 Evolution of the use of the terms debrief, debriefing and AAR from 1940 to 2019 (blue "debriefing", red "debrief", green "after action review")

Debriefing is more widespread, more commonly used and more talked and written about now than when I started to use it—in the late 1970s. This is reflected in the increasing usage over time, depicted in Fig. 6.1.

The origins of the word *debrief* go back a long way, as hinted at in Fig. 6.1. Etymonline offers these origins (edited):

> **Debrief** (v) "obtain information (from someone) at the end of a mission" 1945 (implied in verbal noun de-briefing), from de-+brief (v).
>
> **De** Latin adverb and preposition of separation in space, meaning "down from, off, away from", and figuratively "concerning, by reason of, according to".
>
> **Brief** (v) "to give instructions or information to", 1866; originally "to instruct by a brief" (1862), from
>
> **Brief** (n) early 14c., *bref*, "a writing issued by authority" from Latin *breve*, noun derivative of adjective *brevis* "short, little", which came to mean "letter, summary" and thus came to mean "letter of authority", which yielded the modern, legal sense of "systematic summary of the facts of a case" (1630s). Sense of "a short or concise writing" is from 1560s.

6.2 Whether or Not

However, despite the increasing use of the term in publication, we should not cry victory too soon for the use of the method in action. I have unfortunately come across far too many instances and examples where debriefing was not used when it should have been. In a chapter on debriefing, it is worth mentioning a few of these omissions, keeping in mind Willy Kriz's ethical imperative. I still find myself

in situations where debriefing is ignored, unheard of or even frowned upon. See examples in Box 1.

During my term as editor of *Simulation & Gaming* (Sage), I wrote into the author guide an extensive section on debriefing. It included this instruction:

> Articles that deal with issues, events or topics in which debriefing plays or should play a role **must** discuss this aspect fully.

Even with this in the author guide, I received manuscripts that made no mention of debriefing when it was clear that this should have at least been mentioned. In one instance, the author asked me what it was. After explaining it, with a few references, the author said that they would have to redo their work to include debriefing. A few months later, I received the revised manuscript, which now included debriefing, and this had actually changed their results. The author conveyed their satisfaction with the changes that they had made, both in their practice and in their article. Even now, I come across articles or books about games or simulations and find myself muttering to myself: Why on earth did they not discuss, let alone mention, debriefing? A key test to know whether I should spend time reading an article or book on simulation/gaming (for learning) is whether it contains some mention of debriefing. If it does not, then I tend to discard the publication.

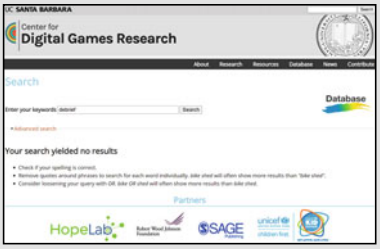
The assumption in the above-mentioned author guide was that debriefing must be the **default**. You only leave out debriefing if you have a compelling reason to omit it. You can dispense with debriefing only if you are absolutely sure that no ethical issues may be raised as a result, or if the simulation/game itself is used as a debriefing method.

Box 1. Two examples of inexistent debriefing

Some years ago, I was asked to speak at a newly-formed, innovative conference series called SEGAMED (Serious Games in Medicine and Healthcare), founded by my friend Pascal Staccini of the Université Côte d'Azur. For my presentation, I gave an overview of debriefing and emphasized its importance. For that, I looked at medical organizations doing simulation.

During my research for the talk, and to my amazement, I discovered that only some were doing this. Most medical simulation centres (such as those attached to training hospitals) emphasized and conducted debriefing. However, other organizations, mostly medical game companies, made no mention at all of debriefing. During the early conferences, I asked game company representatives at their stands what kind of debriefing they had built into their game designs. Some said that it was not needed; some had not even heard of it—I kid you not. During my online searches, I even came across a searchable database portal for health games. The image here (with the happy looking man) shows "no results" for a search on the term *debrief*.

While writing this chapter, I searched for that website, but it does not seem to exist anymore. However, I found another searchable games website, called "Digital Games Research". The search term *debrief* returned "no results", despite seeming to be sponsored by Sage, publisher of the world's top simulation journal, and in which several articles on debriefing have appeared.



Most entertainment games are not explicitly debriefed, although people may talk informally about their event for some while, even weeks, after. If you play *Rummy* with your family, it is unlikely to be the object of heated debate, rather it is likely to be forgotten fairly fast. If you are an avid *Chess* player, then you could spend hours and days going back over and analysing your moves.

Some games can be used as a debriefing method. My friend, Thiagi (Thiagarajan, 1992), wrote a delightful article that contained instructions for running a variety of what he calls D-Games. I have used some with great success. Indeed, I have used some to debrief, not just a game, but a whole several-day event, such as a conference. It is important to weigh carefully the pros and cons of using a fun-game activity to debrief an event. If a mismatch occurs between the event (emotional, heavy) and its D-Game (light-hearted), it could have the opposite effect of what you and the participants expect.

An example of another type of event that *might* not need debriefing is Companion Modelling (or ComMod, e.g., Étienne, 2014). Some ComMod events, even though they involve role-play as part of their procedure, could be conceptualized, not so much as large-scale simulations needing a debrief, but rather as large-scale debriefs of a real situation, such as conflict between two communities over natural resources. This is not such a wild idea if you remember Thiagi's D-games. Much will depend on the configuration and context of the ComMod event.

What debriefing is, discussed above, and the simple fact that it is being used more widely than ever take us to the next topic of *Why*.

6.3 Why—Reason, Purpose

This section looks at the broad reasons for, purposes behind or uses of debriefing. They include learning, peace and conflict, assessing problems, processing experience, reducing stress, for ethical reasons, as part of research and several more. The overarching purpose for debriefing for most readers of this chapter will be to help people learn from their experience in an event. The learning process usually involves some degree of stress—after all, little learning takes place if no effort is expended and no optimal stress is experienced.

Before reviewing the main *Whys* of debriefing, it is worth looking at some of the wrong assumptions that are too often expressed about simulations or games. If we have erroneous ideas, or entertain myths, about simulation, then we are unlikely to be able to get our debriefing right.

6.3.1 Myths

Unfortunately, in recent years, some unhelpful myths about learning and games seem to have spread unchecked. Some lay and even some professional game users appear to assume that a game automatically results in people learning, despite little or nothing being specified about that learning, such as its goals or processes. You may encounter people with little experience in using learning games or people who have recently discovered games in education or heard of what are called "serious" games. Such people may have become blindly enamoured of them, and made an enthusiastic, snap judgement about how "powerful" they are and even that they can teach anyone anything. That would qualify as a crush on games. One example, among many, is a fairly large website that touts that

> Games for Change … empowers game creators and social innovators to drive real-world impact through games and immersive media. (https://www.gamesforchange.org)

This is a worthy mission, but I could not find the word *debrief* on any of its pages. I did find it twice, mentioned in passing, with no discussion, in a downloadable 45-page pdf file (titled *XR for social impact*). Another anonymous and undated, 52-page pdf file, entitled *Games pack: Games and learning*, downloadable from that website, tells us about the magic power of games, in these terms:

> Games drop students into accessible, inquiry-based, complex problem spaces that are levelled to deliver just-in-time learning and that use data to help student players understand how they are doing, what they need to work on, and where they need to go next.

and yet, the word debrief is not mentioned once. The idea of "dropping students into spaces" is, I would think, hardly conducive to learning! Also, the concept of "just-in-time learning" is not made clear and is certainly not an automatic outcome of games. It very much depends on how the game is designed, and especially on how it is debriefed. I wonder also how a space can be "levelled" and how learning can be "delivered"—learning is not like a pizza. Another, again anonymous, 42-page pdf file, entitled *How to teach with games*, makes no mention of debriefing. All professionals of simulation must be wary of this kind of commercialese, where buzz words from other areas, such as advertising and marketing, take precedence over real content, or even attempt to cover up empty claims. As simulation/gamers tend to be inventive, it is relatively easy for them to over promise and under deliver. This can be dubbed learnwashing.

A book that caused a buzz at the time was *Reality is broken: Why games make us better and how they can change the world*. In over 300 pages, it contains not one mention of or reference to debriefing (ascertained by a search through the pdf, not

by reading). The book appears to make the erroneous, and possibly dangerous, assumption that games equal learning. This extract from a review of the book captures the gist nicely.

> Engaging with the argument that gamers are our future feels a bit like a game itself. … Such are the extremes of opinion in my mind that I am awed by the idealism while also believing that *Reality is Broken* could be an hour-long comedy show at the Edinburgh Fringe Festival. The latter view is fuelled by games such as McGonigal's own Cruel 2 B Kind, which uses mobiles and social networking to reward random acts of kindness with points – behaviour that is supposed to spill over outside the game's boundaries. Other shiny, happy examples also provoke snorts of derisory laughter, but the underlying message is clear: gaming is good and gamers are benevolent. (Hall, 2011)

All one needs to do is to throw a bunch of people into a game, or throw a game at a bunch of people, and out of the hat pops learning. It seems that fashion, with unbridled overenthusiasm, not learning, takes the upper hand for some teachers and trainers in using educational games, and at the same time may even drive curriculum choices and the running of classroom activities. These myths and leaps of fantasy deter us from unlocking the real learning that can be achieved from properly-debriefed simulation. Some of these myths are outlined in Table 6.2.

Table 6.2 Myths about events and learning; wrong, unfounded or dangerous assumptions

Myth	Notes
People learn from games.	No. People learn from processing their game experience. Significant learning from a simulation/game happens in the processing and transformation of the game experience, not in the game itself. A crucial element of that experience is engagement (see the work done on this by Whitton, 2011). All our efforts to produce snazzy games will succeed (in helping people learn) only if we incorporate appropriate debriefing. People learn from processing and transforming (thinking about, sharing, structuring, conceptualizing, …) their experience, which means we need to debrief.
Having fun in a game produces learning.	No. People learn from processing and transforming their participation in a game experience. The often-observed giggle-type laughter during a game can be deceptive. It is often assumed and superficially appears that it indicates having fun. However, that is illusionary. Such laughter and other awkward behaviours stem from a variety of negative feelings, including feeling uncomfortable, surprise at unexpected actions, embarrassment, reluctance to participate (e.g., Pulsford, 1993; Saunders, 1985), etc. All those types of feelings may, in some ways, be considered as natural (having counterparts in the real world), but they are nevertheless present and can interfere with any learning that is to come out of the game. They do not usually constitute fun and they thus need to be addressed in the debriefing.
Video (serious) games automatically result in learning.	This was a belief among people working with video games for learning, often dubbed "serious games" (usually erroneously), in large part due to the bad name that video games have, and the self-consciousness of teachers and trainers in using the term *game* in a context (e.g., school) where they fear that their peers or even their students will not take them seriously. They feel some kind of need to signal apologetically that they are after all serious people and doing non-frivolous things in class. Usually, such ambivalence

(continued)

Table 6.2 (continued)

Myth	Notes
	and equivocation indirectly undermine their own effort and standing, and it does a disservice to the field of simulation/gaming. A basic contradiction emerges here. If games are fun (and therefore result in learning) why would we wish to make them serious? If our games are serious, how can we have fun and so, one assumes, help people learn? We cannot have it both ways.
All we need to do is throw a bunch of people together into a game and they will learn.	Even though we have a fairly good idea of how to design and build simulation/games, we still seem, as yet, to have only hazy theories of how people learn from them. As debriefing must be an integral part of a simulation, from the design stage on. I say "fairly good" because it is (I think) still early days in the development of excellent debriefing. It may well be that participants dumped into a game (even with bad facilitation and no debriefing) do learn, but they are likely to learn the wrong thing or even worse to learn that games are useless for learning, even though they appear to be fun. Once we have fully embraced the idea that debriefing is an integral part simulation, then we may be in a better position to conduct research to understand the overall learning process (event + debriefing as an integrated whole).
"Serious games" need no debriefing.	So-called "serious games" with no or inappropriate debriefing could actually be harmful to learners. The serious games industry is unlikely to make serious progress unless it does some serious debriefing.

It is rather ironic that some teachers use the term *serious game* and in the next breath assert that it is the fun that guarantees learning. My impression is that once people latch on to the superficially beguiling term, it becomes a language habit, and used without much thought about the implications. Once one pronounces such a term, it tends to lock the speaker into a social commitment, and switching back to another term can give the feeling of losing face with one's peers. My impression also is that those who use the term tend to do less or no debriefing. They are also probably less likely to read a chapter such as this.

The term *serious game* is a misnomer and is riddled with problems and impossible paradoxes. A preferred term is *learning game* or *educational game*—or simply *game*, in the way that we have been using it conveniently and widely, for decades, among gamers as an informal short-hand term for simulation/game/role-play/etc. (See, however, an interesting discussion by Djaouti et al., 2011).

6.3.2 Socio-cultural Context

Myths arise in a context, and this is no less true for simulation/games and debriefing. Thus, the context in which a simulation/game and debriefing are conducted is of vital importance. A useful summary of learning context is provided by an admired colleague, Alan Maley (2015). He outlines the following contextual dimensions of learning:

- Physical, material and economic;
- Socio-political and religious;
- Linguistic;
- Philosophical and educational;
- Family and peer group;
- Psychological, relational and affective.

Context becomes a major factor, for example, in

> cases where certain sections of the population are given privileged access to education to the detriment of other sections, as, for example in Malaysia or India. Or the system may take a non-scientific stance towards science, as in the Creationist approach in the US, or view science as a fixed body of expertise to be used for political objectives rather than as an open-ended practice of inquiry. They clearly affect the way geography or history is taught. Even the Mercator projection, which forms the basis for many maps, has a lot to answer for. Politics can affect language learning too, as in cases of post-colonial resistance to the language of the colonisers, or in views of one's own language as being inherently superior to the one being learned. Factors such as these are more influential and more stubborn than even material factors, partly because those who hold such views are often unaware that they do so. (Maley, 2015)

It is obvious that some types of context will be more conducive to participatory methods, exchange and debriefing than others. For example, gender attitudes and beliefs will influence game and debriefing outcomes; a game on gender relations with gender-prejudiced participants may make for difficult debriefing, but may also result in greater learning and behaviour change. The design of the debriefing for a group with gender prejudice may have to be more elaborate and take more time than for participants who are already attuned to gender issues.

The outcomes of debriefing for a game like STAPOWER with disadvantaged participants are likely to differ from a session with upper-class, British "public school" boys or in a school with upper-cast Indian pupils. Indeed, it is unlikely that such a simulation is even run in elitist establishments, riddled as they are by prejudices of and hunger for grandeur and power. In either case, the debriefing will need to be carefully crafted and facilitated taking into account the type of participant.

In some cases, simulation/games can be a way of breaking into taboo topics and generating useful exchange. For example, some cultures do not allow the discussion of cross-cultural issues in schools. One colleague, who influenced me greatly, Paul Pedersen (1995), was able to get his S-E-Asia class to discuss taboo (even banned) issues by "enclosing" them in a simulation. Apparently, the authorities allowed this because a simulation was, for them, just a fiction, and not the real thing. Of course, in such a context, difficulties might arise in a debriefing that encourages participants to draw parallels between the game and the reality, to examine how the game departs from and reflects one's ideas and experience of reality. (Unfortunately, Paul did not tell me how he handled this.)

Participant and institutional beliefs about learning may have a major impact on how we run and debrief games, indeed on whether or not we run games at all. It

should be fairly easy to guess which of the following two context types is more conducive to learning from events and debriefing.

> Other factors include the overall beliefs about how learning should be conducted. Broadly conservative or traditional beliefs place a high value on discipline, effort, competition, memorisation and testing, and tend to view learning as something difficult and painful. By contrast, more liberal or exploratory approaches view learning as a pleasurable, creative and cooperative enterprise where the emphasis is on the quality of the process rather than the short-term product in the form of examination results. (Maley, 2015)

Sometimes you need to muster up a certain amount of courage to impose your way of "teaching". On exiting my classroom, at the end of one of my classes, in which students participated in a simulation, I encountered a colleague teacher exiting his classroom. He complained, "your class makes a lot of noise", to which I retorted, "yes, but that indicates that my students are working hard and learning". I did not hear from him again.

The type of context will also determine, not just the amount, but more importantly, the type of talk and dialogue that takes place there. This is important for both learning and for simulation and debriefing. The most effective learning (probably) occurs through talk and dialogue (see, e.g., Alexander, 2018b). Both simulation and debriefing involve and depend on exchange and sharing through talk and dialogue. Some insightful ethnomethodological studies regarding talk in simulation are worth looking at: Francis (1989), Sharrock and Watson (1985), Sjöblom (2006) and others. It would be even more insightful to have conversational analysis conducted on debriefing. This takes us to the next topic of approaches.

6.3.3 Approaches (Educational Philosophies and Theories of Learning)

One might argue that educational philosophies and theories of learning are part of the context of education; they provide the backdrop to, and influence, the way we facilitate simulation and debriefing. Through a process of social construction and legitimization (see Berger & Luckmann, 1966), these philosophies and theories arise out of, and develop (thrive or whither) within, socio-politico-cultural educational fashions. Indeed, education itself can be considered as a social construction (see Dragonas et al., 2015), and thus so can the area of simulation/gaming and the practice of debriefing. Those two works should be high on the reading list of any serious debriefer.

A chapter on debriefing would not be complete if it did not mention theories of learning, especially in relation to the various ways of debriefing. Unfortunately (or fortunately ☺), you are reading a less than complete chapter, but you will find many books and articles elsewhere that outline, discuss and analyse the various facets, ins and outs of many learning theories that have been concocted over the years.

However, learning simulation users often refer to one theory in particular. This is experiential learning theory (ELT), developed principally by my friends Alice and Dave Kolb (Kolb, 2015; Kolb & Kolb, 2009; Thatcher, 1990). Over the last few years, with the increase in use of participatory and experiential methods in education and training, ELT has gathered a large following—and rightly so. Their books and articles have inspired many people using participatory methods—see the references in the bibliography.

The principal concern in this chapter is the use of debriefing in simulation to help people learn. One thing that will help participants learn (more effectively) is if they, in addition you, have an idea, even if rather hazy, about the theoretical underpinnings of the rather complex journey that you are asking them to follow. The one that I tend to use is ELT, as it is probably more immediately understandable by participants. It is helpful for participants to understand the process and the relationship between simulation+debriefing and their learning, even if only superficially. For first-time participants, I often use the diagram in Fig. 6.2, starting with concrete experience, furnished by a game.

Other related theories are also relevant for simulation and debriefing, for example, engagement, motivation, adult learning, constructivism, dialogic learning, cognitive learning and social learning. Also, fortunately, you do not need to know a huge lot about these theoretical edifices in order to design and conduct good debriefing. For the sake of simplicity, we may group philosophies and theories under the unassuming, umbrella term *approaches*. They have been developed over the last half century or more, and go under a variety of names, often associated with a person, usually the person who did the pioneering work. They often overlap and reinforce each other. Each approach often includes ideas drawn from other approaches. Of course, you do not need to read all of these to be able to do good

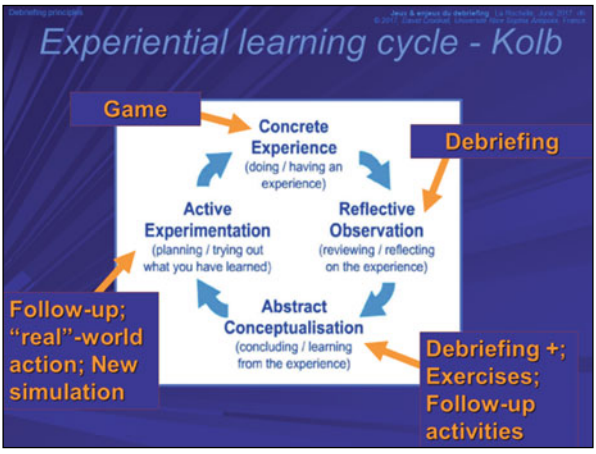


Fig. 6.2 Explaining debriefing to participant learners, using ELT

debriefing, but a familiarity with some of the areas and approaches is likely to provide intellectual and emotional support as you search for and develop your own ways of debriefing. Most of the approaches would confidently support the activity of debriefing in general and some of the approaches would strongly support your own ways in particular. If pushed, I would say that the five that I have found particularly helpful have been experiential learning, reflection, self-determination constructivism and engagement. Some are listed in Table 6.3, with a few references.

Of course, other terms have also been used, sometimes with the word *learning*, such as deep, active, project-based, problem-based, brain-based, situated, mastery learning and so on. You will find more about these and similar approaches in a wide variety of publications (e.g., Angelini, 2022; Clapper, 2010, 2015; Kriz, 2008; Phillips, 2014; Whitton, 2011; Whitton & Moseley, 2014)—all relevant to simulation and debriefing.

Cornerstones of the above approaches are often mentioned in writing on simulation/gaming and debriefing. They include the ideas that:

- Experience and making sense of it are at the heart of all meaningful learning.
- Interaction, participation and engagement lead to rich learning experiences.
- Learning is achieved through creating communities, generating meanings and developing understanding.
- Talk, discussion and conversation are the prime means by which humans achieve learning.
- "Understanding is fostered through discussions and collaboration." Jerome Bruner.
- "Talk is the foundation stone of all learning." Debra Myhill.
- "It is hard to imagine an effective approach to learning that does not involve the learner in some kind of experience." (Phillips, 2014).

Of course, each of the above approaches will emphasize certain aspects of learning, and thus influence simulation and its debriefing in certain ways, sometimes subtle, sometimes overtly and strongly. This chapter is not the place to analyse each approach in terms of its influence on simulation and debriefing. However, some familiarity with some of the approaches can bring greater confidence in your journey of learning to guide debriefing and make it more effective than without some background in some of the approaches.

> This means a shift from education as knowledge absorption to knowledge making. It is not what you can recite that reveals a good education, but what you can do. … what we take to be known is always in motion. The challenge for future educational practices is preparing students for a life of continuous innovation—or knowledge making. … when relational process is placed in the forefront of concern, a major shift occurs. One begins to ask how pedagogical practices can become more participatory and collaborative; and to explore alternatives to the evaluation of individuals. … The emphasis on participatory processes extends as well to teacher training, and indeed to thinking about the well-being of entire educational systems, and the way they function to build meaning and inspire action. (Dragonas et al., 2015).

Table 6.3 Approaches to learning

Approach	Originator
Andragogy	Alexander Knapp, Malcolm Knowles. See Clapper (2010)
Cognitive learning and educational goals	Bloom et al. (1956)
Community of practice; social learning	Wenger (2008), Lave and Wenger (1991), García-Carbonell et al. (2004)
Conscientization; critical pedagogy; praxis; democracy; rights	Freire et al. (2020), Freire and Freire (2021). Noam Chomsky (Chomsky & Macedo, 2000; Chomsky & Otero, 2003)
Constructivism (cognitive, social, …); zone of proximal development; scaffolding	Jean Piaget; Dewey (1916, 1938); Bruner (1977); Berger & Luckmann (1966); Lev Vygotsy; Maria Montessori. See Clapper (2014), Kriz (2008), Dragonas et al. (2015)
Cooperative, collaborative and out-of-class learning	Johnson and Johnson (1987), Jacobs and Crookes (2022), Jacobs and Kimura (2013). See Clapper (2015)
Dialogic learning	Alexander (2018a, 2018b, 2020), Freire et al. (2020), Freire and Freire (2021), Flecha (2000), Skidmore and Murakami (2016), Mercer et al. (2019), Wegerif (2022)
Emotional intelligence	Goleman (1998)
Engagement	Whitton (2011), Christenson et al. (2012)
Experiential learning	Dewey (1916, 1938), Kolb (2015), Kurt Lewin
Flow	Csikszentmihalyi (2014, 2016)
Humanism	Carl Rogers; Abraham Maslow
Language	Duke (1974), García-Carbonell et al. (2014), Crookall and Oxford (1990)
Metacognition	Flavell (1976, 1979)
Multiple intelligences	Gardner (2011)
Narrative movement	Phillion et al. (2005), Rossiter and Clark (2007), Clark and Rossiter (2008)
Reflective learning; Tacit knowledge	Schön (1983, 1990)
Self-directed learning; self-determination	Holec (1981a, 1981b, 1988), Hiemstra and Brockett (2020)
Situated learning; communities of practice	Lave and Wenger (1991)
Social learning; self-efficacy; social interaction	Bandura (1977, 1995, 2012)
Sociocultural learning; spiral curriculum	Bruner (1977)
Styles, strategies	Honey and Mumford (1986), Myers (2014), Alice and David Kolb (2013), Dunn and Dunn (1978), Oxford (1990)
Transformative learning; critical reflection; emotion	Mezirow (1991)
Overviews	Some overviews of some of the above: Illeris (2018), Malinen (2000), Johnson (2022), Pritchard (2018)

Simulation practitioners claim that participatory simulation is a powerful tool to achieve such things, but their real or true power resides in the debriefing. Many participatory activities, such as outings, projects, outdoor activities, school holiday camps (Colonies de Vacances), internships and expeditions, could be enhanced greatly if they employed debriefing, especially in a form adapted to the activity and participants. In addition,

> There is no way to help a learner to be disciplined, active and thoroughly engaged unless he perceives a problem to be a problem or whatever is to be learned as worth learning, and unless he plays an active role in determining the process of solution. That is the plain unvarnished truth, and if it sounds like warmed-over 'progressive education', it is none the less true for it. . . .
>
> We have largely trapped ourselves in our schools into expending almost all of our energies and resources in the direction of preserving patterns and procedures that make no sense *even in their own terms*. They simply do not produce the results that are claimed as their justification in the first place—quite the contrary.
>
> Although the word 'game' has connotations that are not usually associated with intellectual growth, there are few concepts or skills that could not be learned with a rare degree of understanding and durability through an educational game approach. In fact, a 'game approach' [and debriefing] permits the development of a learning environment that is much more congruent to what we know about learning than any other approach now used in schools (Postman & Weingartner, 1969; emphasis in the original).

6.3.4 'Truths'

In the light of the debriefing myths and the variety of contexts and of approaches discussed above, it is useful to remind ourselves of some basic "truths" (some would say assumptions) about learning, especially in regard to games and debriefing.

- Learning is a journey.
- Learning goals are totally different from game objectives.
- Game objectives end when the game ends.
- Game experience is processed and transformed in the debriefing (and beyond).
- Learning goals are achieved mostly in (and after) the debriefing.
- Learning arises from, and is enhanced by, the processing and transformation of game experience.
- Skills are learnt on task (reflection in) and from discussion about task (reflection on).
- Disciplines are artificial constructs invented by academics; simulation/games are multi-disciplinary.
- Both the real world and simulation are interdisciplinary, multi-skilled.

Some further Assumptions Underlying Experiential Exercises (Schwartz, 2002) are also worth keeping in mind when designing your debriefing:

- Learning is more effective when it is an active rather than a passive process.
- Problem-centred learning is more enduring than theory-based learning.

- Two-way communication produces better learning than one-way communication.
- Participants learn more when they share control over and responsibility for the learning process than when the responsibility lies solely with the group leader.
- Learning is most effective when thought and action are integrated.

6.3.5 Ethics

When people have been asked to participate in an event that involves them personally (cognitively, emotionally, socially, etc.), it becomes an ethical responsibility to provide a safe space and moment for the participant to process their experience in such a way that they may learn from it, be enriched and move on in life. Some events can be fairly stressful, and that stress is best channelled in a positive manner, allowing participants to understand their experience in such events, rather than having to deal later with cloudy after-thoughts or lingering prejudices.

Increasingly, people are forced to participate in a stressful or traumatic event, either inadvertently, such as in a personal attack (theft, terrorism) or a natural disaster (earthquake), or unwillingly, such as in politics, war or self-defence (e.g., defending one's land rights). The greater the stress and trauma, the greater the ethical imperative to enable participants or victims to recover or start their recovery, and the more elaborate the debriefing needs to be. A traumatic experience is often debriefed in critical incident stress debriefing (CISD, see below).

In the comparatively benign events used for educational purposes, participants may still experience stress and upset. This may be by design or unplanned. The stress or upset may be designed into the simulation (e.g., a simulation of a doctor telling bad news to a family or of a confusing intercultural encounter) and made part of the learning objectives, or the stress may arise from some unexpected incident or unforeseen parameter (see Boxes 5 and 7). Facilitators are under an ethical obligation to attend to such emotions (see Pearson & Smith, 1985). In addition, it is certainly unethical to use games or debriefing to peddle misinformation, erroneous ideas or untruths.

In addition, it is a professional responsibility and ethical obligation for all those involved in learning and training games, as designers or facilitators, to get trained (or self-train) in designing and facilitating debriefing sessions as part of the events that they run. Also, as Kriz (2008) implies, just as designing a game without including debriefing in the design process and including debriefing materials in the game is unethical, undertaking to debrief a game without basic debriefing skill training is unethical. This is so important that several gamers in the medical arena have designed debriefer training and standards and make it a requirement for anyone to debrief in a clinical setting—see, for example, the eminently clear standards for debriefing set out by the INACSL Standards Committee (2016). In addition, for debriefer coaching, see Cheng et al. (2017), for a debriefer assessment

instrument, see Brett-Fleegler et al. (2012), for debriefer stance and interpersonal skill, see Rudolph et al. (2007), and for best practices, see Lyons et al. (2015).

Many professional associations have codes of ethics and ethics committees and produce ethics reports. Examples of such organizations are the American Geophysical Union (AGU), the European Geosciences Union (EGU), the British Educational Research Association (BERA), the Ecological Society of America (ESA), the Association for Computing Machinery (ACM), the American Psychological Association (APA) and many others. In 2010, the 2nd World Conference on Research Integrity developed the Singapore Statement on Research Integrity. It has been adopted by several organizations, such as the American Educational Research Association, which itself has a 12-page code of ethics. Another is the Association for Practical and Professional Ethics (APPE),

> dedicated to advancing scholarship, education, and practice in practical and professional ethics. APPE fosters moral reasoning skill development, works to promote ethical conduct in all sectors of our daily lives, (*About APPE*, n.d.)

One vibrant organization, the International Association for Promoting Geoethics (IAPG), is extremely active in widening the debate on problems of Ethics applied to Geosciences. In 2016, it adopted the Cape Town Statement on Geoethics, and it has been translated into more than 35 languages.

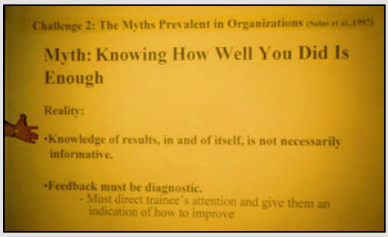
So, my question is: Would it not make ethical sense for the simulation/gaming associations to draw up codes of ethics or ethical guidelines? They should cover all aspects of simulation/gaming, such as design, facilitation, debriefing, publication and facilitator training, and they need, of course, to include clear guides about debriefing. Almost the only simulation associations that concern themselves with ethics seem to be those working with medical simulation, such as the Society for Simulation in Healthcare (SSH) (see Park et al., 2018) and the International Nursing Association of Clinical and Simulation Learning (INACSL) (see Decker et al., 2013, 2021).

However, as far as I know, all the general simulation/gaming associations have failed to produce a code of ethics for simulation and debriefing. I have in mind the SAGAs, including the well-established, Europe-based, International Simulation and Gaming Association (ISAGA) and the North American Simulation and Gaming Association (NASAGA), but also the more recent associations that have popped up (and sometimes faded) over the last couple of decades. The excellent article by my friend Marieke de Wijse-van Heeswijk (2021), titled *Ethics and the simulation facilitator: Taking your professional role seriously*, would be a good starting point for any discussion on a simulation code of ethics and, in that code, on debriefing ethics. Also, Roungas et al. (2018) and several medical simulation articles that mention ethics would be good sources from which to draw inspiration for a general simulation and debriefing code of ethics. Of course, games themselves are used to teach ethics, so why not design a simulation/game precisely to help develop an ethics code for debriefing? See Box 2 for two early efforts in which I was involved.

Box 2. Precursors to ethics for debriefing

This absence of a codified ethics for simulation/gaming is not for lack of trying. Many years ago, in July 1993, my friend, Kiyoshi Arai, Dick Chadwick, myself and others organized an International Conference on Professional Standards in Simulation, in Fukuoka, Japan. This by-invitation-only conference was intended to propose and debate professional standards, ethics and ideas related to the future development of simulation/gaming. Several draft documents were produced, but nothing, as far as I know, was published. (I may still even have some of those documents on an old hard drive. If anyone would like a copy, let me know.)

In 2002, I was invited to an inspiring meeting (http://medical.simulation.free.fr/) on the topic of training facilitators of medical simulation. This was in the early days of medical simulation, and it also gave impetus to the development of ethical principles and practices. Debriefing was an important theme, as illustrated in this photo of Edwardo Salas giving a presentation. Two top airline pilot trainers were also there and emphasized the importance of debriefing. Another attendee was Dave Gaba, who later went on to write an influential article on debriefing (Fanning & Gaba, 2007), and to set up the Society for Simulation in Healthcare (SSH) and found the journal *Simulation in Healthcare*.



6.3.6 Purposes

It is this context, recognizing the imperative of ethics, to which I can now return. Here I outline the main reasons for which debriefing is conducted after or during events, whether they be games, simulations or true (non-game) experiences, such as an internship, field trip, team project, research project, natural disaster or an accident. Several broad and overlapping purposes can be identified, such as learning, operational and relational (behavioural), both for simulations and for non-simulation situations. Some are listed in Table 6.4.

Personal sharing. Much writing on debriefing tends to overlook what is probably the most common form of debriefing. This is something that most humans on this planet indulge in as part of their every day, usually social, lives and as a matter of course. It is so taken for granted that it goes almost unnoticed—unnoticed, that is, until someone transgresses an ordinary social rule, such as "do not talk too much" or "you are not supposed to say such things" or "showing your emotions inappropriately in public is not good". This common-and-garden debriefing happens as a part (large part?) of our small talk, among family members, friends and colleagues, at home and at work, over meals, strolling, and in any place where two or more people come together in an atmosphere of relative trust.

You may have noticed that many people, probably including yourself, love to go for a walk together and chat about stuff or to have a coffee together and exchange ideas, thoughts, feelings, worries, experience, successes, expectations and so on.

Table 6.4 Some reasons for using debriefing

• Celebrating hard work • Troubleshooting challenge • Building relationships • Providing closure • Making plans for the next activity • Build and develop leaders • Reward successes • Identify opportunities for future training • Marking a pause in a long project • Finding the solution to a problem • Sharing experiences of people back from separate missions • As part of research, e.g., for clarifying issues and scenarios at the end of psychological studies (sometimes termed deception studies) • Increasing team effectiveness • During and following internships • At the end of an underwater dive • Celebrating a win • Taking stock for a team	• Providing opportunity to hold people accountable for closing down a project • Providing an occasion to reinforce goals • Wrapping up tasks • Critical incident debriefing (CID), also known as critical incident stress debriefing (CISD), e.g., after a traumatic experience (e.g., natural disaster, violent incident, traffic accident) • Following and during (long) visits to different cultures • Planning for a project • At various points (typically) at the end of a real or simulated medical intervention • Cheer people up and reassuring them after a failure • Gathering information at the end of a project or a field trip or exploration • At various points in professional training (e.g., flying)

People like to gather in a restaurant and reminisce about times that they had together; they like to call each other up or go online to share (even vaunt) their success (partly to get more pats on the back; nowadays it is often in the form of "likes") or to commiserate with someone over an unhappy or tragic incident (partly so that the sharing helps them to feel that the weight is lightened and that they are not alone). In our increasingly I-me-and-myself world today, people even do it in some media and on TV—generally in the often frivolous chat shows that have proliferated around the world.

Sharing experience—or debriefing, as we call it—is an activity that most people do naturally and spontaneously, for a whole variety of purposes—often unawares—see Box 3. In our more formal debriefing episodes as part of simulation and other learning events, we need to remember and draw on that natural tendency (or urge) that people have to share, especially with others who are likely to understand and with whom we have shared a common experience in a simulation?

Box 3. Spontaneous, natural debriefing

My own experience demonstrates to me this natural tendency that people have to wish to share experience, to debrief. Most weekdays, I walk down to the bus stop to meet one of my daughters, back home from the university. All it takes is one little expression, "so?", and they will talk all the way home about their class, what they learned, their latest grade, an upcoming exam, the homework that they have been given and so on.

Operational. An example of operational debriefing is when an individual, a group or a team (in a simulated or a real situation) needs to assess work performed or action accomplished, the manner of performance and what was or was not achieved. The purpose here is to discover what was done well and what tasks could have been done better and to deliberate on what changes should be made and how to accomplish such changes.

This type of debriefing helps individuals and teams to learn, and to learn to learn. At work, this is mostly carried out in a formal or informal meeting and often without regard for the important elements or structure normally associated with a formal debriefing. With increasing desire (or pressure) to sound technical, organized, modern and even authoritative, the term *debriefing* is increasingly used for such meetings.

However, the term alone accomplishes little; it is the content and practice that counts. Real, operational debriefings are common, such as in mountain rescue crews (e.g., the impressive PGHM, Peloton de Gendarmerie de Haute Montagne, in the Mont Blanc massif), sea rescue (e.g., Société Nationale de Sauvetage en Mer), police interventions, fire brigades, Antarctic exploration, research excursions, mountain expeditions, public festivals, commercial campaigns and many other kinds of events. This is where the term *event* takes on its usual force, although the events industry still seems to be oblivious to the advantages of debriefing and thus to fail to learn fully from the events that they organize. Box 4 contains a personal example.

Box 4. Operational debrief after a dive

My personal experiences with operational debriefing have occurred most when diving. Before leaving the dive boat, we would be briefed by the dive master. After returning to the boat, and over a well-earned lunch, the dive master would debrief the group of divers. We would talk about difficulties that we encountered, get answers to technical questions, learn about the flora and fauna that we observed, and consider how to do better for the next dive. Of course, here, the urge to talk is even greater than in most other situations because one cannot talk underwater (unless one is equipped with special and expensive apparatus). One might characterize this type of debriefing as both operational and personal sharing. (The photo is of me during a diving expedition in Thailand.)

Often the debrief feeds into the next step of operations, such as in-team training or the next dive. Operational debriefing provides a powerful opportunity to assess problematic and successful strategies, with the aim of moving forward in a positive and constructive manner, for the people concerned in particular and, ultimately, for

society more generally. This type of debriefing may include, and often overlaps with, relational and behavioural debriefing.

Relational/behavioural. A debriefing session can be organized with the purpose of helping to improve relations among people or to help people to correct behaviours so that they are more appropriate for a given setting. It may also be used to understand a common experience, such as a research expedition or a field trip, in which relations may become strained (partly due to situational stress and hardship). It may be to take stock of progress in an ongoing improvement programme.

On a more individual level, relational or behavioural debriefing might aim to help the person to make clearer sense of events, to integrate their experience into their life as a whole, to perceive their experience more meaningfully, to bring a sense of closure to an event or to bring peace to a conflict (among people or in oneself). Strong debriefing skills are needed in unethical, unprofessional situations, such as in an expedition, where a junior female explorer is harassed or worse. All expedition leaders and their assistants need to be skilled in debriefing. Sexual harassment is not an uncommon event on some geoscience expeditions, and this has led to all-female expeditions being organized.

Debriefing can also be needed unexpectedly at the start or on the side of a simulation. See Box 5 for an unexpected incident (at the start of simulation), which was debriefed and thus helped one person find peace with playing cards.

Box 5. Unforeseen necessity to debrief outside of a simulation

Sometimes a particularly unexpected incident occurs and needs debriefing attention. Usually, it cannot be foreseen. An example of one that happened was during one of my workshops. I was co-facilitating a pre-conference SIETAR workshop with my dear friend Sandy Fowler (past president of SIETAR International and of SIETAR USA). The theme of the training workshop was using simulation for intercultural training, attended by some 20 professional interculturalists. Along with other games, we had decided to use Thiagarajan (Thiagi) Sivasailam's *Barnga*. This wonderful game uses ordinary playing cards, with players sitting in small groups.

Very soon after asking each table to distribute its pack, I noticed that one player in a group seemed uncomfortable. Other players had not yet noticed as they were focused on their cards. I went over to the player and asked if she was ok. She said that she could not play in this game, which had come as a bit of a shock to her in an intercultural train-the-trainer session. By now the other players in her group had become aware of the situation. I asked why, and she said that she knew why, but was shy of telling, and then the other players showed sympathy. I said that it might help if she shared with the group.

After a slight hesitation, she then proceeded to tell a story of how she had been mistreated at school when playing cards. That had put her off cards for many years and she had almost forgotten about it. Having to hold the cards for *Barnga* and being confronted with the idea of playing cards again revived her unhappy childhood experience. After explaining, with everyone listening carefully and showing sympathy [the group was composed of all women], she said that a weight had been lifted off her shoulders, and warmly thanked everyone. To everyone's delight she then declared herself willing to play *Barnga*. This, and not intercultural simulation, may well have been the biggest learning for her from that workshop.

Critical Incident Stress Debriefing (CISD). This is a specialized and structured form of personal debriefing, which needs to be conducted by trained personnel. It usually takes place after a traumatic experience, such as a natural disaster, a violent incident or a road accident. In this type of debriefing, ethics will play a particularly important guiding role. This chapter does not look at this type of debriefing as it requires special training and is not usually accomplished as part of a simulation. However, some of its elements may be useful for simulation debriefing.

Learning experiences. This is the area of application that concerns us most here, and on which this chapter focuses. The broad reason why debriefing is used in learning is primarily to ensure that an experience leads to some kind of learning. The range of types of experience is huge. A game, simulation or role-play must be debriefed. Other types of learning experience, such as values exercises, internships, field trips, expeditions and project work, do not always require debriefing, but can usually benefit immensely from some form of debriefing, adapted, of course, to the learning objectives and type of experience. For example, an internship is not usually debriefed, but it should be—see Box 6.

Box 6. Debriefing for internships—unethical omission by universities

In a couple of my university appointments, part of my responsibility was to 'supervise' master's students during their internships. This entailed site visits, meeting with the students' company supervisors and overseeing the writing of student reports. Several times I asked students to include a chapter entitled "how and what I learned". The idea (at least for me) was to allow them to reflect on their learning process during the internship, which after all constitutes a key learning experience in their studies. They would tell me "that is not in the guide for writing reports". So I asked "but is that not a key ingredient for learning from an internship?", "would it not be useful as part of your studies to reflect and write about your own personal learning process?" and "would it not be useful later in professional life to be aware of the ways in which you learn?". "Of course", they would say, without hesitation.

I tried to get the university administration to change the guide. To no avail. That is how education in general, and universities in particular, get stuck in a rut. More importantly, it results in millions of students missing out on an important learning opportunity. In other words, it is one way in which universities are failing in their responsibility to students—that is unethical, to come back to the ethics statement by Willy Kriz.

One student—a woman of Muslim faith, and for whom I was her internship supervisor—called me several times during her internship because she was being pressured, illegally, to take off her headscarf. We had several conversations (debriefings) about it. She obviously learned much from the experience; as I did. I encouraged her to put that in her end-of-internship report, but she was not comfortable doing that, even though it was important for her. "I cannot put my personal experience in there; they would not accept it".

You will, of course, have noticed that the above cases can be somewhat close to the situations created by participation in a simulation, especially ones in which emotions are generated and in which the participant is engaged personally as a whole person. In such cases, debriefing becomes paramount.

6.3.7 Issues

The above purposes are varied and raise a number of crucial issues, each of which should be considered when designing and implementing a debrief, depending on the situation.

Ownership and participant centredness. In our simulation debriefing, we need to remember that the natural tendency is for people to share personal experience, that the experience was lived by participants and therefore that it was *their* experience, not the facilitator's. This means that debriefing belongs to the participant and that we must not do what the traditional teacher tends to do—seize control and get in the way. We need to remember to avoid snatching away that desire to share by plonking ourselves in the middle. How would you like it if, in the middle of a quiet chat with your friend in a café, an acquaintance walks in and takes over the conversation and starts to tell you what is what and what your experience is and should have been, what it is right and wrong about it and indeed what you must understand from it. I am sure that you would be disappointed at best and thoroughly annoyed or more at worst. This is similar, mutatis mutandis, to many simulations, debriefs that I have witnessed (as participant, as observer, and even—in my early gaming days—as debriefer).

Later, in the section *Who*, we will look at this dichotomy of teacher-focused and participant-centred debriefing. For the moment, it is worth wrapping your head round the idea that people's experiences and their sharing of them belong to them, even more so when it is a learning-oriented debriefing. It is fundamentally a question of respect and even rights. In the end, one must ask: What right does a teacher–debriefer have to jump in and quash participants' words, feelings and thoughts?

Stress. Some simulation sessions can involve emotional stress. The greater the stress in a simulation, the greater the need to conduct debriefing sessions that allow the stress and emotions to be shared, released and understood. Only after that has happened will participants be ready to move on (as mentioned above) and think about the more cognitive aspects of their experience. See a concrete example detailed in Boxes 7, 8 and 9.

Box 7. Emotion-generating simulation

During my stay in the USA, I taught a master's level class for trainee teachers. One of the classes was about understanding the learning process and the learners' viewpoint. The rationale was that many trainers and teachers over time tend to forget what it is like to be a learner, especially during moments when teachers and peers heighten the pressure to perform or learn.

I remembered a simulation called *Me The Slow Learner*, designed by Don Thatcher and June Robinson. I remembered participating in a prototype version during a SAGSET conference in the UK and run by Don himself. I was both moved and intrigued by the simulation. I was also impressed by Don's manner of conducting the game and debriefing. Don was an excellent game designer and one of the best facilitators ever in simulation/gaming. While I was Ed of *S&G*, I invited Don to guest edit a special issue because I wanted people to know about his work.

For my master's class, Don's simulation immediately came to mind as an effective and affective way of getting future teachers, who had even by then forgotten what a challenge it is to learn certain things, and thus to get future teachers to understand something of the learning difficulties of their future students.

The simulation is fairly straightforward. It consists of handicapping participants so that they find it difficult to accomplish simple tasks. For example, I bandaged students' index and middle finger with tape, gave them a blunt scissors and told them to cut a clean square in the middle of a piece of paper. They had a list of tasks to accomplish. During this time, students were not allowed to talk and I berated them noisily for sloppy work. As you can imagine, this was a rather stressful moment, even though tasks only lasted a short time (about 20 minutes). (Cont. in Box 8.)

Box 8. Emotions and participant-centred debriefing: A memorable and learning experience

(Cont. from Box 7.) I planned to do a short debrief before the end of the class and a full debrief the following class (about three days later). Soon after the start of the debrief, one student broke down in tears. The rest of that debrief was given over to listening to her. By the end of the class, she had calmed down and reassured me and the other students that she was fine. The students left the class with a debriefing form to fill, asking questions about their experience.

In the second, class-long debriefing session, everyone shared their emotions and their experience. The person who had cried in the previous class again attracted everyone's attention. She explained that she had broken down because the handicap experience in the simulation brought back to her memories of a time in her childhood when she had been forced to learn things for which she was not ready and in a strict school environment. She explained that these memories came flooding back as we started the short debrief, memories that she had almost forgotten, "almost" because she had not spoken about them for several years—as no one would listen to or believe her. She explained that her simulation experience and being able to talk about her childhood experience were liberating for her. She said that she felt that a weight had been lifted and that she was glad to have been in the simulation.

At the end of the second class, I asked students if they wished to move on to the next item in their syllabus or if they wished to debrief further. Unanimously and strongly, they expressed a desire to continue with the debrief.

Thus, the third class was taken up with a second class session debriefing. In the end, the students said that would be like a third whole-class debriefing, which we did. So, one class of simulation lead, unexpectedly for me, to three classes of debriefing.

In a way, I feel grateful to that class and especially to the student who had the courage to share what was, after all, an intimate experience from her private past. See also the lessons that I myself, as a debriefer, learned from this experience, in Box 9.

Box 9. Lessons from debriefing *Me the Slow Learner* (Thatcher)

(Cont. from Box 8.) The lessons for me in debriefing *Me the Slow Learner* in a master's class for trainee teachers were:

- You can never overestimate the time needed for debriefing.
- You have to expect the unexpected (as I think Ellysbeth Leigh would say).

- As a result, you must be flexible in allocating enough time for participants to debrief as much as they express the need to do so.
- If necessary, you must be ready to drop elements of a pre-decided programme, such as items in a syllabus, to make way for extra or unplanned debriefing.
- You need to plan more time than you think will be necessary, it being better to end before time than to run over time and find yourself in a crunch.
- You must stay focused on the participants' emotions, experience, sharings, ideas, and not attempt to take them over and place them into your own pre-conceived idea of what and how they should have learned.
- You should always respect the learner's own freedom to learn. It is their process, not yours. That does not mean that you cannot intervene, but intervention should be done at the right moments and in appropriate ways, when the participants are ready, not when you want. All that takes time.

Of course, it should be kept in mind that it is not the calling of a debrief per se, the decision by you to debrief, that accomplishes the work. It is accomplished by participants' effort during, and after, the debriefing. Seen in that light, debriefing can be a stressful time as well as a liberating and eye-opening moment. Much depends on the event being debriefed, the facilitator (debriefer), the manner of debriefing, the mindset of the participant and other factors. One important factor is the participant-centredness of the debrief—how much participants are allowed, indeed, encouraged to take ownership of their debriefing session. This will be discussed further in *How*.

Some people seem to be shy of mentioning debriefing—as if this was not really the thing to do or as if participants might not like it. 'Understandable,' they might insist, 'for after an exciting game, what could be drearier than talking about it?'. Make no mistake, most learners will be grateful for the opportunity to share their common experience together, especially in a structured, learner-centred debrief. Most of the classes that I have taught involved some form of debriefing, and as time went by, the relative time spent on debriefing increased and the focus was increasingly on debriefing.

The students learned that no game would be without a debriefing. Over a short period of time (two or three class periods), they learned how to debrief in their small, participant-centred groups. I would not infrequently hear, at the end of a game, a student spontaneously and eagerly say something like "ok, let us now go and debrief" or "come on, we have to debrief, then we can learn". They would then organize themselves, draw up a few chairs into a circle round a small table, ask for the individual debriefing form (see below, in *How*) and focus on the debriefing process. In the same way that simulation provides a relatively safe, controlled and mistake-tolerant system for participants to explore, so should debriefing provide a safe setting for them (and you as debriefer, or better as debriefing organizer) to learn and make mistakes.

Social issues. An ordinary classroom is often conducted as if all students were the same. How many times do we hear teachers and authorities insisting that all are treated equally, for fear of being accused of favouritism and other ills. In such a classroom, social relations, realities of the real wild, feelings and individual identities are left at the door, and the teacher carries on merrily (or not so merrily) with teaching about *Les Fleurs du mal* (a collection of poems by Baudelaire, 1857) or sine and cosine in trigonometry, as if they were totally separated from, had absolutely nothing to do with, the learner. Both teacher and student breath signs of relief when the end-of-class bell rings—a real case of saved by the bell.

This is difficult with a simulation/game and impossible in debriefing. Each participant in such an event brings with them their own individual feelings, prejudices, preferences, ways of thinking, socially-marked accents and ways of talking, their beliefs and fears about the world and other people. Their experience (often unawares) of inter-group relations, gendered ways and a whole host of characteristics that are interpreted by fellow participants, all mitigate or enrich participation in usually unforeseen and imperceptible ways. In the simulation itself, such idiosyncrasies may manifest themselves in unsurprising ways, as they do in everyday life, and they may enhance or cloud game objectives and other factors. However, when it comes to debriefing, these elements may well come to the fore and be seen in a clearer light than in everyday life. (See, e.g., my job-interview simulation sequence, outlined in the Appendix).

6.3.8 Fidelity: A Fundamental, Practical and Ethical Reason for Debriefing

The above discussion will have given you an overview of several reasons why you should debrief. However, a further reason underlying most of the reasons above is related to what one might call the inevitable lack of simulation fidelity or the hiatus or mismatch between a simulation and its referent situation (the real-world situation represented in the simulation). Most simulators and simulations by definition represent only part of the referent system. They do not and cannot achieve absolute fidelity. If they did, it would be reality itself—the referent situation—and thus the simulation would be superfluous and the reality possibly or probably dangerous.

Imagine, for example, an airline company inviting a novice pilot to fly a real Airbus aircraft with real passengers. Would you be happy to be on that flight? A real aircraft and a high-level simulator are just too complex for a novice or even an intermediate learner pilot. Learners need to progress in steps or degrees of complexity—or of fidelity to the referent system. Three levels are depicted in Fig. 6.3.

Fig. 6.3 Levels of fidelity for flight simulators: beginner, intermediate, advanced

Simulation infidelity is not always examined in a debrief, even though it is a key to learning (see Box 10 for an example in aviation). I like to raise the debriefing of simulation infidelity with a question like "what are the differences and similarities between the simulation and reality (or the real-world referent situation)?". This lack of fidelity has often posed a dilemma, discussed by the more theoretical simulation scholars. The basic question is usually: How faithful should a simulation be in order to achieve the learning objectives for which it is built?

Box 10. Flight simulation
One concrete experience that I was lucky enough to have had was to fly an Airbus, well, to fly a simulator of an Airbus. This was during the Singapore ISAGA conference. After the excitement of flying over Rio, with help from the professional trainer, we chatted, and I asked him about debriefing. I remember to this day how clear he was in emphasizing how crucial debriefing was in all their training. The simulator records every decision and movement, and later during the debriefing, they can play back the sequence, discuss and then try again. It is also the debriefs that allow trainee pilots to move up levels of fidelity (see Fig. 6.3). Aircraft simulators would not be worth much without debriefing. Medical simulation experts understand this too. All areas using simulation need to learn from aviation.

A simulation that reproduces extremely faithfully the simulated or referent situation could turn out to be far too complex for beginners and intermediates to learn. A simulation that is too simple and represents just a few of the referent situation characteristics is unlikely to be of much use to the advanced learner. This is partly why apprentice pilots progress from fairly simple trainers, through more complex simulators before moving to full-blown advanced aircraft simulators—Fig. 6.3.

However, the above question and concern with level of fidelity of a simulation for learning often misses the point. It is not always or so much the fidelity of the simulation, but how the debriefing is conducted. Thus, talk about simulation fidelity cannot omit talk of debriefing fidelity. The central question should be how and how far the debriefing helps a learner to move towards the real-world complexity from the starting point of the simulation, its level of fidelity. Some people get excited

about the high fidelity of their simulation. This is okay for research and exploration purposes (such as for climate and meteorology), but for learning, they should get excited, instead, about the ways in which their debriefing (built into their simulation) can help learners attain the desired complexity. It is the debriefing that helps to bridge the gap between simulation and reality. Indeed, it is this 'gap' that ethically and learningly requires debriefing—see discussion in the next section.

We should also not forget the immense capacity that the human mind has for imagination. In many ways, one could say that radio is better than television. On the radio, the landscapes and views are far more beautiful than on television. Of course, they may not be as accurate, have as high fidelity to reality, but in some cases, it does not matter.

That idea brings us to an added danger, often referred to as the Dunning–Kruger Effect (Kruger & Dunning, 1999, 2002); see also Dunning–Kruger Effect (2023). This is that the learner may assume that s/he has learned perfectly, when the opposite is true. Let us take our three levels of flight simulator as a concrete example of the kind of situation that a simulation participant might assume. A novice may train thoroughly on the level 1 or level 2 simulator and be able to make perfect take-offs and landings in that simulator. It is not inconceivable that the novice could then assume that s/he has become a master pilot and assume that s/he can already fly big aircraft. That is, however, unlikely in flight training programmes, which are usually tightly controlled. These considerations also hold, mutatis mutandis, in maritime and navigation simulation and debriefing (see, e.g., Sellberg & Wiig, 2020).

However, in other situations, it might present a real problem. In some training situations, learners move up levels. It could be that a participant, having taken part, for example, in a team building simulation or in a doctor–patient simulation, assumes that they have mastered all the necessary skills. They then find themselves in a real situation, assume that they know what the reality is, and then make massive blunders—simply because no debriefing was done, debriefing in which they would learn that their learning journey is just the beginning. This is the kind of situation that ethics requires to be debriefed.

Thus, for most learners, a simulation will not represent the referent situation in its entirety. This means that learners in most simulations participate in a system that bears only superficial or partial resemblance to the real-referent system that they are supposed to be learning. Because learners do not yet know what the referent situation is really like, they will not have the elements (knowledge) needed to detect what things in a simulation do not correspond to the referent system or indeed what things are different from the referent. Learners need to know what things are different from and even what things contradict the referent. Unless this fundamental discrepancy between the simulation and the referent is debriefed adequately, we could be withholding learning at best or teaching something perverse at worst. (More discussion on such issues can be found in much publication on simulation,

e.g., Angelini, 2021; Becu, 2020; Cannon et al., 2009; Crookall et al., 1987; Duke, 2011; Greenblat & Duke, 1981; Peters et al., 1998; Teach, 2018; Wardaszko, 2018. These issues are also of concern in medical simulation, e.g., Massoth et al., 2019.)

6.3.9 Paradox and Dilemma of Simulation: Need for Debriefing

The paradox or dilemma that we must confront calls for some practical theory, as Fred Goodman might have said (Goodman, 1995). The paradox in thinking about simulation as a means to learning and the dilemma with which we are confronted as practitioners are that simulation is not a straight path to learning, indeed it is a roundabout way. We ask learners to leave (the comfort of) their ordinary reality and embark on a journey to another (simulation) world, and a make-believe one at that, and one that then also requires suspension of disbelief, with which some people have problems. They are asked to treat this new (simulation) world as if it was the real (non-simulation) world—quite an ask, really. It can be a new world in which they encounter totally new things, encounter disruption, see themselves in a new light—in other words, a world that can be somewhat disorienting for some, even traumatic (as I have related in Box 7). We then say to them, even insist, that they will learn in this unreal world. We assert that our learners will learn about the real world from this other (simulated) world—maybe contradicting the adage "you learn what you do".

It is often said that we learn more about one's own culture (or country) by visiting a foreign one, but that learning takes time—the learning comes from usually informal debriefing—talking with friends and family, maybe reading about intercultural communication. Then we find (usually unexpectedly) that we cannot go back fully to our old world for it has changed—usually because we have moved on and grown through our experience. Our original country will never be what it once was. Yes, our country (our situation) and we change over time, but relatively slowly, which gives us time to change (adapt). One problem, then, in simulation is our and often participants' expectation that they will change fast and easily. Relatively to our normal everyday speed of change, we expect simulation participants to make massive change at great speed. Here and for all debriefing, we must remember that learning and change are synonymous. We cannot learn without changing; change usually entails learning.

After a while in their new country (simulation), maybe just when the learner is beginning to settle down in their new (simulation) culture, we halt that world, and again ask the learner to embark on another journey. We might be tempted to think that it is merely the previous journey in reverse. However, their strange experience in this unreal (new, becoming familiar) world means that they can never return to where they started. Intercultural travellers will have experienced this somewhat as they move into a new culture, and then return to their home or starting point, never

to feel the same about their home or about themselves. We learn much about our own culture by going to live in another and then return, never to see one's home in the same way. When adaptation (change/learning) happens too fast it can result in what is sometimes known as cultural re-entry or reverse cultural shock. To understand more on cultural adaptation (and thus on what we ask our simulation learners to do), see a wonderful book by my friend, Young Yun Kim (2000).

Thus, the simulation learning path is a roundabout and rather tortuous one, but one that can be made clearer and straighter with some good debriefing. Let me simplify. In most learning paradigms, from classical chalk-and-talk, sit-in-rows and listen-to-teacher formats to learner-centred and experience-based project work, field strips and internships (among others), the basic idea is that we lead the learner from a starting point (of unknowing or not understanding) to the destination (of knowing, understanding and capability or skill competence). The knowing can be knowing that or knowing how (as Gilbert Ryle expressed it). The path is said to be relatively straight, but rarely is.

However, in simulation learning, we complicate that already difficult path with a massive detour, something that some learners may perceive as a clumsy clanger on our part. Learners new to simulation sometimes wonder "what on Earth are we doing this for?", "what has this got to do with my class?" or "I did not come here to play games". For us, simulation practitioners, it is so obvious that "they will learn", that we do not think twice and that we see no need to explain anything about it. This phenomenon of rejection on the part of some potential participants may account in part for what my good friend Danny Saunders calls "the reluctant participant" (Saunders, 1985). Thus, part of the briefing before a simulation with newcomers needs to include sufficient explanation and reassurance about the whole process and about debriefing for the learners to understand the principles at the very outset—to provide pointers about the journey on which learners are to embark.

The paradox (for simulation theorists) or dilemma (for practitioners) is that learners are expecting to enter a "normal", familiar straightforward learning setup, but we 'throw' them into 'this thing' that we call simulation or game. At first sight, this thing may appear rather strange, especially as it may look thoroughly different from (the future participants' idea of) the referent situation that the learners are expected to reach or learn about. The paradox or dilemma is that we take learners on a detour through an essentially imaginary world to help them reach a new referent world, often doing little more than simply hoping that they will survive and learn. This detour is illustrated in Fig. 6.4. I say a "new different world" because the experience of participation and debriefing will have changed the participant, even if only a little, and they will thus contemplate the world through new eyes—see the above discussion on cultural adaptation. As mentioned above, this different world might be experienced as a journey to a strange land with a complete change of scenery and culture. Indeed, this is somewhat similar for some cross-cultural travellers, for whom the return home (re-entry) can be more disorienting than the outward-bound journey.

In Fig. 6.4, the standard, classical path of learning is symbolized by the thick, squiggly, brown line I at the bottom, taking the participant P (bottom left) directly towards their learning goals or referent system R (bottom right), along path H, which is usually taken for granted as straightforward (in the literal sense of the word). In some cases, they do not fully reach their learning goal, partly because they have to jump over, round and through crazy hurdles (usually called exams, and which have little to do with their learning goals, their career path, their individuality or indeed life).

However, in some cases, the referent system may not be possible to experience, for a variety of reasons, for example, the referent system does not exist physically, or it is too dangerous, or too fast or slow, or too big or small. We, thus, substitute a representation of the system, which we can observe or manipulate or experience.

In some cases, the referent system exists, but is configured in such a manner that direct experience for practice is not possible. One example is training in job interview skills (see Appendix). The real situation of a real, live job interview cannot usually be accomplished in a classroom. We, therefore, create a substitute, one that we consider as being sufficiently equivalent for the learner to gain meaningful experience as if it were real—we design and conduct a job-interview simulation+debriefing.

This immediately involves quite a big detour A (blue arch). It is a journey B (orange arrow), along a strange path C, towards and into the simulated job interview

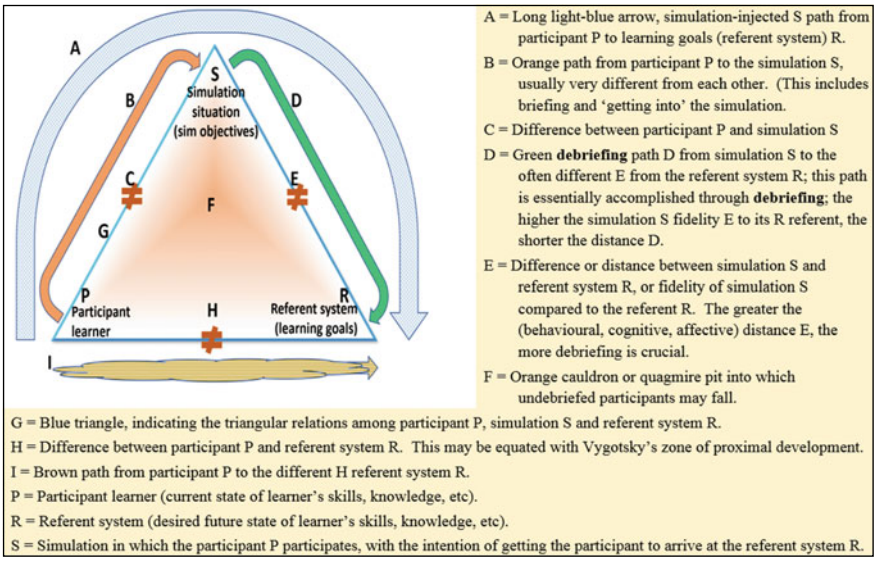


Fig. 6.4 Triangle of relations among participant, simulation and learning goals

S (triangle apex), and then another journey D (green arrow), along another strange path F, from the simulation S to the real job interview R (bottom right), where the student hopes to be offered a real job.

This, by the way, is also an example of how debriefing may help a person to learn from the real situation. The steps, techniques and questions that the learner has learned from a job-interview simulation can subsequently be used to debrief a real interview.

Another example might be negotiating and writing an international agreement for ocean conservation—path A. It is well-nigh impossible for a group of students to be parachuted into some real, high-level negotiations R; first, they do not have the skills; second, they would simply not be allowed. However, a group of learners may be taken through a simulation S in order to experience something of the agreement negotiation and writing process and hone the skills needed for that as well as learn about the knowledge involved (e.g., ocean degradation, acidification and overfishing). Their path D, from simulation S to referent system R, must of course be accomplished through appropriate debriefing. It is clear that the path P-S-R is far longer than the path P-R. It is longer cognitively, emotionally and behaviourally. However, we gamers assume that P-S-R is more effective (especially in the long term) than P-R. I would add that it is more likely to be more effective if proper debriefing is accomplished in S-R leg of the journey. If need be, briefing should explain this.

One purpose of this debriefing is to close the gaps between the simulation S and the referent system R. If no debriefing D is done, the participants might simply remain at the Simulation S stage, and never understand that the referent system R is partly or considerably different. They would come away from the simulation with an inexact, and maybe even dangerous, image of reality.

Another major purpose of debriefing for path D, especially in the learning R of skills of all kinds, such as job-interview skills, is precisely to transform and transfer their simulation performance S into better skills and deeper knowledge in order to operate successfully in reality R, for example in a real job interview R.

We need to have a good reason to drag someone away from everyday reality and plunge them into a strange, alternate-reality, non-real-reality world, and then to snatch them from that simulation reality and thrust them back into the real world. Of course, suspension of disbelief helps, but that suspension requires trust—we ask the participant to trust us to take them on safe travels, a journey that will deliver on our promises of learning the goals that we set. As we all know, trust is easily broken, even inadvertently, and—like Humpty Dumpty—is hard to put back together again. If trust is broken, then disbelief comes tumbling down, and we will have, not reluctance, but refusal to participate. For trust to remain intact and for promises to be kept, debriefing must be accomplished well. Maybe part of the answer to the question that my friend Dick Teach (2018) asks: “Why is learning so difficult to measure when ‘playing’ simulations?” could simply be “because debriefing has been insufficient or improperly conducted”.

6.4 Whither—Goals and Objectives

The word *whither* implies goals or objectives. Much literature has been devoted to the fact that debriefing contributes to learning. I say "fact" because several studies have actually shown that debriefing is indeed an important contributor to learning. However, I would suggest that we (participants, trainers, debriefers, debrief-ethical gamers) do not need hard 'scientific' proof because we witness the effect every time that we do proper debriefing. My students who spontaneously speak aloud at the end of a game and say "ok, let us now go and debrief" do not need any proof. They realize it first-hand through concrete, hands-on, participant-centred experience —"realize" in both senses of the term: understand and make it happen. It is important here to make a short, but crucial detour into objectives.

In life as in simulation, people are concerned with objectives, goals, purposes, aims, targets, intents, wishes, ambitions, missions, intentions and other ends. In simulation, it is useful for both facilitator and participant to distinguish between two types of objectives. These are game or **simulation objectives** and **learning goals**. The difference is crucial. During the simulation, participants are focused on reaching their simulation objectives, such as getting the most points, making an agreement, writing a treaty, finishing the interview, building the best tower or beating the others (individuals, teams). Once the simulation comes to an end, or is paused, then participants can set aside the simulation objectives and focus on learning. Thus, it is helpful to realize that only when the game stops, does the learning start.

When I was Editor of the journal *S&G*, I introduced a new section called *ready-to-use simulations*. Authors would format their game so that readers could copy the materials and run the game. Authors were required to indicate the purpose of their simulation, and to divide the purpose into simulation objectives and learning goals. Some examples of the huge difference between simulation objectives and learning goals are outlined in Table 6.5 and illustrated in Fig. 6.5. This is at the origin of my assertion that "the learning starts when the game stops", or even that "the game stops and then the learning starts".

During the game, participants are focused on playing the game, winning or accomplishing a task—that is, on the game objectives. It is, thus, difficult, while in the thick of the action, for them to step outside of the action and contemplate what they are doing, and impossible for them to think about and share their experience with colleagues. They are hardly aware of learning goals. Thus, very little (explicit, expressible) learning can take place.

It is after the game, during the debriefing, that participants can turn their mind to and focus on the learning goals. However, the debriefing must be accomplished in a deliberate and structured manner. The debriefing must, of course, derive from the game experience, and be centred around and on the participants. It is after all the participants who are doing the learning—not the teacher. This means that debriefing has to include both individual thought and collective sharing. The full sequence of game with observation (and presentation of the game product), followed by

Table 6.5 Examples of the fundamental difference between simulation objectives and learning goals

Simulation objectives (point **S,** Fig. 6.4)		**Learning goals** (point **R**, Fig. 6.4)
These are the specific **end-game criteria**; things that determine when the simulation ends, such as winning, getting an agreement, accomplishing a task, solving a problem and so on. **The game ends when its objectives are reached**.		These are the things that the participant, the game designer or facilitator would like participants to have learned by the time they have finished the (final) debriefing. These are ideal things in the referent situation that the participants are supposed to understand or for which they are supposed to perform better or optimally. **The learning goals start when the game ends**.
CockleSim	Write a roadmap to guide people in their behaviour towards climate change and the ocean.	Encourage people to work collaboratively to become ocean-climate-coast-literate, to help other people to become literate in the ocean-climate-coast nexus, in other words, to learn about the ocean, coasts and climate system, to behave in a responsible manner in that system and to realize the importance of passing on their knowledge and skills to others.
Chess	Capture the king by checkmate.	Strategy, thinking skills, concentration, operating under stress and several more.
Monopoly	Become owner of all the property, i.e., bankrupt all the other players.	Learn about monopolistic strategies and mindsets, and how these operate in society. (If the game is used to teach students, then it needs to be well-debriefed).
Barnga	Win a game of cards.	Become a better cross-cultural communicator and understand the roots of intercultural misunderstanding.
Fishbanks	Become the richest fisher by the time the end is announced, usually the ninth or tenth round.	Understand the tragedy of the commons, the limits to growth, the importance of trust, the need for cooperation, carrying capacity, complexity of balancing resources and allowing their regeneration and several other factors in fish stock and natural resource sustainability.
PROFFIteROLE	Hand over medication to a patient.	Improve pharmacist professional communication and procedures for medication delivery.
Towers	Be the team to build the best tower.	Understand, practice and develop teamwork skills.
Me the slow learner	Accomplish simple tasks under pressure, while handicapped and in an oppressive atmosphere.	Understand the difficulties of learning in general, and the stress of being a beginner in learning a skill.
Picture stories	In revolving groups, build a story from picture cards.	Learn creative story-making, vocabulary, sentence structure and past tense.

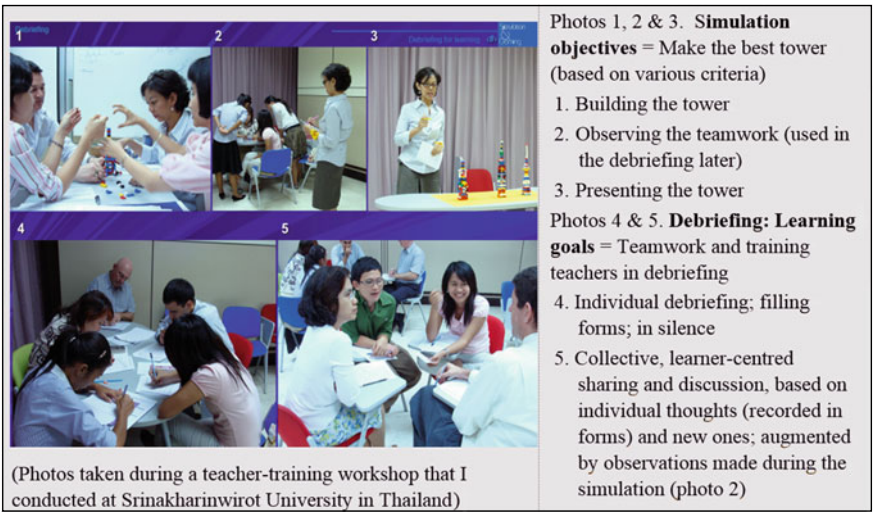


Fig. 6.5 Learner-centred debrief and distinction between simulation objectives and learning goals

individual and group debriefs, showing the distinction between simulation objectives and learning goals, is illustrated in the sequence of photos in Fig. 6.5.

If you keep those two things, simulation objectives and learning goals, clearly separated in your mind, it will help you facilitate both the simulation and the debriefing. Be aware that many ready-packaged, published or online simulations do not make that distinction (clearly enough). If you confuse the two, you are more likely to fall into Kriz's lack of learning and ethics trap.

6.5 When and How Many—Time and Sequence

Time (*When*) and place (*Where*) are closely related, and in practice, inseparable. Debriefing can take place pretty well anytime and anywhere. In fact, humans spend much of their life debriefing events and concerns. We debrief with a friend over a morning coffee about our concerns that our child is having a hard time at school. We may debrief with family or a psychology consultant after the loss of a loved one. During an evening stroll along the beach, we share our excitement about a good exam result or our worries about an upcoming job interview.

Those types of impromptu, unstructured debriefing moments occur mostly anytime and anywhere that is convenient. The more formal experiential learning events, such as games and simulation, are programmed to happen at specific times and in designated places and spaces. This, of course, determines the time framework for debriefing.

The timing of debriefing varies according to several criteria, among which are the simulation criteria and the learning criteria. Other factors here include number and experience of participants, total length of the simulation event, nature of tasks to be accomplished and (unfortunately) the time given to you by the school or university timetabling or by the company, which often thinks in terms of loss of work, instead of skills to be gained. For more discussion, see Secheresse et al. (2016).

6.5.1 Simple Sequence

The standard, and rather simple, way of looking at the steps usually follows the format illustrated in Fig. 6.6. Notice that the arrow head (end point or final goal) is the debrief, not the game. The debrief here is composed of one or more activities—more details in the section *How*.

Fig. 6.6 Simple, standard sequence

6.5.2 Complex Sequence—Several In-Game Debriefs

However, especially in larger-scale simulations, it is useful to conduct a debrief session at various strategic points throughout the simulation. Debriefing that takes place during a game is usually called in-game debriefing. This is particularly beneficial in simulations that last an hour or more. In-game debriefing is required (ethically mandatory) in large-scale and whole-semester simulations. In my semester-long simulations, I usually have a short (20–30 m) in-sim debrief once a week or a fortnight, and sometimes a more substantial in-sim debrief one half or two thirds the way along. Of course, the main debrief must still be conducted at the end of the simulation, often along with a feedback session. You can also get feedback on your own debriefing skills.

Some large-scale simulations actually have their own in-built debriefing as part of the basic structure, requiring individuals or groups to discuss a joint production. An example would be when groups negotiate and write a treaty or when they have to design materials for and get feedback from other groups. (One example is described in Crookall, 1991.) Note that this in-built debriefing may not capture all the learning goals, and a more in-depth (midway and) final debrief will be necessary. Thus, in your design phase, you will need to design the debriefing episodes

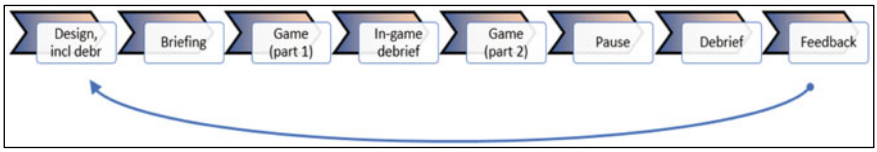


Fig. 6.7 Timing or sequencing of debriefing episodes during a simulation—in-simulation debriefing

along with the game. You cannot tack on in-game debriefs at the end! This is illustrated in Fig. 6.7. The blue arrow indicates that feedback on the whole process can help improve the design.

Table 6.6 provides a summary of the sequencing for debriefings during a simulation, from its inception till its conclusion. As you can see, the question of debriefing occurs in several steps along the course of a simulation. Of course, the main debrief must be conducted at the end of the simulation, often along with a feedback session. Thus, in your design phase, you will need to design the debriefing episodes along with the game. You cannot add on in-game debriefs at the end! For further discussion on some of the dimensions and issues involved in this type of debrief woven, as it were, into the fabric of the simulation itself, the article by Schwägele et al. (2021) is highly recommended.

Table 6.6 Sequencing for debriefing over the course of a simulation

Step	What to do
Design	Debriefing needs to be designed and built in from the very start of the game design.
Briefing	Briefing is an important part of any game. Participants need to know the rules, what may happen, what to do if rules are transgressed, what risks they face, and several other aspects related to their upcoming participation. It is important here to mention that, at various points along the way and/or at the end, they will participate in a debriefing. It is also useful, especially for first-time participants, to outline for them the rationale and function of games and debriefs, perhaps using Kolb's experiential learning cycle.
Game	The usual pattern is that the debriefing follows after the game itself. (See Fig. 6.6).
In-game debrief	However, it is often a good idea to stop the game for a while and organize a short debrief and then continue with the game proper. This is particularly suited to longer games, in which maybe some form of negotiation or research is involved. Material from in-game debriefing can then be fed into the next stage of the game and help participants to focus more clearly. (See Fig. 6.7).
Game 1, 2, …	An alternative pattern is to run several games, one after the other, each one with its own pause and debrief. Debriefing 1 can then feed into Game 2, and so on. (See Fig. 6.8).

(continued)

Table 6.6 (continued)

Step	What to do
Pause	A pause at the end of the game proper is usually a good idea, especially if the game has involved complex issues, raised emotional levels or involved high energy. This allows participants to recover from frayed nerves and tiredness. It also allows participants to de-role, to come out of role and slip back into their ordinary everyday roles. The pause can be anything from about 10 min to a week.
Debrief	The (main) debrief takes place after the game has ended. In terms of timing, the debrief can take place as early as 10 min after the end of play. This works well for games that focus on cognitive content (such as a physics game). If the game has generated strong emotions, it is usually a good idea to wait an hour, a day or even a week. Some participants may be more emotionally moved than others. You need to keep an eye on participants and ask those who appear emotionally moved or even upset to come and see you and let the other people leave. Then start a conversation by saying something like "you seem a little upset; please tell me more". Then it is your job to listen; you cannot counter; you cannot explain that their emotions are wrong. Once they stop talking, express your concern, and say that you hope that they will express those emotions to the other participants during the debrief later because it is quite possible that other people will have experienced similar emotions, without maybe showing it.
Feedback	An assessment of the whole process can be done in a feedback session or using a feedback form. It is usually better to get feedback outside the debrief. The debrief is for people to process their experience, not to evaluate the game or the way it was facilitated or debriefed. Feedback can then be fed into revision of the game. In addition, you can obtain feedback on your own debriefing skills (see Coggins et al., 2022).
Research	Beyond the simulation itself, if you decide to conduct research on a simulation or on some aspect of participation in a simulation or of outcomes from a simulation, you will also need to have collected data that relates in some way to the debriefing that you did. The research can be about almost anything, such as the effectiveness of simulation, the effectiveness of a particular simulation, the relationship between participants' expectations at the start and their perceived gains (or losses) at the end, the social-psychological challenges of participation in certain types of simulation, the perception of reflecting reality or their impressions of learning. That short list does not, of course, do justice to the immense variety of research topics done and to be done; many more will be found in the research literature (some referenced in the Bibliography). However, one thing that much research fails to do is to take into consideration and account for the debriefing that is done. It is quite inadequate in any simulation research endeavour to collect data about, for example, people's impressions of the simulation without also asking about the debriefing. In any research report (e.g., an article in a journal or a document on the internet), it is a serious omission to give no details about the debriefing materials and process used. It is inadequate and unethical in any research on simulation for learning or understanding not to provide proper debriefing that forms an integral part of the simulation. (For more discussion on research and possible research structures that take debriefing fully into account, see the Sect. 6.11.7 Research (below) and also the *Appendix—Possible Structures for Research on Debriefing*, in Crookall, 2010a, 2010b).

6.5.3 Several Linked Games, with Debrief After Each

I have also used a series of different (but similar games) one after the other. The aim is to teach a set of complex skills at different stages of complexity or fidelity, introducing new notions or skill sets with each game. I have used this successfully on a semester-long course on teamwork for master's students. Of course, each game must be debriefed. However, in a pattern like the one depicted in Fig. 6.8, the "Debrief 3" can be incorporated into the "Overall debrief" if this makes sense in terms of game content and learning goals. The design trick is to set up a system in which the debriefing results of one game feed into the next game. Background discussion on reflecting in and back on experience will be found, for example, in Schön (1990), Kolb (2015), Cattaneo and Motta (2021).

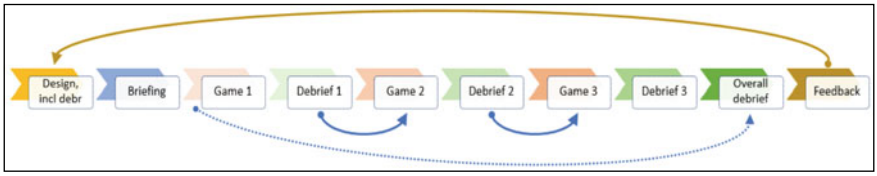


Fig. 6.8 Alternating games and debriefs, each debrief feeding into the next game

Length in time for debriefing. I have participated in games, after which the debriefing session was far too short, with the outcome being a feeling of frustration at having missed out on what could have been some important learning. Debriefing must be given the time that it needs for all participants to feel satisfied with the whole process. One problem with this is that some will want to finish before others. Generally, this is a small problem. It can be solved by letting people go and get a coffee, continue to discuss informally, which may sometimes give rise to a discussion on aspects related to the game that were not included in the debriefing.

It is difficult to establish even a general rule about length of time for debriefing. A rough guide, especially if you lack any other indication, would be to allow about as much time for debriefing as for the simulation itself. Thus, a two-hour game session would include one hour of game and one hour of debrief. For the second and subsequent runs of your simulation, you can easily adjust down or up. My experience is that as we get to know the simulation and its debriefing, the latter gets longer. We also tend to recognize areas that need more debriefing and thus increase the number of debriefing activities. An outline of possible factors that might influence your debrief times is provided in Table 6.7.

If your preferred style of debriefing is to bring all participants back together into a teacher-centred class, with you controlling rows of students neatly strung out behind lines of desks before you, the timing for the end of your debriefing session is not a problem—you control and decide. If, on the other hand, your predilection is to give control to participants in learner-centred debriefing groups, then you solve several problems related to the need for self-determined debriefing (discussed

Table 6.7 Factors influencing length of debriefing

Factor	Possible effects of various factors on length of debriefing
Proportion to game length	In your game design stage, it is useful to think initially in terms of allocating about 40–60% of the overall time to the debrief. It is fairly common for debriefing to take as much time as the game. It is not uncommon for the debrief to take three or four times the game time (see example in Boxes 7 and 8).
Type of game	The type of game may influence the debriefing time. Often the greater the complexity of issues, components and interactions in a simulation, the longer it is likely to take to debrief.
Participants	The characteristics of the participants will influence length of debriefing. Variables include age, maturity, prior knowledge, shyness, game experience, educational level, openness of mind, discussion skill level, prior experience of games and of debriefing, and several others.
Debriefing format/structure	The format or structure of the debriefing will influence its length. For example, a teacher-centred debriefing may last as long as the teacher decides or intuits as its proceeds. A participant-centred debriefing will last as long as they decide, which in turn depends somewhat on the participant's characteristics (see above).
The participatory experience	The experience of participants will influence the length of debriefing. If they have been deeply and emotionally involved, the debriefing is likely to last longer. Spare time at the end should always be made in case some participants wish to explore beyond the agreed time.
Over time (improvised)	Given that it is often difficult to know how long the debriefing or a segment of debriefing will take, it is important to plan for extra time. This can be an extension to the originally agreed time, or it can be organized the next day or in a week. If a week, then it is also a good idea to ask participants to do some interim work.
Extra time (planned)	In the first session (game and debrief) that I run with a group; I usually limit the time and finish the debriefing at a fixed time. In subsequent sessions, after participants have learnt in the first session what they have to do in a small-group debriefing, I start the debriefing in class and ask them to take extra time and finish it for homework. Sometimes the debrief can spread over several time periods (e.g., after class, next class, writing a portfolio—see next section).

elsewhere), but you create the potential problem of coordination of groups to end their small-group session at (more or less) the same time. Possible solutions to this fairly innocuous problem are discussed in the section on How.

6.5.4 Series of Debriefing Activities

It is customary to organize one single debriefing session. However, over the years, I have lengthened my debriefings into several varied activities, each one building on the previous, depending on the course, the participants, the learning goals, the type

of simulation, and other factors. For example, I tend to use the following sequence of four main debriefing activities: individual filling in forms in silence, sharing in small-group discussions, in class and then out of class, presentations linking debriefing to readings and (end-of-semester) portfolio. More details are provided in the section *How*.

6.6 Where—Place

Debriefing can take place almost anywhere. As mentioned above, we can debrief in a quiet café, in a garden and pretty well anywhere that is conducive to listening and thoughtful talk. These aspects are also important for more formal debriefing, so the place that you choose to conduct simulation debriefing should be quiet and peaceful, even though some noisy discussion does arise in small-group debriefing. Sometimes participants themselves will request to go to another place, see Fig. 6.9. If you are lucky enough to have nearby empty classrooms free, it is beneficial to spread out the debriefing groups across rooms; I found this particularly beneficial.

Of course, participants need to be comfortable. It is sometimes a good idea to facilitate the debriefing in an area that is different from where the game was run. This helps to mark a clear break from an area that may continue to have lingering emotional connotations, and maybe to dampen free expressing during the debrief. The game and debriefing can also take place online, using internet tools such as Google Forms and Discord.

I remember a place where participants requested to be outside. This happened in one of my workshops. I had been invited by my long-time and dear friend, the late Laurent Mermet, professor at AgroParis Tech, France, to attend a week seminar on environmental gaming. My task was to emphasize the importance of debriefing by running a workshop on the topic. The seminar was held in a wonderful castle - Château de Cerisy-La-Salle, built around 1620 – see the picture here (from https://en.normandie-tourisme.fr/museums-and-heritage-sites/chateau-de-cerisy-la-salle/).

I ran the workshop in the converted farm buildings in the background (on the left of the picture). The game involved a moderate amount of stress. As we were preparing for the debrief, some participants came up to me and asked if they could do their debriefing groupwork outside on the lawn. The weather was marvellous and so each debriefing group found a small patch of lawn to sit down and share their game experience. At the end, we held a plenary where each group shared their debriefing summary. They found that debriefing outside, away from other groups – and from me! – was particularly conducive to listening and discussion.

Fig. 6.9 Château de Cerisy-La-Salle

6.7 With What—Instrument

Related to place are the various instruments that you may use as debrief aides. Just as many trainings and classes use audio-visual and computer aides to 'deliver' material, debriefing can and should make use of aides where it enhances learning. As mentioned, debriefing can make use of electronic and internet tools. I discuss two here: video camera recordings and graphs generated from simulation decisions.

Video-aided debriefing (VAD). Probably, the most useful instrument to use for some debriefing is a video recording (camera) of some kind, in what is called video-aided or -assisted debriefing (VAD). The decision to use it and its method of use depend of course on various factors, such as the learning goals, participants, physical circumstance and preparation. The general pattern is that the participant is recorded during the simulation, and then the film is used to help with debriefing. As a rather general rule, video recording is used mostly in psycho-social-motor areas, such as debriefing a simulation for learning to improve body language in job interviews, pharmacy–patient encounters, intercultural interaction, doctor–patient interaction, teambuilding, language learning or manipulating a machine (car, medical apparatus, navigation, etc.).

The use of video raises ethical issues, which you need to resolve before you consider its use. You also need to come to an agreement with your trainees about how any recording is used and stored. In my job-interview skills training, for example, students use their own smartphone to record their simulated interview; the phone is held by a colleague student in the role of coach. I tell students that they will never be asked to show the recording in class, and that the only two people who will see the film are they and their coach, and for debriefing purposes. They are free, however, to show the film in class if they so wish, but the initiative must come from them. They get a simple form to fill in to help them analyse the film. Most students report that the film was useful in their own private, coach-facilitated, debriefing. It is particularly useful for them to see what they are 'really like', something that they could never get from in-class feedback only, either from their peers or from me.

> Debriefing augmented with information coming from a video … is believed to be even more objective, effective, and educational. (van Dalen et al., 2021)

> VAD was commonly used to enhance learning by showing what actually happened rather than talking about what was thought to have happened. There was a sense that video was particularly helpful in providing objective perceptions of time, space, and use of equipment. (Krogh et al., 2015)

At the end of the job-interview course, students must compile a portfolio. This is a kind of extended debrief and requires that they go back over their simulation experience, their video films and their debriefs—and relate it all to the literature on job interviews. It contains all their log sheets for classes, interviews and debriefs, the notes that their peers made about them during in-class and at-home debriefs, and stills extracted from their films, which they analyse for body language, and which

usually show much improvement from the first to the second simulated interview. I suggest to students that they keep their portfolio after the course and go over it before a real job interview as it can be a reminder to them of certain things to which they need to pay attention during their real interview. More information on this is in the Appendix about job-interview debriefing.

Graphs. Some of the simulations that I have run allow for the collection of data as the simulation proceeds. For example, *Fishbanks*, designed by my talented friend, Dennis Meadows, allows you to collect data about participants' decisions (e.g., N° of boats to send to the deep sea) and about the results of those decisions (e.g., regeneration of coastal fish). The teamwork-training game, *Towers*, can be configured to allow performance evaluations for various dimensions of teamwork, which can then be converted into graphs. See examples in Fig. 6.10, with more explanation in the Appendix.

Other classic games allow you to collect participant-decision data. The *NASA Game* specifically requires participants to record decisions, and then to calculate results at the end, before debriefing. My dear friend, the late Richard Powers, designed the *Commons Game* (Powers, 1992), which also allows this. More recently, the natural resource management game, *ReHab*, generates data that can be used in debriefing (Le Page et al., 2014, 2016). Some complex participatory simulations, sometimes using agent-based modelling, are able to do this (e.g., Becu, 2020; Bommel, 2020).

These kinds of graphs are especially useful for participants to use during their debriefing episodes, either in-class or at-home. Students are able to base their debriefing presentations and portfolios more easily and clearly on concrete and meaningful data that reflects their participation during the simulation than on unreliable recollection of the simulation and debriefing discussions.

Of course, these instruments need to be designed and tested well before you run the simulation. They also need to be adapted for each run of a game, usually because the number of participants and groups changes from run to run. Once a game is under way, you have no time even to tweak a bugging program (e.g., an Excel file).

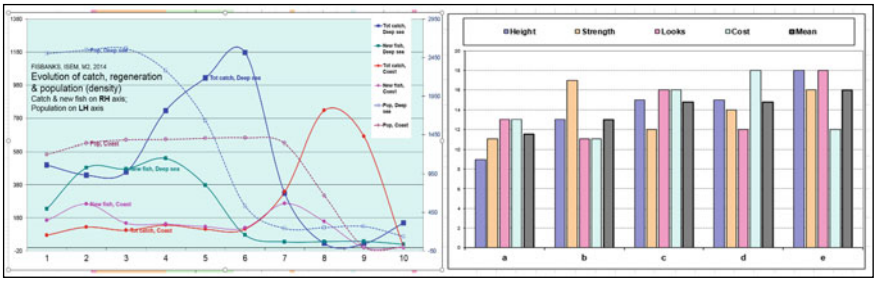


Fig. 6.10 *Graphs used for debriefing*—Fishbanks *and* Towers

Some games, mostly available online, will also display graphs about participant performance and progress. See the truly excellent simulators En-ROADS and C-ROADS, which provide real-time graphical feedback (Rooney-Varga et al., 2018, 2020, 2021; Sterman et al., 2015). However, in games, graphs are usually destined for use during the game. Little if any guidance is provided on using them for a debrief; that is because no guidance is provided for any debrief! What a marvellous opportunity for online game developers, if only they would take the trouble to seize it!

6.8 Whose—Ownership

Whose debriefing is it? To whom does a debrief belong? This is a question that is not often asked, and yet answers can guide us in our decisions for *How*—how a debriefing is to be facilitated. All too often, I have witnessed debriefings in which, at the end of the game, the facilitator asks everyone to "return to their places", usually returning chairs and desks back into rows, with everyone facing the facilitator, actually a teacher. In that short request "return to your places", the teacher has (re-)established control and ownership of the situation, its dynamic, its content and its communication—an efficient and sneaky way to kill the desire in participants to share with their peers their experience shared with their peers.

The idea of ownership has been a thorny issue of debate in educational circles for some time. This is not the place to attempt any resolution of the issue. However, for the moment, it may be worth drawing a rough parallel between the continuum of participant–teacher ownership and what I (somewhat loosely) call 'participant-centred' and 'teacher-focused' facilitation. This reflects Christopher and Smith's (1987) open and closed facilitation approaches. Leigh and Spindler (2004) speak of "traditional teaching and experiential facilitation", which "require quite different, and at times contradictory, skills and processes". My friend Elyssebeth Leigh has done much valuable work to encourage gamers to work within the participant paradigm, respecting participants' experience and pathway desires.

In debriefing as in games, ownership of developments should be with the participants. It is, after all, the participants who (are supposed to) do the learning. In some cases, the teacher can withdraw completely, although I would be careful suggesting that to colleagues in a dyed-in-the-wool conservative educational establishment, which most universities and many schools (still) are—almost by definition. In those establishments, learners generally have little (if any) say in what happens. However, it can be invigorating and liberating to experiment without asking authorities because learners will appreciate any sensible, learner-oriented, non-traditional action that you take to help them learn. My early experiment with a teacher-less class has encouraged me throughout my career—see Box 11.

Box 11. My best class, for which I was absent

Many years ago, I taught a course in a law school. Every week, I ran a small environmental rights role-play with some 15 master's students. One week I told them "next week, I cannot be here as I will attend a conference; would you like to try an experiment?". The, I must admit, somewhat hesitant answer was "ok". I explained that the procedure (read roles + game + debrief) was the same as they had been doing in previous classes with me present. I selected two students to whom I gave the materials, with a few extra procedural instructions. Two weeks later, I returned to class, with the students appearing to be pleased. I asked how it went. Their answer was "we never worked so hard before in class". I sometimes say that this was the best class that I ever taught. What this shows is that, with a moderate amount of guidance and preparation, responsible learners are perfectly able to take ownership of their learning, to make their own decisions about what to do for their learning and, crucially, to organize their own debriefing.

I must admit that this would have been impossible in some, more austere and conservatively-ruled, universities. I was lucky to have been able to experiment without being harassed by whips. In that sense, France provided me with a platform to experiment freely, an opportunity for which I am grateful. It must be said that, to experiment in that way, you need to establish a climate of trust with the university; they need to know that you are doing your job well and that the students are satisfied. However, I have the impression that French university authorities, in recent years, have been trying to clamp down gently on rogue facilitators.

That, Box 11, is not just to tell you an encouraging story. It is to emphasize that debriefing must be a moment where, even more than in the simulation, the learners are (almost) fully in charge of the nitty-gritty content, and that they must do it among themselves, for themselves and with their own expression. That is why I like to run debriefing sessions with participants in small groups working independently and in parallel, and then also to ask them to debrief partially or fully outside class, for homework. On some occasions, sometimes I sit away from a debriefing group and listen in discretely, and then move to another group; on others, I actually leave the room for a while, something which some students assured me that they had not even noticed as they were so engaged in their small-group debriefing. (See also Sect. 6.6. Place.)

After learner-centred debriefs or out-of-class debriefs, students still have to prepare and deliver a plenary presentation on their simulation+debriefing work. It is during such presentations that other students (groups) and I are able to comment, correct and criticize. This is illustrated in Fig. 6.5 (in the section on *Whither*) and discussed in more depth later, under *How*. The fact that my students know that the debriefing belongs to them may be behind their clear eagerness to debrief. Detailed discussions of learner-centred debriefing are offered by Cheng et al. (2016), and Kikkawa et al. (2021) provide useful insight into facilitator-guided and self-guided debriefing.

Thus, ownership really matters. The debriefer's stance on or approach to debriefing ownership will determine several aspects of debriefing. This is an important dimension of debriefing that you need to decide at the outset, in the

design stage, because that is there where you will design your debriefing format and materials. It also impacts simple, but important things like room layout, time given to debriefing, place and organization of debriefing. Some of these things are discussed in the other sections here. Further discussion on ownership is to be found in: (a) 'Trust and ownership' (in section 6.11.4 Factors) and (b) 'In-class presentation' (in Table 6.8).

6.9 Who/Whom—People

The number of different roles involved in debriefing is surprisingly large. It is worth reviewing these briefly. You will notice that each of the people concerned plays a variety of roles and occupies a variety of functions.

- **Participants** are, of course, central. They may step into a variety of shoes over the time period concerned by a given debriefing. First, they are ordinary people with a host of pastimes, responsibilities and roles in their lives. Second, they walk into a training centre, school or university and become learners. Third, they start their simulation journey, the blue arrow in Fig. 6.4, and learn to take on some kind of more or less well-defined simulation role, given by the simulation rules or scenario. Fourth, they continue as a learner on their blue-arrow (debriefing) journey towards outside reality (their learning goal). Fifth, they need to become ordinary people again. During this journey, they may also have worn one or more other hats, such as observer, debriefer, discussant, listener, coach, note-taker and presenter.
- **Observers** are extremely useful, on at least two levels. The first time that I meet a group (e.g., a class) who has had little or no experience of simulation, I spend quite a bit of time explaining in a mini-lecture what it is, including an explanation of why debriefing is important, and showing Kolb's learning cycle. Then I ask for volunteers to participate in the simulation. Sometimes several members are hesitant and prefer not to play. I tell them that it is perfectly OK to decline to play, but that I would appreciate them being observers. I ask for a few things (two or three per person) that they would like to observe, and ask then to make notes during play. The second time that we play, everyone wants to participate; almost no one wants to observe. However, I explain that observers are important to provide feedback during debriefing, that they can really help their peers to learn from their observations and therefore that everyone needs to take their turn to observe and provide feedback—and thus everyone contributes to the learning of everyone else. This is of course easier in a course with a simulation every week. Some of the instruments in the Appendix contain notes for observers or forms with the role of observer.

- **Facilitators** too may take on a variety of roles. These depend on their past experience, their approach or philosophy of learning, social and intuitional expectations, and so on. Roles may include simulation facilitator, debriefing facilitator (debriefer), simulation participant (e.g., taking on a role briefly for demonstration purposes), observer, listener, teacher, trainer, encourager, evaluator, grade giver and others. Less centrally involved people might include game designers, administrators, simulation technicians, conference presenters, trainers, authors and so on.
- **Co-debriefing**. You may wish to debrief with the help of a colleague—or co-debrief. This needs careful preparation, sensitivity to your co-debriefer as well as to participants, flexibility, adaptability and knowing when to be a good listener. It also requires a high level of trust and respect between you and your co-debriefer. I have enjoyed the few sessions in which I co-debriefed, and I learned much in the process. I remember one session with Sandy Fowler, with whom it was always such a delight to work; it was a pre-conference workshop in which we were training cross-cultural trainers, and I know that I could not have done it without Sandy. Another enriching experience was with my friend Alain Percivalle, when we ran a session on debriefing for medical personnel, at the Faculty of Medicine, University Côte d'Azur. As we had differing approaches to debriefing, we took advantage of this to illustrate to trainees that no one single way exists to debrief and to give them a broader repertoire of techniques. With three friends, Beth Tipton, Elyssebeth Leigh and Willy Kriz, at the 2015 ISAGA conference (Kyoto, Japan) we jointly ran a five-hour workshop on debriefing. I learned much from my co-facilitators. See Tipton et al. (2016). One advantage of co-debriefing is that you can debrief yourselves after the debriefing session with participants. You will find more discussion and useful advice in Cheng et al. (2015) and Goldsworthy et al. (2022).

6.10 Which/Whether—Choice of Structure

Several types of debriefing structures (or formats) have been developed over the years.

- Early structures, mentioned in Thiagarajan (1992), for debriefing include these phases suggested by Gaw (1979): Experiencing; Sharing; Interpreting; Generalizing; Applying; Processing.
- Ruben and Lederman (1982) suggest questions related to: Validity; Reliability; Utility.
- Morry van Ments (1999), a pillar for the British Association SAGSET, used: Establishing the facts; Analysing the causes of behaviour; Planning action.

- Thiagarajan (1995) suggested six phases: How do you feel? What happened? What did you learn? How does this relate to the real world? What if? What next? This was based on an earlier plan of seven steps.

Other types of debriefing, such as CISD, PTSD or security incident fact debrief, use different steps or phases.

Much writing on debriefing offers a structure of some kind. In recent years, medical simulation experts have developed a number of formats or structures. Figure 6.11 outlines a number of medical simulation training debriefing structures, showing their similarities. Indeed, many seemingly different ways of debriefing have much in common, which is hardly surprising, given that they all share a common overall purpose. It is probably their underlying similarity that is of most interest, rather than the more superficial differences. Other structures and formats exist, and you will discover them in other writings on debriefing.

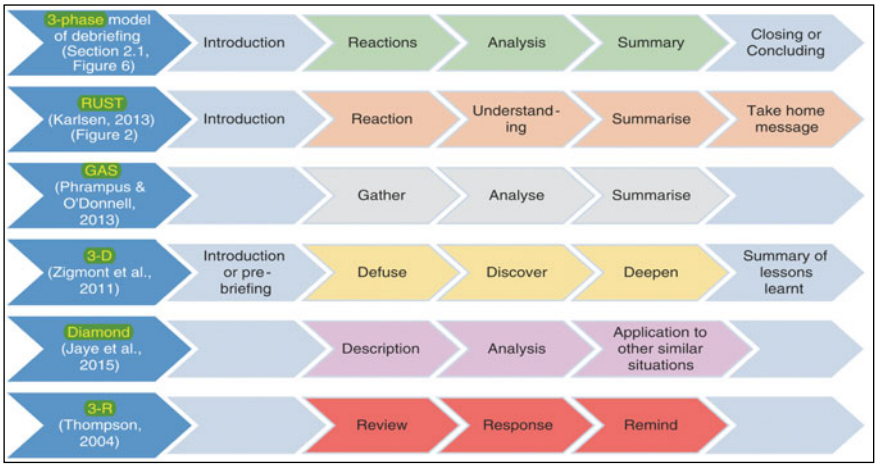


Fig. 6.11 Similarities among a number of debriefing structures (from Oriot & Alinier, 2018)

A major choice that you will have to make is to opt either for a facilitator-focused debrief or for a participant-centred debrief, as discussed in *Whose* above. This choice is more or less independent of the structure that you use. You can also, of course, choose to start the debrief in participant-centred mode, and end as teacher-focused; I would, in most cases, do it in that order. An interesting way to approach debriefing is outlined in Zhang et al. (2018). For a useful overview of debriefing, see Sawyer et al. (2016), Oriot and Alinier (2018) and Secheresse et al. (2021).

6.11 How—Way/Manner

No doubt, a hundred or so ways to debrief have been invented and used. One thing for sure is that no one single way of debriefing is the best. However, one could argue that debriefing really starts with the briefing (introducing and setting up the game session).

6.11.1 Briefing

Before the simulation or series of simulations, I usually tell future participants about simulation in general and about the particular simulation in which they will participate. I do this either by ad-libbing or with a slide presentation. I usually go over some of the main aspects of simulation, its purposes and advantages, its difficulties and demands, especially on participants (such as the need for full participation and for responsible and respectful behaviour) and the imperative of debriefing. I usually show Kolb's Experiential Learning Cycle diagram, and explain how simulation and debriefing mesh with his ideas. Students understand and can relate to that fairly easily, especially as they recognize it as being different from their usual class fare and in line with professional matters. When they come to their first participation in a simulation, it is then not completely disorienting.

I explain in a nutshell that the debrief after the game helps people to process their experience, especially if it has been stressful or emotional, so that they gain insight and learning, and can then move on to manage their life in a more effective manner. The mention of stress and emotion usually catches their attention as it is rarely talked about within the hallowed walls of a university. I reassure them by saying that emotion in a university is taboo, but that expressing and talking about emotion makes them more human, and that it can lead to a liberating effect. I tell them that the debrief is the most important part of the whole exercise. Most students seem to understand the basics with relative ease, which is less the case with a group of teachers. Students take to games more readily than some teachers, even teachers who use games!

In addition to aspects of simulation in general, it is important to tell participants some specifics about the upcoming simulation, such as the learning goals, the game objectives (end-game criteria), the rules, the scoring system, the role of the observers, the importance of the debriefing. I stop and ask if they have questions; I ask if anyone wants to observe instead of participate. I put people in groups or ask them to find their own groups, sometimes with specific criteria (such as group size, gender balance, cultural balance).

In some cases, I ask students to take part in a short and light-hearted *briefing simulation*, designed to prepare them for the upcoming larger and more engaging simulations. A briefing simulation is not designed to teach any content, but it provides a first, hands-on experience of the simulation cycle, of participation and of debriefing. Participants familiarize themselves with fundamental aspects of

simulation and they are able to taste 'life in a simulation' without the pressure of also having to learn something. This usually has a positive effect on the subsequent simulations. It takes the idea of simulation out of the dark unknown, and places it into known practice. It is what I call "learning to be" in a simulation. In addition, a number of factors will influence how you run your debriefing.

6.11.2 Ownership

I return here to the notion of ownership. Your stance on this will, in my view, have a profound impact on how the debrief goes, what the participants get out of it in terms of learning, self-fulfilment or well-being and satisfaction. As I discussed above, a stance in which a debrief is in fact accomplished with the teacher claiming their self-ordained right to control proceedings is not, in my view, going to allow the learners to accomplish their learning goals very effectively. Under these circumstances, I would suggest that teachers either have to admit defeat and accept that learning was minimal or have to be economical in their claims to learning.

Ownership is a question of adopting the right mindset. I have rarely felt comfortable adopting a stance of "I will now debrief you" and "this is what you have or should have learned". I, therefore, push myself to adopt a mindset of relinquishing control over most of the debriefing. What I do retain is guidance over procedural matters, and even then, if participants say they wish to pursue or to cut short a debrief I do my best to take that into account, for example, by prolonging a debrief to the following class or letting the students leave class early.

6.11.3 Time

Debriefing needs time.

> Effective debriefing also requires time. This time has to be included in the planning of any experience-based programme. Too often it is the debriefing phase of a programme [that] is cancelled or considerably shortened … (Pearson & Smith, 1985)

On several occasions, I have been asked to shorten a debriefing session, even by gamers who supposedly know that debriefing needs time. In most cases, debriefing time is incompressible. Lack of time is probably one of your major obstacles in facilitating and game and debriefing it. This, of course, raises ethical issues in relation to your participants. Is it better to do a rushed, superficial debrief, and leave participants frustrated and taking away the wrong message, or simply to refuse to run the simulation? That is a judgement call that you may find that you have to make in each case that you are restricted in time. Remember too that if you go ahead (motivated by your own eagerness or under pressure from a workshop or conference organizer), the likely fallout on you from an inadequate debrief is that you will be seen as or felt to be a poor facilitator. In addition, an inadequate debrief tends to bring the simulation/gaming profession into disrepute.

In regard to amount of time, opinions and practices differ. They seem to vary from at least half the duration of the game to twice the length of the simulation. It is impossible to give a more precise estimate here. Each event is unique and will require a minimal length of time to debrief. A 3-month internship will not require 3 months to debrief; a 10-minute game may need half an hour to debrief. Remember the adage that a game is ideally a means of providing substance to debrief.

6.11.4 Factors

A wide range of factors may influence the way you debrief, in general or in any particular instance. It is probably wise to focus on just a few factors during any given debrief session, and let the others "take care of themselves". Possible factors include:

Learning goals. If the learning goals of your participants are behavioural or performative, such as job-interview skills, then you may wish to run several short debriefs during a sequence of simulations, each one building on the previous (as in Sect. 6.5.3 above). Examples are included in the appendix. If the learning goals include understanding complex systems, such as the relationship between natural resource management and the human tendency towards greed and overshoot, then you may wish to include an occasional taking stock feedback during the game, and then a series of longer debriefing activities after (as in Sect. 6.5.2 above). Examples are included in the appendix. If the learning goal is for participants to get to know each other (warm-up exercise), then an informal chat at the end may be sufficient.

The learning goals need to be established and the debriefing protocol and materials need to be designed and built as part of the overall game design, not something tacked on as an afterthought. The learning goals need to be reflected clearly in the debriefing protocol and materials. Thus, they cannot be scrambled as the simulation nears the end.

Prior simulation experience and reluctant participants. It always strikes me as somewhat odd that some people do not like to participate in simulation, which usually happens when they are confronted with such an activity for the first time. So, it behoves me to remember an early article by my dear friend, Danny Saunders, entitled *Reluctant participants in role play situations: Stage fright or bewilderment?* (Saunders, 1985) and which is still highly relevant today.

My approach to this fairly common reluctance is simply to accept that some people are reluctant, nervous or even fearful about participating for the first time in a simulation. This tends to happen in a new class of students, most of whom are somewhat befuddled by being asked to become active participants, instead of sinking into a half-snooze for a lecture. Once reluctant participants can see that I understand their reluctance, they immediately feel relieved. What I do is to accept that they do not participate, but I ask them two important things: one is to be observers and make notes on what they see, which most are happy to do; the other is to stay silent and not interfere with the simulation participants. Almost invariably,

the next time I run a simulation, everyone wants to participate, and then it becomes a problem of getting volunteers to observe. If students are working in small groups and taking part in several games, I ask each group to decide who is observer for the upcoming game. When we come to the next game, they will already have decided who is to be the observer.

Observers–debriefers. In almost all short or medium-length simulations that I run, I arrange to have some participants observe the simulation as it unfolds. Thus, you may also surely wish to have one or more observers for each game group, each one observing a certain type of behaviour (e.g., gestures or eye contact). As a general pattern, I give observers a *Guide for Observers* (see copy in the Appendix). While the participants are studying their game materials, I meet with the group of observers and go over the main principles in the guide. Some people understand by reading, others do better from hearing it. On several occasions, I have congratulated a student for doing some outstanding observation, far better than I would be able to do. They usually tell me that they like that kind of observation task or that they have done it before. If you wish to develop a more complete observation protocol, Hassenforder et al. (2020) will provide some excellent material.

At the end of the observation period (end of the simulation), each observer becomes a debriefer. The *Guide for Debriefers* is longer than for observers (see copy in the Appendix). I go over the main points orally, and then leave it to each debriefer to manage the debriefing proceedings. Over the course of several debriefing sessions, either as debriefer or as participant being debriefed, participants learn how to manage the meetings. This is a skill that they have told me is useful in itself.

In my debriefer training sessions, I usually have two observers. One person does the observation as above, and the other will then observe the debriefing session, and share their observations in a meeting to debrief the debriefing session.

Affective reluctance, or reluctant affect. Many debrief formats start with emotions (see the section Which/whether and the various debriefing forms in the Appendix). As you can imagine, some participants, usually males more than females, may be nervous or fearful of talking about their emotions. Indeed, some participants may even be reluctant to admit that they experienced a range of emotions. It may also be that in their first debrief session, it is the first time that they have been invited, let alone expected, to talk about emotions, especially in universities where such stuff is considered inappropriate or even taboo. Emotions, then, do not necessarily come trippingly off the tongue.

The conventional wisdom is that, at the start of their debriefing, participants should address their in-game emotions. The rationale is that people need to deal with, come to terms with, calm down, understand, express, share and articulate their game emotions before they are (fully) able to think about, share and learn from the cognitive and behavioural aspects of their participation, and (fully) able to understand the system complexities of which they were a part, and to which they contributed, during the game.

Even with the use of debriefing forms (see examples in the Appendix) that include an explicit question on emotions, some participants will avoid mentioning their emotions. Sometimes, the space for answers to emotional questions carries few words, is even left empty, or mentions something else, such as another participant's behaviour. As I walk round the participants working in silence and filling out their form, I will stop at those who have failed to provide a few emotional words. I explain briefly what is wanted—"during the game did you feel relaxed, excited, angry, annoyed, happy?"—and point to the words on the form. I reassure them that telling about their feelings is okay and is in fact good, that everyone had feelings and that even I had feelings.

After filling in their individual debriefing forms, participants meet in small groups and go through the questions. Here again, some people (males usually more than females) avoid talking about emotions. When I see this, I go up to the group and again explain to the whole group that emotions are good to talk about, even if I know that my comments are aimed more at the male participants. As I explain, sometimes, from behind, I put my hand on the shoulders of a particularly nervous male, and this is reassuring for him. Once they have dipped their toe in the water, suddenly, they seem relaxed and are able to express their emotions.

When I sense that groups have got over their initial inertia and got under way, I am able to draw up a chair at a little distant and to listen in to each group without disturbing them. Usually, they hardly notice me, but if I sense that they feel my presence (too strongly), I get up and move to another group. I can even be near one group, but actually listen to another group. During small-group, online debriefings (several groups working in parallel in different online rooms), it is perfectly possible to drop in on a group, but without my webcam on and without intervening. Of course, I explain beforehand that I will drop in out of interest, but that it is their debriefing session.

Trust and ownership. Facilitators who are still driven to conduct teacher-centred debriefs and to correct every small error almost before it is made may find reassurance in several emerging qualities of debriefer groups. These are debriefer groups' internal resources, such as honesty and trust, debriefers' natural desire to own their learning, and debriefer groups' abilities to self-organize and to self-determine. An independent, teacher-free debrief group quickly develops trust, ownership, a self-determined attitude and a self-critical approach among its members. Debrief group members, free of the spying eye of a threatening teacher, can be and often are both more critical and more supportive of each other than a teacher could ever be. In addition, peer criticism is often more relevant and effective than that proffered by a teacher. I have sometimes been alarmed by the directness and harshness of some debrief members towards their peers, but immediately relieved and glad to see that the remarks are well received and taken on board. Trust for honest feedback and open expression is crucial in any debrief, and this can, in my view, only be fully achieved in learner-centred debriefs, with the teacher mostly out of the way. An example from my own experience is provided in Box 12.

Box 12. Episode of honest feedback and the development of trust

I remember clearly several instances of harsh and direct peer remarks during debriefing. One episode stands out for me. This was during the debrief of a job-interview simulation, one of several during a whole semester course on job interviews based on a backbone of several interlocking simulations, with several debriefs for each simulation. Indeed, for each 10 min simulation, about one hour was spent debriefing, with feedback provided mostly by students themselves. During one debrief of a student's job interview, one of the student debriefers said in a fairly strong, but respectful voice:

> Your eye contact was good, and your gestures were ok, but your arrogance is your downfall. If you do that in a real job interview, you will just not be selected, and they could even remember you later. You come across as far too arrogant, and that is a no no for a job interview. In real life, you also tend to be arrogant, we all [students in the class] can see that. So, for a job interview, you really have to cut your arrogance. In real life, you can make a start, and that would be nice for us.

At first, I was a bit taken aback, but a quick glance at the student debriefee reassured me that he [it was a male] was listening carefully. After a pause, the debriefee said to the debriefer student "thank you for that; it is a great help". I am not sure I would have dared to be so forthright, and even if I had, it would probably not have been driven home with the same force. In subsequent debriefs, I actually took my cue from that and was more direct in my own feedback, but usually giving a cue for the students to rebut if they felt like it. It is important for students to know that they can object to what I say in regard to feedback that I gave. Sometimes they did, but then other debriefers would sometimes insist that the debriefee listen to what I had to say. I usually emphasized and reinforced what other students had said, but I would also give feedback on things that had not been brought up by students. In any case, when offering feedback, I usually ask the student what they think; was I being unfair or did it make sense? During the early debriefs, a climate of trust would develop, and it generally remained throughout the remainder of the semester.

Completely handing ownership of debriefing over to participants in no way contradicts the tenets or practice of the Good-Judgement Debriefing Technique, see Oriot and Alinier (2018) for an excellent discussion and further references. However, it does mean that the facilitator (or instructor) must wait until after the participant-owned group debriefing, rather than judging during their debrief. Remember, stay out of the way of the student's own learning! Facilitator or instructor comment (or feedback or corrections) can, and should, be provided of course. However, this can easily, and must, be accomplished during the 'In-class presentation' (see Table 6.8), during which you will need to take careful notes. Indeed, it is likely to have even greater learning effect there as participants may have struggled, during their group debriefing, with some important points, and thus be more open to instructor input. This is what I did routinely, and it worked well.

Participants. The debriefing protocol and materials need, of course, to be adapted to the participants. For example, younger participants will do better if the materials are simpler. Instead of open-ended questions, multiple choice or Likert scales may make it easier to respond. Participants with no or little experience of this sort of activity probably need to be trained, such as in a debriefing simulation (see above). Participants with prior simulation and small-group, learner-centred experience take

to debriefing like ducks to water. Several times, I was particularly pleased to hear some participants at the end of a game say "ok, now, let's go an debrief", and they seemed more focused and excited during debriefs than during the games—this is how it should be.

Culture. The cultural context in which you run a simulation will be a factor that influences decisions that you make (Box 14). In some cultures, for example, women and men are not allowed to touch each other or touch each other on the head. In some cultures, you need to plan for prayer breaks at specific times, or for more or less mandatory coffee breaks. In some places, organizers will tell you that the workshop starts at 09h and ends at 19h, but on your first day, participants are still drifting in close to 10h.

Just as you are trying to make up for lost time, at about 16h, participants announce that many have to leave as it takes them two or more hours to get home. When you query this, you are told quite naturally that official and real times tend to be rather different. Better to adapt to that fast, otherwise you may experience unneeded frustration.

Resistance by others to debriefing. Also, you have to find your own way of overcoming resistance to debriefing in all sorts of people who think that they know better (just like many people think that they know about language or about climate change), but who in fact have not taken the trouble to find out or to experience for themselves. When your debriefings are relatively successful, and participants thank you for encouraging, even pushing, them through, then you can have full confidence in insisting that you are given the time that you need in order to debrief properly. Do not be browbeaten or cajoled into accepting less time than you need. If necessary, explain that you refuse to run a simulation and have it fail because you have not been able to debrief properly. In the end, you will be respected for standing your ground on important principles. Also, if, in the end, you are given the time, and the debrief is successful, which it is likely to be, you will have no further need to fight that organization. Those are things that you have to negotiate well before you agree to run a workshop. You can also agree to do a short version with a warning that you cannot guarantee results. Box 13 gives some insight into one way of working things through when your host is a reluctant player. It is not just participants who may be reluctant at the start, it is sometimes organizations (e.g., schools or conferences), even those doing games.

Box 13. Negotiating a safe debriefing time and space

I was once asked to debrief a whole conference, on games no less, but the organizers did not feel comfortable giving me the necessary time, so I suggested a greatly reduced time frame, with a severely cut-down version of the debrief and with uncertain results. The session turned out to be fairly successful, sufficiently so that in a subsequent conference (again on games and organized by the same people) I was given the required time and space to do a full conference debrief. This was a great success and lead to several invitations to debrief events elsewhere.

6.11.5 Steps

Below is a table that spells out in some detail the kinds of things that you might consider adopting in your debrief sessions. They are only my own way of doing things, but developed over several years. The table contains only a gist of the things that I do. In any case, you must develop your own materials, procedures and sensibilities, taking what you find useful, leaving things you do not like and inventing your own (Table 6.8).

Once you have mastered something of those steps, then you could probably think of yourself as a good or even as an accomplished debriefer, but it takes time, as it did for me. Even now, after many years, with almost every debrief, I discover new things and realize that I could have done better.

Table 6.8 Steps in debriefing

Step	Notes, often based on my own practice
Pause and de-roling	It is usually a good idea to have some kind of pause between the point where you stop the simulation and the moment when you start a debriefing session, be this during or at the end of a simulation. Some people say that the debrief should be almost immediately after, but my experience is that a reasonable pause, anything between 10 min and an hour, gives participants the chance to de-role, that is to 'cool down', to take some deep breaths and do whatever helps them to recover their normal composure, after what could have been a tumultuous session, or at least a game involving tension, if only from high and sustained concentration. If circumstances allow (time and space), it is a good idea to ask participants to leave the simulation room and go for a short stroll outside in the fresh air, and then to return after 10 or 15 min. This also gives you, debriefer, a breather and time to organize furniture and materials for the impending debrief. Participants should also take off any role badges that they might have had, and shed any other paraphernalia that was part of their role. The longer the simulation and the stronger the emotions, the longer the pause. Sometimes the pause can or must be a full week, for example, if timetabling does not allow game and debrief in the same sitting. You need not worry about participants 'forgetting'. Research shows that games are more memorable than ordinary (boring) classes. Participants are highly likely to remember, and once the debrief gets under way, their memory will be jogged and details will come back fairly fast. If you use an end-of-game or midway game questionnaire, then they will already be starting their debrief. If you pause for a week, then participants will need to remember to bring their form to the debrief session. In contrast to what I know of ordinary classes, my experience in simulation sessions is that they invariably remember to bring their forms because they are keen to do the debrief, knowing that they will learn. It is usually okay to let participants talk about the game during their pause; some will, others do not. If you join them in the pause, they may ask you questions and make comments. My stance here has been to listen carefully, to show interest, to agree with comments like "that was not easy" and, for involved questions, to suggest that they should bring up the issue during the upcoming debriefing. I have sometimes had a question like "is it okay to talk about X in the

(continued)

Table 6.8 (continued)

Step	Notes, often based on my own practice
	debriefing?", to which I answer "you do not need permission from me, you can talk about anything, as long as it is respectful". For some types of game and debrief, you may wish to impose a talk embargo until the start of the debrief, but you should explain to participants why you are asking them to keep mum for a while, when their strong and immediate urge is to talk.
Intro	Welcome back participants into the 'debriefing room'. Remind them of what you said in the briefing at the start. Elaborate a little; point out some important aspects of debriefing, especially that it is the most important part of the game session and that it is in the debrief that the most significant learning happens. One main aspect of this introduction is to set the scene, as it were, and to making for a safe and comfortable environment so that participants will feel that they can trust others in their group and that they can express themselves freely, without fear of retribution. Of course, the debriefing guide and the debriefer will help considerably to set a positive scene.
Guide	If this is their first time in a debrief, then it is important to emphasize certain rules regarding behaviour. You will find an example *Guide* in the Appendix. The guide is also an instrument that observers who are about to become debriefers should already have studied. If they have already used this instrument, your intro can be shorter.
Groups	Ask people to sit in groups as you have determined, or as they wish. The group membership for debriefing can be different from that during the game, or it can be the same. If I wish participants to discover experiences from other groups, then mixed debriefing groups help. This works well, for example, with *Fishbanks* (assuming, of course, that each fisher was a group of participants). If I wish the game group to focus on its game performance, then participants stay in the same group. This works well, for example, with the teamwork game *Towers*. It is also possible to run two debrief sessions, with debrief group membership changing in the second session. This works with most games, including *Fishbanks* and *Towers*. I have also started with game groups debriefing within their group, followed by a (shorter) debrief where members from each group are placed together.
Individual debrief form	The first step in most of my debriefing sessions is done individually and in silence. That tends to surprise some teachers, and they immediately question it. Interestingly, I have never had a participant question this. As a general rule, you should do what you think would best benefit participants. Imagine yourself as a participant and ask what would be good for me just now. Participants are not left alone to their own devices as they have the individual debrief form to fill out and they know that they will meet with their peers later. Filling out the form keeps them busy; generally, participants appear to be very concentrated during this time. Some participants write long replies, despite being asked to give short ones. In a way, this is excellent, but it does mean that you have to juggle with coordinating the timing (see below). The advantages of an initial individual debrief form are many, and include: • The silence gives participants time to think back over the game (some of my forms specifically ask participants to think back over their game experience); • They start their debriefing calmly, and are actually able to do what many say that debriefing should be, a time for reflecting back on experience, which is far more difficult during the hurly-burly of group discussion;

(continued)

Table 6.8 (continued)

Step	Notes, often based on my own practice
	• The silence gives participants time to collect their thoughts and to articulate answers, which would be difficult or impossible during a purely oral debrief, where they have to listen carefully to and think about other people's talk, in addition to expressing their own ideas; • The form contains spaces allowing participants to articulate their thoughts in writing, which requires that they think more carefully than they would if ad-libbing in reply to a rushed oral question; • Each question on the form helps the participant to focus on a specific aspect of their simulation participation, instead of wandering about; • Putting thoughts in writing forces participants to be more precise; • The writing gives participants the chance to make notes on their initial thoughts, enabling them to be freer during the oral discussion later; • The notes serve as reminders to bring up certain things during the subsequent oral debrief; • The writing constitutes a record that students keep. They use this when they do one of their last debrief activities, which is a portfolio for the whole course. Several examples of forms are to be found in the Appendix. The only real problem that I have encountered with using forms is that people fill them in at different speeds. Here are a few tips to reduce the disparity: • Announce the end time, e.g., "please complete your form in 20 min, no more"; • Half way through, announce the amount of time left; • Five and two minutes before the end, announce these times to finish; • Allow a short time after for laggards to finish; • Walk around the room, keeping an eye on how far people have progressed; • Adjust the finish time as a consequence, e.g., if most people are ahead of schedule, announce a shorter time to finish; if several people are lagging behind, announce a slightly longer time; • For those who finish very early, you can ask them to be patient for a short while and maybe to go back over their form to see if they have other things that they would like to add. Remember that your form must be designed during the simulation-design phase, and not left until a few minutes before your run the simulation. The form will include some (or all) of the learning goals that you have set for the simulation and debriefing. Thus, you have to strike a balance along several factors: the learning goals, the types of issues involved, the level of emotional charge that is likely to be generated during the simulation, the types of participants (e.g., adult, sophisticated, middle school people, minorities). As a general rule, your form will be on paper handouts. However, if your simulation is online, then you can easily build a form with online tools. The one that I use is Google Forms. One advantage of online forms is that you can collect the data for research after. If you use online forms, it is important to tell participants how the data will be used—see the Appendix for an example.
Meeting with observer–debriefers	During the above silent time, gather with the simulation observers. Go over the main points for observation. You may ask them to use blank paper or give them a form that focuses their observations on certain aspects that are important for the learning goals. Such forms should be easy and straightforward to fill out. Ask if they have any questions. Explain that, when the debriefing starts, they will become debriefers and chair the debrief meeting. If this is the first time for them, they may be a little anxious,

(continued)

Table 6.8 (continued)

Step	Notes, often based on my own practice
	but understanding and reassurance from you will be of great help. Go through the points in the Debriefer Guide (see example in the Appendix). Ask if they have any questions. Emphasize that their role is essentially to help the group share their game experience and express their ideas. Their role is more to encourage others to talk, rather than talk themselves. However, their feedback to others from their observation is very important, and they should not shy away of sharing their observations at appropriate moments.
Questions	At each step of the way, I try to remember to ask if anyone has a question. I usually pause for a few seconds, as people may need time to call up a question that they had or a new one that starts to form.
Group debrief form	In most cases, I also develop and distribute a group debrief form. This resembles closely the individual form (see example in the Appendix). It follows the same pattern, either with the original questions in full or with just summaries. Several ways of using this include: • The participant debriefer in each group makes a few notes to capture the essence of the discussion for each question; • Every participant has a form and makes their own notes as discussion proceeds; • If you have had two observers, then one can become debriefer and the other become discussion note-taker for the group.
Start of the debrief	Remember that the type of episode that I am talking about here is learner-centred or participant-focused debriefing. This allows small, independent groups to discuss together without the teacher controlling the talk and telling participants what they should have learned or even that they did something wrong. The term *debriefer* here refers to the participant as debriefer. The teacher's role is to coordinate the proceedings, to help out with ambiguities, to reassure, to nudge an individual or group back on track if they seem to have drifted, to set time limits and so on. At the start, I usually go over a few of the main guidelines for debriefing (see Guide in the Appendix). I emphasize the ones that seem particularly important for the groups. I mention that if they wish to know more, they can ask the debriefer to show them a copy. I remind participants that debriefing is important, that it is the chief place where learning happens and, crucially, that each person is responsible for their own behaviour and their own learning. "The learning that you derive from this debriefing depends largely on you, on your participation and input, on your sharing, on your listening to others respectfully, on your considering others' views, even if you do not initially agree with them. You form a learning collective, wherein each person is responsible both to themselves and to the collective. It is by working together that you will make the most of the debriefing session and derive the most valuable learning." I explain that the people who were observers during the simulation have now become debriefers and that it is they who will chair the discussion. I tell participants something like the following: "During discussions, you have important things to share with others, and that helps you to learn. However, you can also learn from listening to others, who also have important things to share about their experience. One person, whom you may have not noticed much was the observer. This person was outside the bustle and rumpus of the simulation, quietly taking notes about what was going on. The observer

(continued)

Table 6.8 (continued)

Step	Notes, often based on my own practice
	could, thus, see things that you did not see and even that you would not even imagine seeing. The observer can tell you a lot to help you learn. So you also need to listen to the observer." Even if you emphasized in the observer–debriefer meeting (see above) that the debriefer must get the others to talk, you will occasionally encounter a novice debriefer who starts and continues the debrief by doing most of the talking. If I see a debriefer talking too much, I intervene, and do it as early as possible. I may address the whole group in this way: "Now, normally, your debriefer chair is there to get you to talk, so if you do not talk, the debriefer may get nervous. And what happens when you get nervous? Yes, you talk, often too much. So help your debriefer to help you by talking. And, debriefer, please give the others a chance to talk. Sometimes, they may need a short while (5–10 s maybe) to think what they wish to say. So be patient. Silence is perfectly ok; it usually means that people are thinking. Be comfortable with others in your group when they are silent for a while. Remember that listening is the greatest of all communication skills."
Give time limit	Just before the debrief starts, I announce the time by which they should have reached the last question on the form. If a group has already debriefed (in a previous session), it is perfectly possible for them to start the debrief in class and to finish outside of class. Thus, groups can end their debrief session at different times.
Debrief proper	The debrief proper is usually a quiet time for the facilitator. You can do several things during the debrief. Often the debriefing groups do not notice the facilitator. When groups seem to have settled into concentrated and respectful conversations, I sometimes leave the classroom physically as a signal that the groups are on their own and that I am not interfering. When I return, I usually have the impression that some groups at least are not aware that I have returned, and that is a good sign for me. However, it is still important to keep your eyes and ears open to what the various groups are doing. Eyes pick up on body language, and ears tell you the tone of the conversations. I sometimes walk around to get an idea of how groups are proceeding. Some groups will advance faster than others. It is good to remind groups of time limits. Here I do not shout out to the whole gathering; experience has told me that some do not listen as they are too immersed in their discussion. A better tactic is to go to each debriefer, the person coordinating each group. Either speak quietly in their ear with "10 more minutes" or write a time on a card and show it to the debriefer. Of course, some people learn more quickly how to be a debriefing chair of a discussion. At first, some participants are nervous about taking on the role of debriefer. After the second or third simulation, most participants want to try their hand at it. As far as possible, it is best to ask them to volunteer, but sometimes you have to put pressure on someone. Generally, after they have done it, they express satisfaction at having had the experience. Thus, a simulation debrief also helps participants to learn additional skills such as chairing a meeting, balancing questions, note-taking and showing leadership.

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Table 6.8 (continued)

Step	Notes, often based on my own practice
End & next	At the end, it is usually a good idea to thank people for their hard work. Generally, they tell me, the debrief requires harder concentration and is more tiring than the simulation. I ask individuals and groups to keep their debriefing forms and notes carefully as they will be needed later.
Outside class (homework)	Most participants that I have had learn quickly how to manage their own debriefing discussions. A tell-tale sign of this can occur even at the end of their second simulation, when some will spontaneously say "ok, let us now go and debrief", and they ask for the debriefing form. Once groups have learned to manage their own debriefing discussions, it is time to let them fly on their own wings. I ask them if they feel OK about finishing a debrief or doing a whole debrief together outside of class, during the upcoming week. Most say yes. Some may indicate being unsure, to which I usually suggest that they try and they will probably do much better than they think. It is important to ask participants to finish or do their debriefs out of class only when you are fairly sure that they will be able to do it fairly well. Most participants are up to the task after completing a whole debrief in class, and maybe starting a second. Of course, much depends on the participants' level. Most of mine were first- or second-year masters level students, and they appreciate the challenge of doing this as well as the trust that you put in them to act in a responsible manner. University students' maturity and self-efficacy in studying vary across cultures. You will have to gauge your own students' self-debriefing ability. As a general rule of thumb, you should assume that they are more capable than your initial inclination might tell you. Give them the encouragement to try. In almost all cases, they will rise to the challenge and succeed. The desire to succeed is strong, especially when students work in a group. Once they have demonstrated to themselves that they are capable of conducting their own debriefing without your immediate presence, they will do it well and gain both satisfaction and learning from it.
In-class presentation	In addition to finishing or doing their debriefing outside class, my students are required to prepare a presentation for the next class, based on their debriefing. (These notes are based on my teamwork skills course, and they can be adapted to many courses that use a series of simulations and debriefs.) At this point, I have stopped calling them 'groups' and call them 'teams', which they like (even if they have not yet met fully the criteria for being a fully-operational team). As a general pattern, I ask them to prepare a ten-to-fifteen-minute presentation, and leave five to ten minutes for questions, with a structure as follows: a. **Introduction** (name of their team, team members, class ID, etc.). In many simulation sequences, I ask teams to make a name. They have been pretty inventive. b. **Description** of the simulation and what happened. c. **Results** of the simulation, showing photos that they took during the simulation, graphs based on the evaluations (which I email to them after I have done the calculations). d. **Analysis** of the results, such as why they think that they achieved this or failed that. The analysis has to be concrete, and draw on the notes during the debriefing and, if they feel able, mentioning members by name. If they disagree on the analysis, they should mention this, saying what the disagreement is and why. Generally, they have been fairly self-critical.

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Table 6.8 (continued)

Step	Notes, often based on my own practice
	e. **Readings**. Each team has to have read some documents about concrete aspects of teamwork and relate their results and analysis to the principles in those readings. f. **Improvement**. Each team has to specify in concrete terms what improvements each of its members undertake to make for the future (either in the next simulation or in reality). g. **Questions** and comments from other students, and finally from me. This is where I get to make comments on their work, cross Ts and point out strengths as well as weaknesses in their work. Generally, their presentation is a high point for students as they are keen to tell about their experience to everyone and tell about their things for improvement and their success. In the first time round, they tend to go well beyond the time limit, but (sitting at the back of the room) I hand signal that they need to get a move on. In my comments, I point out to each team that a good team sticks to the allocated time (usually with a story about presenting a project to a funder). The students sometimes complain that they need more time to say everything. I reply that it is good that they have so much to share, but that they should also hone their skills in summarizing the main points. I then ask how much time they need for the next presentation, and we tend to negotiate something like 15 or 20 minutes, plus 10 or 15 for questions. Of course, I then warn them that I will cut them off if they go over the allocated time. They generally do not; one more team skill learned.
More games and debriefs	In some courses, a debrief session is followed, in the next class, by another simulation. It is generally focused on a related or extended skill set and/or is more challenging. For example, instead of building a tower, they have to build a bridge. By this time, students are able to conduct their debriefing fully outside class. Some have told me that their discussion has even gone on for over two hours, that they found it exhausting, but rewarding. As time goes on, the team members begin to talk about themselves and behave in terms of real teams, which is what they form over and above the simulation episodes in class.
Portfolios	Of course, during class, it is not possible to give a grade to each student. I explain that in reality they do not need a grade, and that a grade means little or nothing. It is not because they have this or that grade that they can claim to be good team players for a company. The only way is to actually do it, as they did in class. A grade does not guarantee any kind of 'level' in teamwork. I explain to students that, unfortunately, I have to give in a grade at the end of the semester because someone in the university sits at a computer and inputs numbers, which they call grades. However, it is not really possible for me to give an accurate grade. I did not see all their work, either in class or outside. It is only they who know what they did with any degree of accuracy. Therefore, they are the best placed to give a grade. After some questions, doubts and more explanation, they come round to the idea that they can give themselves a grade, and do so more meaningfully than I can. In addition, the portfolio, thus, becomes another debrief for them, a debrief in which they look back over their whole course, begin to realize the progress that they have made, stand back and understand the broad aspects of teamwork and their importance in real life. In addition, as they write their portfolio as a team, they can continue to practice their team skills.

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Table 6.8 (continued)

Step	Notes, often based on my own practice
	What to do? The answer is to ask each team (not individual students) to make a portfolio for their work during the semester. I explain what a portfolio is, which, sadly, few have heard of before. In addition to including all their work, debrief notes, results, photos, presentations and comments about each item, they have to write notes on what makes for good teamwork (relating them to assigned readings), on their experience of collective portfolio writing and on the things that each member promises to do during the next few years. In addition, I give them a final test of their teamwork skills—yes, teamwork learning continues during their final portfolios. I give them instructions that the team (with all members present) must attribute an overall per cent to each of the members, but that they have to establish a hierarchy by giving per cents that show at least a one- or two-point difference between each member. (My portfolio template gives precise instructions.) They also have to include a team account of how this was done. Finally, I convert the team's per cents into a grade for each student, in such a way as to preserve something of the differences that they have calculated. Some students find that procedure difficult, but most appreciate the opportunity to participate in their own grade assessment. The whole process (portfolio and grade procedure) is, thus, also a way for them to debrief.
Anecdote	As an anecdote, it might be worth relaying this story. One student, during her internship after a teamwork course that I ran, had mentioned the course to her company supervisor. The supervisor asked the student if she would like to conduct a training workshop on teamwork for people in the company. The student asked me for advice, and I gave her materials about the simulations and debriefings that she was thinking of using. I emphasized the need to debrief thoroughly. Her workshop was successful; her boss, the participants and she were pleased with the training.

6.11.6 Debrief Skills Development

None of us are born with debriefing skills; they must be learned, sometimes with difficulty. For many years, I found the debriefing episode particularly difficult; I often felt nervous, and I am certain that I did it badly on several occasions. I still find it difficult, but I feel more confident, partly because I made a special effort to focus on that and discover and invent ways to do it better.

> … it is obvious that the skills necessary for effective debriefing are many and complex. They include structuring and organizing skills, group process skills, communication skills, conflict resolution skills and very often skills in counselling. These skills are not innate, but can be developed through formal training and through critical reflection on one's own experience. *Anyone who undertakes debriefing episodes without a basic grasp of these skills, or without immediately available skills support from someone else, is placing himself or herself and other participants at risk*. As with other skills, however, successful experience in using debriefing skills generates confidence. The level of confidence of a group leader is often reflected in his or her debriefing style. (Pearson & Smith, 1985; my emphasis.)

A number of ways are available to help improve your debriefing skills. One exercise that can be helpful is to include a question about participants' thoughts on

their debriefing—a kind of meta-debriefing. You can include such a question in your group debriefing form (see examples in the Appendix), ask it after verbally or include it in portfolio instructions. A minor drawback of including such a step is that it can lengthen the whole process if done at the end of the debrief. It is easier to do in a train-the-trainer workshop than in a university course. In a workshop on debriefing, meta-debriefing should be built into the workshop structure. Co-debriefing is a great way to learn (see elsewhere in the Chapter). Attending workshops on debriefing; running a workshop on debriefing is probably even more instructive! Some of the techniques for debriefing (e.g., video recording) can also be used in debrief skills training. I would like to think that this chapter might also help and also the works cited in the Bibliography.

6.11.7 Research

Much research has been conducted on the effectiveness (or otherwise) of simulation/gaming in general and on specific games in particular (for an overview of early work, see Bredemeier & Greenblat, 1981; Randel et al., 1992; de Caluwe et al., 2008; Hofstede et al., 2010; for more recent reviews, see Ranchhod et al., 2014; Buljac-Samardzic et al., 2020; Hallinger et al., 2020; Kourgiantakis et al., 2020; Luctkar-Flude et al., 2021). Much of that research tends to be somewhat inconclusive in that it does not demonstrate a massive advantage over what one might call "traditional teaching methods". More recently, Dick Teach (2018) took up the challenge in *Why is learning so difficult to measure when "playing" simulations?*

This is hardly surprising as it is like trying to compare sticky toffee pudding and ratatouille. Also, it is unfair because it sets traditional methods as the standard to which other things must be compared and proven before they can be admitted within the sacrosanct halls of teaching. Conservative institutions do not like being threatened with innovation, openness, enthusiasm, play and least of all silly games.

Thus, it is games, not traditional teaching, that must prove themselves. Very few traditional chalk-and-talk methods are ever expected to prove themselves. It is taken for granted that they work. Yes, they do work, to a certain extent, but so do games. We gamers take it for granted that games work, but gamers are still put on the spot and expected somehow to prove that they work, whereas traditional teachers are rarely asked to prove that their classes work. This raises the thorny issue of whether, scientifically speaking, research can ever 'prove' that this or that educational method works or works better or best. All that science can do is to indicate levels of confidence and probabilities of this or that method working to a certain extent, usually hedged with limitations in each piece of research, which in the end leads to a rather patchy picture of what educational research can tell us about the effectiveness of this and that method. In addition, the kinds of skills that game participants learn (e.g., teamwork, collaborative writing, leadership, understanding complexity, intercultural communication) are more elusive and less amenable to classic educational research than the content of standard teacher-controlled classes.

Despite such misgivings, I would like to suggest that research on the effectiveness of games can do better than it has done so far. One powerful way forward is, yes, to include full and proper debriefing in simulation/gaming research programmes. If we accept as axiomatic that (almost) all simulation/games must include substantial and properly-facilitated debriefing for the full learning potential of a game to be realized, then it makes no sense at all to attempt to show that a simulation/game is effective in helping learners reach certain learning goals if proper debriefing has not been built into the simulation and executed in such a way as to maximize learning.

In research articles on the effectiveness of simulation, little attention is paid to debriefing. With few exceptions, such as research conducted by Toshiko Kikkawa, Willy Kriz, Dick Teach and others, the usual fair is to say something like "at the end of the simulation, students were debriefed", with nothing more about how the debriefing was accomplished. In addition, the above phrase "students were debriefed" smacks of a teacher-centred approach, in which the teacher did the debrief ***to*** the students, rather than the participants being allowed to discover, realize and fulfil their own learning, learning that belongs to them. It would show much greater respect, to the simulation/game research community and to the learners who give us their data, if we include debriefing—the place where learning happens—in our research paradigms and procedures. As long as we tuck debriefing away into a small corner, or simply forget about it, rather than holding it as more important for learning even than the game, we are unlikely to be able to show that simulation/gaming/debriefing works and works well. It is probably in the area of medical simulation research that the greatest strides in debriefing research have been made, with initial impetus by Fanning and Gaba's (2007) well-cited article. Game practitioners and researchers should look at this body of research, some of which is listed in the Bibliography. A good place to start is Roungas et al. (2018).

To summarize the *How* of doing research in simulation/gaming/debriefing, we should, nay, must:

- Acknowledge debriefing as the main fount of learning in most simulation/gaming.
- Include properly designed and facilitated debriefing in any research programme.
- Decide on whether the debriefing paradigm is participant-centred or teacher-focused, and account explicitly and fully for this in the research report.
- Give a full account of the debriefing materials and methods in any research report or article, so that the research can be better understood and replicated.
- Build into research instruments questions about the debriefing as a process, thus providing an idea of how the debriefing was experienced by participants.
- Put pressure on journals, especially simulation/gaming journals, to *require* this kind of rigour in effectiveness and related studies.

In addition, it is important to conduct research specifically into debriefing, its effect, comparing a variety of debriefing types (including no debriefing), its effectiveness and so on. Several years ago, in one of my articles (an Appendix in Crookall, 2010a, 2010b), I suggested a research structure that might achieve this. My suggestion has largely been ignored, including by myself. It is time for rigorous research to be conducted into debriefing itself—beyond the medical arena.

Conclusion

The following words (Pearson & Smith, 1985), written nearly 40 years ago, are just as true and powerful today as they were when they were written.

> Debriefing is neither simple nor easy. Effective debriefing relies upon the development of a range of specialized skills. These skills, particularly interpersonal and interventionist skills and the skill of timing, may be developed through deliberate training and are refined through experience; such skills cannot be learnt by reading this or any other chapter. The only way to learn to debrief is by doing it, and by watching others doing it with an attitude of deliberate and critical reflection.
>
> Reflection lies at the core of experience-based learning. Without it, experiences may remain as experiences and the full potential for learning by the participant may not be realized. If debriefing, or some other form of reflective activity, is absent from a programme of experience-based learning, serious questions can be raised concerning that programme's validity and claim to be based on experiential learning. However, ineffective or superficial debriefing may be even worse than no debriefing at all. Effective debriefing depends in part on:
>
> 1. A positive commitment to the importance of debriefing and its central role in experience-based learning.
> 2. The deliberate planning, in any experience-based learning activity, for an adequate opportunity for debriefing to occur.
> 3. A realization that effective debriefing depends upon a high level of facilitatory skill and a determination by those who facilitate debriefing to either possess or develop these skills.
> 4. The establishment of clear intentions, objectives and purposes for activities which are conveyed to participants during the briefing phase and which, with the debriefing, form the framework within which the activities take place.
> 5. The identification of the ways of knowing and types of knowledge which any experience represents and the establishment of appropriate context, structures and relationships in which any debriefing process will take place.
> 6. The establishment of a debriefing environment based upon trust, acceptance, willingness to take risks and the mutual respect of individuals' feelings, perceptions and theories.
>
> If these simple, but essential rules are followed and supported by a skilful and sensitive group leader, then debriefing, which as a form of reflection, is the key to successful experience-based learning [and] can be highly effective.

One of the loveliest and most dedicated people in simulation and debriefing was the late Barbara Steinwachs. If I had to choose just one person to debrief me, it would be her; an editorial about her will tell you why (Crookall et al., 2004). I suggest that you grab a copy of her wonderful article, titled *How to facilitate a debriefing* (Steinwachs, 1992). Her guidance there will considerably enrich what you might have found in this chapter. Leigh and Levesque (in press) provide advice and

discussion on facilitating simulation in general and debriefing in particular. Their analysis and insight will be invaluable to you as you develop your debriefing skills. Paquay et al. (2023) provide valuable guidance on adapting debriefing programmes to evolving organisational conditions, especially in medical institutions. Many other documents, such as Deason et al. (2013) and Alklind Taylor et al. (2014), will provide some useful, practical guidance, some of which are included in the Bibliography (below).

This chapter has sought to provide an overview of debriefing mostly for learning simulation/games and to provide some nitty-gritty advice on a range of aspects related to debriefing, such as where it can take place, to whom it belongs, when and how many debriefs, why debrief, how to debrief, including how to sequence a series of games and debriefs as the backbone of a semester course. It also provides some instruments, such as debrief forms, that you can copy, adapt and use for your own games.

Now that you have read about debriefing, the next step is to go out and do it. Just as you can only learn to ride a bicycle by getting on and doing it, the only way to learn to debrief is to do it. If you are still nervous about it, ask your student–participants for help. Tell them that you have not debriefed the game before and that you are still learning and would they like to experiment along with you, see Box 14. Above all, do not let yourself be browbeaten into reducing your debriefing because some arrogant know-all tries to discourage you, often because they are afraid of the power of games and debriefing and also of your skill in being able to facilitate them.

Box 14. Asking students to help

It is easier to ask students to help than you might think. Generally, students are game for experimenting new ideas in the classroom. You just have to ask. One of the times that this happened for me was for a Masters level class at PennState, a top American university. It resulted in one of my best simulations. Normally, one is supposed to give in one's syllabus months before the class starts. I had not submitted any syllabus, which severely annoyed the university authorities. Walking down to my first class, feeling a bit scared as I still did not know what I was going to do, I suddenly hit on the idea of a semester-long simulation on the very topic of the class, pedagogical materials design. On entering the classroom, I explained the above to them and asked if they were game for exploring a new type of class with me, which might or might not be successful. They all seemed keen on the idea, despite the uncertainty—maybe because they had been bored with the usual fare of chalk-and-talk in their other classes. During the semester, students made useful suggestions as the simulation unfolded.

At the end of the semester, one student said to me, with the whole class to hear, "You know, I am proud of what I have done"—and that has stayed with me ever since. She had indeed much to be proud of; she had made a huge folder, full of excellent pedagogical materials, all original and creative, ones that her future students would be glad to use. A chalk-and-talk class would never have resulted in that!

In a subsequent university, I ran a similar (and better) simulation. Some of the students presented their work at an international conference, and were approached by a school and a publishing company, which wanted to buy their materials. Now that is a feather in any student's learning cap. The students accomplished all that, not because I taught them, but because they were participants in their own simulation and debriefing. More on that in Crookall (1990, 1991).

Chances are that you will learn together with your learners, that your relationship will strengthen and that their self-confidence will be given a boost. It is also interesting to conduct an informal debrief of your joint learning together. If, in this whole-class debrief, you are more numerous than can be accommodated in one group (e.g., more than about 10 people), then try using the fish bowl technique—I leave you to find out about that—I have found it to be very effective.

Let me finish with two interesting quotes; one insightful, the other thoughtful—I invite you to debrief in your mind to decide which is which. A debriefing friend, Stephan Rometsch, at the end of an ISAGA workshop on debriefing, came to me and said something like:

> A game is like a tasty meal in your mouth. The debriefing is digesting and absorbing nutrition.

Remember his comment when you run your event and debrief it. One might say that debriefing avoids indigestion and keeps one healthy—both your participants and you! I have three possible authors, Bill Bullard, George Eliot and Plato, for the second quote (if you find which one it is, please let me know):

> The highest form of knowledge is empathy, for it requires us to suspend our egos and live in another's world.

Finally, every time that you run a simulation/game, ask yourself if you have designed a full and proper debrief, adapted to the learner and to the learning goals. Also, ask yourself whether your debrief will be centred on the participants themselves.

Appendices

The appendices contain a number of ready-to-use materials. Some are instruments that you can use in your own debrief. Others contain elements that may be used during the game and in the debrief, such as the spreadsheet graphs produced during participation. One set of materials includes the syllabus for a whole simulation-based course on teamwork, as well as the spreadsheet graphics and forms used for debriefing. Assessment sheets can be short or long, used at the start or in the middle (usually short) or at the end or some while after (usually longer). In almost all cases, participants should be able to keep their replies to themselves, that is, not required to share them with others or the facilitator. I usually tell participants that their form is for them, that they are under no obligation to share it with (even show to) others, although they can if they wish (they usually do after a short while into the debrief).

Of course, you will have to adapt these instruments to your own particular circumstance and consider all the factors and aspects discussed elsewhere in the chapter. It is particularly important to adapt your debriefing structure and questions to your learning objectives, keeping in mind the participants' characteristics (familiarity with their subject matter, age, game experience, professional level, etc.). Please feel free to

Guide for Observers/Debriefers

As mentioned earlier, in most of the simulations that I run, I ask a small number of people to be observers during participation. I give them each a copy of this guide and spend a few moments with them to make sure that they understand at least the main ideas. I also sometimes give them a simple form to make notes during their observation, or ask them to use blank paper.

At the start of the individual debriefing, participants work in silence and fill out an individual debriefing form (see examples in the Appendix). During this time, observers study the form, go over their observation notes, and sometimes consult with each other to compare notes.

The guide is one that I tend to use, but I usually modify it for each simulation. You will obviously want to make your own, to emphasize the aspects that you consider important. If you are running a debriefer training workshop, one exercise that you can ask trainees to accomplish is to adapt the guide to a specific simulation or specific circumstances, or even to develop a guide from scratch.

Box 15. Guide for observers/debriefers

During the simulation, you will observe. Please use the observation form (given to you by the facilitator) or your own paper. After the simulation, you will help participants to debrief.

Observer: Instructions for the **gameplay** session:

1. You cannot participate in any way with your group.
2. Observe mostly your group. You may also observe other groups briefly.
3. Stay away from the group; do not go too near or interfere with the participants.
4. Keep a straight face; do not show any sign of surprise, pleasure, disappointment, etc.
5. With pen and paper, take notes on visible aspects of behaviour and interactions: Who does what.

Debriefer: Guidelines for the **debriefing** session—after the gameplay.

a. Form a **circle**—round; not oval. If necessary make people **move** to obtain a tight round circle.
b. Using a **pen**, write on the group debriefing **form**, and **summarize** the **group's** ideas. This is not a simple list from everyone's individual forms. You should summarize the **collective thoughts** of the group, which may be similar to or different from their individual answers.
c. If you have limited **time** for the discussion, go quickly over the first questions, and spend more time on the later questions. Keep an eye on your watch. Leave enough time to conclude. Each person should have more or less the same time to share.

1. Start with a word of welcome. Make people feel at **ease**. Outline the **purpose** and **spirit** of debriefing. Then invite people to **share** their **feelings** (usually the 1st question). Maintain the spirit of **exploring**, **sharing** and **learning.**
2. Affirm (encourage, thank) anyone who helps (especially at the start). Help them to overcome inertia.
3. Ensure that the spirit of **sharing** and **listening** is respected.
4. Give timid people opportunities to **express** themselves. Ask talkative people to **let others talk** too.
5. **No personal attacks**; criticism should be formulated **positively**, that is, people should focus on what can be done better next time).
6. Remain **impartial** at all times. Do not let yourself be involved in substance if people's comments are balanced and constructive. Do not allow comments that are racist or sexist, or plainly negatively prejudiced (for example, disrespectful or intolerant of difference, especially in culture and religion).
7. **Facilitate** the discussion: Do lead not too openly once it has acquired its own momentum.
8. Make sure everyone who wishes to **contribute** can do so. Remind people to speak **respectfully**.
9. Avoid "yes/no" Qs. Use "**why**?" Do not push people to speak against their will.
10. Do not tell participants what you think that they should have learned. It is for them to say what they learned (or would have liked to learn).
11. From time to time, **summarize** the general sense or main points—clarify an issue before moving to another question.

Follow the **structure** of the group debriefing form. Encourage participants to **focus** on the item in question. Bring wanderers back to the main discussion.

Notes on the above guide. Most of the instructions should make sense to you, but beginner observers and debriefers may not understand fully or forget some items. For beginners, you may wish to give them a shorter list of items. In any case, it is important to emphasize orally some of the crucial points.

Debriefers are asked to make sure that each group forms a true circle. They often miss this or consider that it is not important. So, for that instruction, I tell the whole class that forming a true circle is important so that all participants may participate equally. On the board, I sometimes draw a circle with four dots more or less equidistant from each other, with a fifth dot clearly outside the circle. I then ask if they think that the outside person is able to participate equally. Even when they clearly see that, you will occasionally get a reluctant participant sitting outside facing at a tangent to the circle, and clearly not wishing to participate. In those rare cases I go up to the group and ask them what they would like to do. I ask the recalcitrant person if they would rather stay out of the group. I also ask the other people in the group. I explain that it is perfectly ok if the person wishes to stay out, but they cannot be half in as that disturbs the work of the others. Depending on relationships, the person will decide to stay out or be convinced by others to

become part of the fold. Usually, it is the latter. Once the hesitant person has started to participate, they forget their resistance and take part fully. If the person decides not to participate, I then ask what they would like to do and/or discuss options that I offer (Table 6.9). A very useful, and far more complete, guide to observation is Hassenforder et al. (2020).

Sequence of Games and Debriefing for a Course on Teamwork

This was a semester course that I taught to master's level students. The course contained short lectures, films, gameplay classes, debriefing classes and feedback classes. Class grade was based on individual scores from games, group scores from games, end-of-semester group portfolio (score modulated by team members). Below is the sequence of classwork and out-of-class sessions, with games and debriefs feeding into each other, following the pattern in Fig. 6.8. You will notice that debriefing is done entirely in class at the start, but very soon I ask students to start in class and finish at home, and then to do it entirely at home. Some people may berate me for not tightly controlling what the students are learning; such people forget that it is impossible to determine and control what is learnt, no matter what type of classroom configuration, open and student centred or closed and sitting in neat rows. In addition, I used a spreadsheet calculator, Fig. 6.12, which I designed to provide numerical and visual feedback, based on the results from each game. You will also find an individual debrief form, Fig 6.13.

Table 6.9 Simulation- and debriefing-based teamwork training: Summary of semester syllabus showing debriefing points

Week	**Classwork** (debriefs in bold)	**Out-of-class work** (debriefs in bold)
1.	My introduction to the course: Mini lecture on using games to learn, including the importance of **debriefing**, grading sheets. Two mini interactive lectures on teamwork. Class is organized into groups (to become teams later).	Read texts on teamwork. Make notes.
2.	**Game 0** NASA Game (the main goal is to familiarize students with what it is like to participate in a game, and touch on some aspects of teamwork) + **debrief**.	Students find and prepare presentation from web-based video film on teamwork (3m to 7m).
3.	Semester teamwork project. In addition to the short in-class simulations listed above and below, students in each of their groups participate in an out-of-class simulation. In a nutshell, each group must develop a full proposal in response to a tender to set up a government teamwork centre in a country in ASEAN (each group chooses their country). The proposal must include such things as location, detailed curriculums for two sets of trainees, a budget and business plan for three years. They **debrief** this out of class, in a similar fashion to the in-class simulations. From time to time, they have to report progress with a short presentation in class. On seeing how other teams are doing, of course, rivalries develop and each team wishes to outdo the others.	

(continued)

Table 6.9 (continued)

Week	**Classwork** (debriefs in bold)	**Out-of-class work** (debriefs in bold)
4.	Presentations on films, Q&A by students and teacher. Instructions given for Game 1 Replica (including roles, rules, constraints, etc.).	Preparation for Game 1 Students prepare for Game 1, taking into account the feedback that they got from debrief of Game 0, and what they learned from mini-lectures, presentations and films.
5.	**Game 1** Replica. **Individual Debrief** = start filling out an Individual Debriefing Form.	Complete the individual, **debrief** form. Highlight points in texts relevant to the game experience.
6.	Small-**Group Debrief** of Game 1, using Group Debriefing Form.	Meet in groups and prepare **debrief** presentation for class, based on their individual and group debriefs (both structure and content), including (a) teamwork aspects, (b) performance items that were good and (c) ones that need improvement.
7.	Each group presents their out-of-class debrief, with Q&A and feedback from students, then from the teacher. Instructions given for Game 2 Towers (including roles, rules, constraints, etc.).	Preparation for Game 2 Students have to take into account the feedback that they got from the **debrief** of Game 1.
8.	Semester teamwork project. Groups present their work to date, with **debrief** (feedback) by each group on each presentation.	
9.	**Game 2** Towers. **Individual debrief** of Game 2. Start **group debrief** of Game 2.	In their groups, meet and continue and finish **group debrief**. Prepare group presentation for class, based on their individual and group debriefs (both structure and content), including (a) teamwork aspects, (b) performance items that were good and (c) ones that need improvement.
10.	Each group presents, with Q&A and feedback from students, then from the teacher. Instructions given for Game 3 Bridges (including roles, rules, constraints, etc.).	Preparation for Game 3 Students have to take into account the feedback that they got from **debriefs** of Games 1 and 2.
11.	**Game 3** Bridges **Individual debrief** of Game 3 Start **group debrief** of Game 3	In their groups, meet and continue and finish **group debrief**. Prepare group presentation for class, based on (1) their individual and group debriefs (both structure and content), including (a) teamwork aspects, (b) performance items that were good and (c) ones that need improvement, and (2) their class experience.
12.	Each team presents their **debrief** of Game 3.	
13.	Teams present their tenders for developing a teambuilding training centre and also present their training centre **debrief** session and results.	
14.	Explanations about team portfolios.	

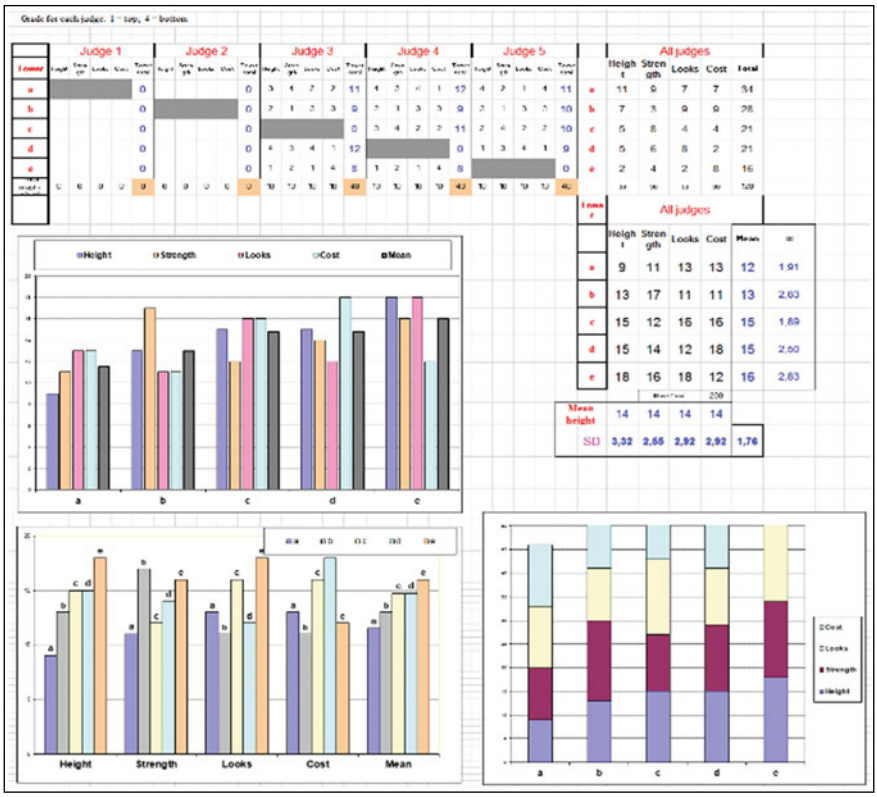

Fig. 6.12 Example of my spreadsheet calculator for teamwork simulation

Below is an example of one of the several forms used during the teamwork course. To save space, I have reduced the gap between questions. When you use this, you will, of course, need to insert sufficient space after each question to allow participants to write a few words and phrases. I typically fill one side of an A4 page, which gives ample space for students to write notes. The size of the space varies from question to question. By the time that participants get to this *Towers* form, they have already filled in two similar, but shorter, forms, so students work fairly efficiently. You will notice that Question 7 asks them about progress since the last simulation (and debriefing).

Participants fill out this form after the pause at the end of the simulation. The debrief is in two main movements. First, participants fill out the individual form below in silence. In the second movement, after they come together in small groups, either they or only the debriefer gets a similar group form to take notes about the group discussion.

Debriefing TOWERS : **Individual** work Work alone & in silence. Use a few key words or phrases - no long sentences
1. What were your **feelings** during the activity (excited, frustrated, happy, angry, achievement, belonging)?
2. What are your **feelings now**?
3. What events **happened** during the activity? Facts, behaviours, interactions.
4. What **attitudes** and non-verbal signals did you and your teammates have?
5. What **explanations** do you have for the events (facts, behaviours, attitudes, etc) in 3 & 4?.
6. Based on this experience, what are the **differences** & **similarities** between your activity and the "real world". Examples: distribution of tasks, communication patterns, attitudes, initiative, trust, listening, conflict of interests, arguments, winning/loosing, change, goals, sharing, etc.
7. **Teamwork**: Based on this experience, what are the important elements of teamwork (versus individual work or group work)?
8. **Progress**: What things do you feel have improved in this TOWERS experience over and above the things that you learned in the previous experience REPLICA?
9. The **future**: What will you as an **individual** do better next time?
10. What should your **team** do better next time?

Fig. 6.13 Individual debrief form (for towers)

Debrief form for a Short Cross-Cultural Game

This is an example of a form that I have used for a short cross-cultural game. The form takes up one A4 size page and contains space both for the silent thinking back and for making notes after the debrief (Fig. 6.14).

Form to help you debrief your experience in the cross-cultural encounter game		
Use this feedback form to make brief notes on your feelings and thoughts about your experience in the simulation. This form is private and you will not be asked to show it. You do not have to share with others what you write here, but you may if you wish. Your notes here are simply to help you think more clearly about things. However, you will be invited to take part in a discussion, during which you may, if you wish, share your feelings and thoughts		
	Individual notes just after participating in the simulation (before oral, group debriefing)	Notes during the debriefing **group** discussion
Feelings. Write a few notes about your various feelings (e.g., pleased, frustrated, angry, intrigued, accomplishment, disconcerted, badly treated, …).		
Events. Describe some of the main events. Do not explain or interpret. E.g, instead of saying "X got angry", say "X spoke loudly". Events include funny episodes; frustrating moments, odd behaviours; strange encounters.		
Interpreting & explaining events. Go back to some of the events you noted above and say why you think they happened. What interpretations and explanations do you give to them? Avoid laying blame; explain impartially.		
Other situations. Describe other situations of which you are reminded. What is similar? What is different? What aspects of the simulation experience are realistic and unrealistic?		
Learning & action. Note down one or two important things that you have learned, or one or two new ideas that you have had. What thing(s) will you do differently from now on?		

Fig. 6.14 Debriefing form for a short cross-cultural interaction game

Debriefing Materials Used for Fishbanks

Probably, the most elaborate form that I have devised is the one that I use for debriefing *Fishbanks*, a simulation designed by my long-time friend, Dennis Meadows. Over the years, the form has evolved, usually with expanded and additional questions. I have used variations of this form with several groups, such as masters level classes, fishery authorities in Thailand, the Institut d'Etudes Politiques (IEP, Sciences Po) and the Department of Fisheries at the University of Tromsø—The Arctic University of Norway. In each and every case, including the two with professionals in fisheries, the participants managed to kill all the fish.

In the formatting below, I have reduced the space for answers in each question. If you use this or modify it, you will have to expand the spaces. I usually keep debriefing forms to one page, but for this one I use two A4 pages, to give ample space for participants to reply (Fig. 6.15).

Generally, especially for this form, you need to give plenty of time for participants to write their answers. Even though you ask them to be brief, some will fill each space completely. Generally, allowing participants the time to write as much as they wish here pays dividends later during the oral sharing and discussion. Also, below are graphs of participants 'progress' through decisions.

The graphs below are produced during gameplay, with each round of decisions. Every three or four rounds, depending on how the situation is developing, I stop the game for a few minutes. I allow fishing companies (each played by about four people) to meet and discuss the situation. I also show them the results of their decisions so far. I was told once that you should not indicate anything to participants about their actions, as it would give things away. My experience is that showing them the graph and even warning them (I sometimes point out several trends, such as the more boats they put out, the more they will deplete stocks, and over time, the deep-sea catch will diminish) has little (if any?) effect on their decision-making, so hell bent are they on quenching their greed and making the most money. If anything, showing them the graphs focuses their minds and pushes them more to make agreements, which they promptly break in the next two or three rounds. In addition, the kind of data that they see in the graphs would, in real life, be available to them. The graphs are, of course, made available to participants for their debriefing (Fig. 6.16).

In the 2014 run of *Fishbanks* (Fig. 6.13), it is relatively easy to see, by comparing the graphs, why assets started to decline after round 9. Fishing companies sent almost all their boats to the coastal sea (catch for the coast) in rounds 8 and 9, which killed all the fish there, so no income was obtained in round 10, when the game ended.

In the 2016 Tromsø run (Fig. 6.17), the situation evolved in a more complex fashion. Various teams requested breaks for meetings fairly often and they sometimes lasted quite some time.

They decided about half way through to ease up on the deep-sea catch, and work on a jointly-agreed arrangement for the coast (Tot catch, coast). These agreements were broken several times, hence the wavy red line for coastal catch. In round 10 or 11, participants decided that they would make a concerted effort to save the fish. However, some fishing companies, sensing that they were arriving at the finishing line, decided to use end-game tactics in a last-ditch fling, and threw all their boats at the deep sea, with the result that you can see on the graph. It may well be that if participants had had another dozen rounds in front of them, they might have been able to stabilize their catch, but probably at less than optimal levels.

Individual debriefing form, by David Crookall, for FISHBANKS, by Dennis Meadows

Name_____ Fishing company_____ Role_____ Date_____

Work **alone** & in **silence**. Reminder: You are **no longer in** the simulation. Think b**ack** to your time in the simulation. Your replies below should be words or short phrases (not long sentences).

1. What were / are your **feelings** and **emotions**?
   a. **during** the activity (e.g., excited, sad, frustrated, happy, annoyed, accomplishment, belonging, etc)?

   b. **now**?

2. **What?** Here just **describe**; do **not explain** or interpret. What happened ? Do **not** try to explain or interpret here; be **descriptive**. Consider: Facts, events, interactions, phases. Decision processes. Teamwork in your company (clarity of objectives, role clarity, balance, responsibility, listening, etc). Ship allocation strategies used. Your company's achievements. Evolution of the fish stocks. Ship acquisition (purchase, trade, auction). Account keeping. Negotiation with other companies. Trust levels.

3. How well do you feel your company succeeded in the negotiations? How well do you feel the other companies succeeded?

4. **Why**? **Reasons** & **explanations** for events in N°2, and success / failure in N°3. For example: How did **emotions** influence events? Did **communication** problems influence events? How did **negotiation styles** influence outcomes? What was the role of **greed** (the desire to become rich, the desire to become rich**er than** others - to 'win' at all costs), and non-concern for next generations? What role did **intergroup behaviour** play? What **factors** encouraged success? What factors made things difficult?

5. **Trust.** How did your trust and feelings of trust evolve during the course of the exercise? What influenced the changes in trust? How did levels of trust influence decisions and interactions? What kinds of vicious circles developed around issues of trust. What did you do to re-establish trust, or indeed to take advantage of a climate of distrust? What about **greed**?

   … / …

6. **Objectives -** commons. What kinds of objectives did you have? How did they evolve? For example: did you assume that your main objective was to get as many **fish** (and money) as possible for your company? or did you assume that you had to share **common resources** among companies, for a **sustainable future**. What other objectives? Did you attain your objectives? Why / why not? If you did not, who was **responsible**?

7. **Real world.** What analogies can you make with the real world ? What other natural resource commons are being plundered in this way? What kinds of overshoot & collapse are we witnessing today (overshoot = using resources faster than they can regenerate; going beyond the limits of sustainability). (Examples: trees, alcohol, urbanization, debt, water, soil, etc, etc.) What about tomorrow? What are the main dangers in your lifetime?

8. **Changes**. If you were to participate again in FISH BANKS, what would you do **differently**? What different **policies** (objectives) would you pursue, and **how** would you achieve your objectives?

9. **Solutions**. What 'solutions' to consider, for fishing and for **food** in general? What kinds of measures should be taken (local, regional, global) to reduce over-exploitation, overshoot and collapse? Role of technology? Partition the seas; quotas; farm fish; eat food lower in the food chain; change consumption preferences; ban meat; ban all pollutants, insecticides, chemicals; use of technology; world government for food; monitor food better; change social values and economic incentives**.**

10. Other thoughts, questions, issues related to sustainability and the future of the planet?

11. **Your future.** In what ways will this simulation experience, and especially your heightened awareness of the **issues**, influence **your future** outlook and your future career?

Fig. 6.15 Individual debriefing form for Fishbanks

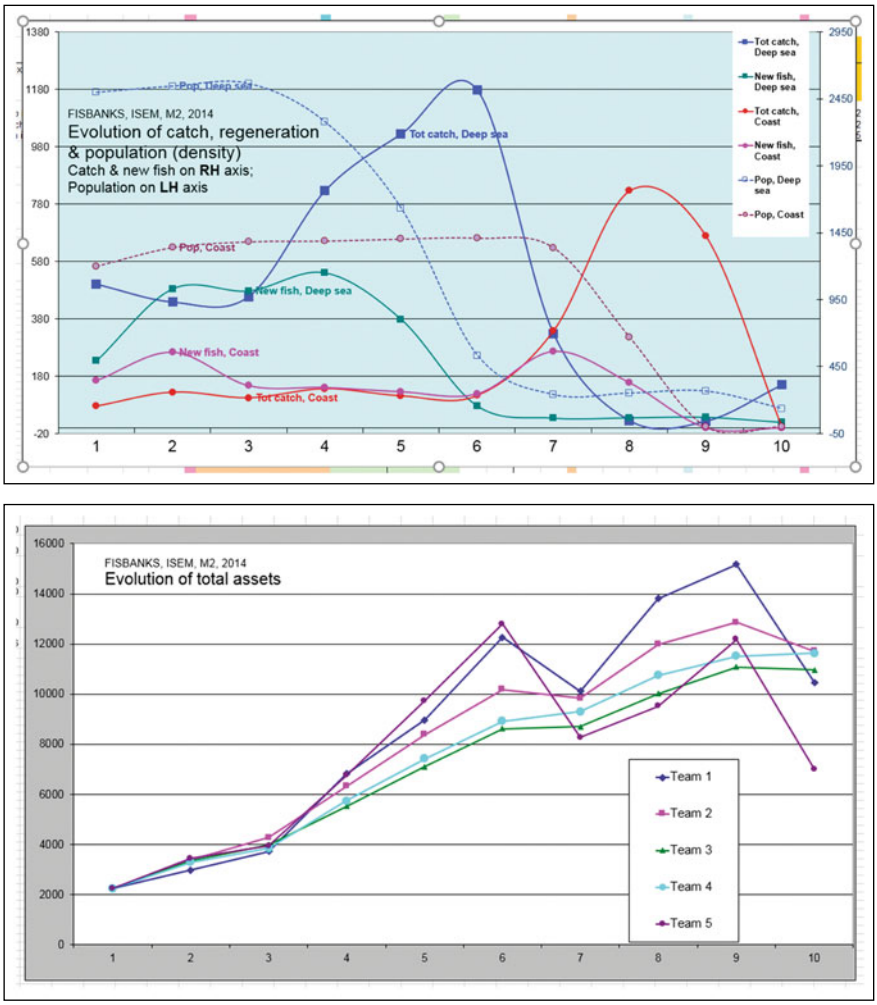

Fig. 6.16 Two graphs used for Fishbanks in a Masters level class

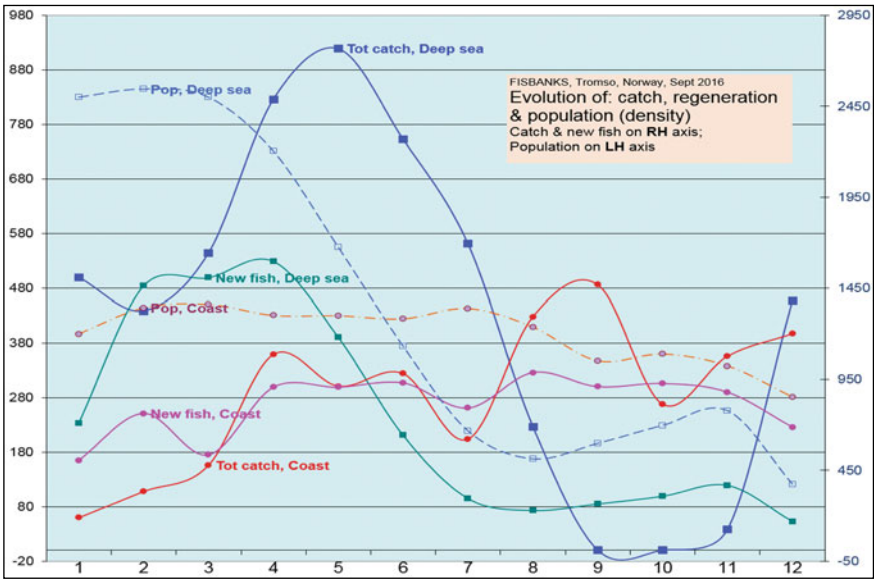

Fig. 6.17 Graph developed during Fishbanks in Tromsø University Fisheries Dept

Debriefing forms for ICEWISE

A full account of the simulation, *Icewise*, and its use will be found in (Blair et al., 2022). In a word

> Our custom-developed computerized simulation game *Icewise* integrated sea-ice parameters, forecast technology and human factors, as a participatory environment for stakeholder engagement. We explored the value of … sea-ice prediction and linked uncertainty information.

This was a one-off simulation and had not been fully tested before being used for real, that is, with its intended audience. It was, therefore, important also that the debriefing instruments were spot on. Given that the debrief had three main objectives, (1) generate data, (2) provide an opportunity for the stakeholders to discuss and compare options and (3) provide a space in which they could make preliminary decisions, the debrief was clearly as important as the simulation itself. The original form allowed more space for writing. For example, the left-hand column was narrower, which made the space for writing in the right-hand column wider and deeper (Fig. 6.18).

IceWise, Salienseas, Tromsø, Norway **individual** debriefing	1st & 2nd names _____ Org

You have now left the simulation and moved on from the emotions that you felt.
Work alone & in silence; no talking with neighbours.
For each question, write only a few key words or phrases (as a reminder for discussions later).

- Think back to the simulation and recall your participation a little bit as if as if you had been an observer.
- This form is for you to clarify and record your thoughts.
- In the upcoming discussion, you will not be required to share any more than you wish.

What were your various **feelings** / **emotions** during the simulation? Examples: pleasure, sadness, good humour, interest, frustration, curiosity, boredom, anger, calm, untrusting, hope, irrelevance?
How did your emotions **evolve** over time?

Please do not shy away from expressing your emotions, even if you generally do not do so.	Emotions are part of what makes us human. Emotions influence every aspect of our lives and decision making. Emotions are always there, even if we do not usually express them easily and openly, and even if we are not always aware of them or what type they are. After we put a name on an emotion and share it, we are in a way liberated from the taboo of the emotion, and can then think more clearly about our actions, interactions and decisions.	In the discussion that follows you will of course choose which emotions to share. However, in the space above, please write down as much as you are comfortable with mentioning.

How did your various **emotions influence**:

- Your **motivation** to participate?
- Your perception of the (lack of) **realism** of the simulation?

What **differences** and **similarities** did you see between the **simulation** and **reality**?
Examples: 1 in configuration, 2 in your participation, 3 in feelings.

What elements in the simulation influenced your sense of **confidence** in the **reliability** of **forecasts**?
Why and **how** did these elements influence your confidence?
Examples: 1 your emotions, 2 the realism of the simulation, 3 the business aspects, 4 the event cards, 5 other participants, 6 the simulation design, 7 decision making, 8 etc.

How would you **change** the simulation? What would you have put **in**, taken **out** of, or **modified** in, the simulation if you had to participate again?

In what ways has the simulation changed your **perception** of the **reliability** of MET.no's forecast product?

Are you more or less **likely** to use MET.no's new forecast product as a result of participating in the simulation? Why?

What thoughts or **ideas** of yours about voyage planning have **changed**, or new ones been **generated**, as a result of participation? What **elements** of the simulation contributed?
Examples of thoughts, ideas & elements may be: 1 simulation design, 2 simulation participation, 3 learning to play in the simulation, 4 objective reliability of forecasts, 5 your confidence in forecast reliability, 6 your confidence in voyage planning, 7 etc.

Fig. 6.18 Individual debriefing form for IceWise, Salienseas, Tromsø, Norway

What **advice** would you give to MET.no for **modification** of the design of their product?	
What advice would you offer to the simulation designers and/or the facilitators?	
What do you promise yourself to do or **do differently** as a result of participation?	
Any other **comments**?	
Thank you for your participation !	

Fig. 6.18 (continued)

After filling out the individual form, participants gathered in small groups to share experiences. They were given the group sharing form, Fig. 6.19, below, and asked to record notes during the discussion. These notes were then used in a report for the sponsors, along with a record of the decisions made during the simulation. You will notice that the cell borders have wavy lines and that the questions are in italics. This is simply so that participants and facilitators can easily distinguish between individual and group forms. I usually do that for most forms that have an individual and a group version. If it is possible, I also use a different colour paper for individual and group forms.

IceWise, Salienseas, Tromsø, Norway
***group** sharing debriefing*

1st & 2nd names _____
Org

You are now in the **sharing** phase of the debriefing. You may share anything from the previous individual work, but you are under **no obligation** to share if you do not feel comfortable sharing a particular item.
In the spaces below, do **not** simply make a catalogue of all the things that your group says; that is not the aim. From time to time, especially before you move to a new topic or section, write **notes** below
to capture the **essence**, the **overarching ideas** and/or the **general drift** of the discussion so far (not the details).
Be in the discussion, listen, share, spark new ideas, be convinced, convince; above all be **respectful**.
Make a special effort to contribute to a **balanced** discussion. Avoid talking too loudly.
Remember that **silences** are to be welcomed; they can enrich a discussion.
Always remember that the **debriefing** is the most important and **enriching** part of a simulation/game.

*What were your various **feelings** / **emotions** during the simulation?*
*Examples: pleasure, sadness, good humour, interest, frustration, curiosity, boredom, anger, calm, untrusting, hope, irrelevance, etc? How did your emotions **evolve** over time?*

*Please do not shy away from **expressing** your emotions, even if you generally do not do so.*

*Emotions are part of what makes us **human**. Emotions **influence** every aspect of our **lives** and **decision** making. Emotions are **always there**, even if we do not usually express them easily and openly, and even if we are not always aware of them or what type they are. After we put a **name** on an emotion and **share** it, we are in a way **liberated** from the **taboo** of the emotion, and can then **think** more **clearly** about our actions, interactions and decisions.*

*How did your various **emotions influence**:*
- *Your **motivation** to participate?*
- *Your perception of the (lack of) **realism** of the simulation?*

*What **differences** and **similarities** did you see between the **simulation** and **reality**?*

*What **elements** in the simulation influenced your sense of **confidence** in the **reliability** of **forecasts**?*
***Why** and **how** did these **elements** influence your confidence?*

*How would you **change** the simulation? What would you have put **in,** taken **out** of, or **modified** in, the simulation if you had to participate again?*

*In what ways has the simulation changed your **perception** of the **reliability** of MET.no's forecast product?*

*Are you **more** or **less likely** to **use** MET.no's new forecast product as a result of participating in the simulation?*

*What **thoughts** or **ideas** of yours about voyage planning have **changed**, or new ones been **generated**, as a result of participation? What **elements** of the simulation contributed?*

*What **advice** would you give to MET.no for **modification** of the design of their product?*

*What **advice** would you offer to the simulation **designers** and/or the **facilitators**?*

*What do you promise yourself to **do** or **do differently** as a result of participation?*

*What do you promise yourself to **do** or **do differently** as a result of participation?*

*Any other **comments**?*

Thank you for your participation !

Fig. 6.19 Group sharing debriefing form for IceWise, Salienseas, Tromsø, Norway

PROFFIteROLE

PROFFIteROLE (the name of a delicious French pastry) stands for "pratiques officinales et jeu de rôle", pharmacy practices and role play. It was designed at the Pharmacy Faculty in Lille (see Collomp, n.d.; Collomp et al., 2020; Decaudin & Crookall, 2015; Bodein et al., 2023). I was invited up to help with the debriefing. Together we developed a simulation-debriefing protocol that worked well.

The purpose was for pharmacy students to learn to interact with the public and follow protocols in handing over medication. We had three roles: patient, pharmacist and observer. With three different scenarios, each student in turn played one of the roles. The events took place in a simulation centre (see Fig. 6.20), and the pharmacist–patient interaction was filmed.

Debriefing was individual and collective. Among the documents provided were an observation guide (filled in by the observer), the patient's medical history, a doctor's prescription, an individual debriefing form and a collective debriefing form. As with previous forms in this Appendix, you will need to stretch them so that participants have more space to write. As a general guideline, you can fill a whole A4 page with one form.

Fig. 6.20 Simulated pharmacy in Lille

Observer guide for PROFFIteROLE	Role	First name (write below)	
Remember that this guide is not a strict evaluation instrument. It is a guide to help observers organize their observations. Interpretation of the terms in this guide and the observations remain subjective. The guide collects impressions to serve as a starting point for discussion in the debriefing.	Pharmacist Patient Observer		
Adapting the dispensing to the individual patient	Good ☐	Fair ☐	Improve ☐
Relevance of the questions	Good ☐	Fair ☐	Improve ☐
Listening to patient (information, worries, …)	Good ☐	Fair ☐	Improve ☐
Relevance of the analysis (of the prescription)	Good ☐	Fair ☐	Improve ☐
Identification of key points	Good ☐	Fair ☐	Improve ☐
Adapted dispensing (drugs / dosage / generic)	Good ☐	Fair ☐	Improve ☐
Relevance of information transmitted to the patient	Good ☐	Fair ☐	Improve ☐
Understandable information	Good ☐	Fair ☐	Improve ☐
Suitable amount of information transmitted	Good ☐	Fair ☐	Improve ☐
Welcome, attitude, approach, friendliness	Good ☐	Fair ☐	Improve ☐
Ability to convince the patient	Good ☐	Fair ☐	Improve ☐
Check list of information communicated 2 good, 1 ok, 0 missed	Explained by pharmacist	Verified by pharmacist	Understood by patient
INR monitoring			
Reporting Warfarine (Coumadin) treatment to health professionals			
What to do in case of bleeding			
Treatment plan notebook			
Nutrition (food)			
Medical advice if necessary			
Comments			

Fig. 6.21 Observer guide for PROFFIteROLE

Individual debriefing for PROFFIteROLE

Work alone; do not talk toanyone. Write just a few keywords.All ideas, thoughts, feelings and comments are welcome. Later in a discussion, you may share what you wrote, but you will not have to show your paper if you do not wish to do so.

Name _____ Role _____ Group _____ Date _____

As **pharmacist**: Use only your column	As **patient**: Use only your column	As **observer**: You may write in all 3 columns
What were your various feelings (emotions) during the role-play ? (For example, excitement, shyness, confidence or lack of, frustration, annoyance, belonging, …		
Happenings, behaviours, surprises, problems, etc. Note down just one or two.		
Differences and similarities with the 'real' world. Are those differences/similarities helpful for your learning, or a hinderance ? In what way ?		
Difficulties experienced. What specific difficulties did you experience (in regard to the situation, your role, your task, the other participants, in general, …)		
As a participant in the role-play, what things will you do differently next time ? (Examples : Jump into my role faster, forget about the observer, etc.)		
As a trainee pharmacist, what things should the role-player pharmacist do differently next time? Give suggestions for improvement, from your point of view (as pharmacist, as patient, as observer). Be specific.		
What specific things would you like to talk about in the collective discussion later ?		

Fig. 6.22 Individual debriefing for PROFFIteROLE

Collective debriefing of PROFFIteROLE – Debriefer's note-taking form

Discuss a short while, then write notes (keywords) to capture the essence of the discussion. Do not write a list of all things said, just the general idea. All ideas, thoughts, feelings, comments are welcome.

Names _____ Groupe _____ Date_____

Essence concerning / for **pharmacist**	Essence concerning / for **patient**
Feelings during the role-play.	
Happenings, sequence of events, surprises, problems, etc.	
Differences and **similarities** with the 'real' world.	
Difficulties experienced.	
As a pharmacist or trainee pharmacist (in 'real life'), what things will you **do differently** next time ?	
What things have you **learnt** (doing the activity and the debriefing) ? About delivering medication, about pharmacist-patient interaction, about pharmacist work more generally, about yourself, about life ?	
Changes. If you use this exercise in your training/teaching, what things would you change ?	
Feedback to current facilitators. What things did you like ? What things would you suggest that the facilitators do differently ? (By name is fine – we want to learn too! ☺)	

Fig. 6.23 Collective debriefing of PROFFIteROLE—Debriefer's note-taking form

Classic, 50-Year Old Book Still Relevant for Simulation and Debriefing

Many years ago, I read the now-famous book *Teaching as a subversive activity* (Postman & Weingartner, 1969). It made an indelible impression on me. In the intervening years, the authors went back on some of their ideas. Despite that, it can be an inspiration to all those in simulation and debriefing.

I always find it a little strange to hear educators talk about 'delivery', as if learning was like a product to be delivered and dumped down the throats of people, followed a while later by excruciating hurdles, called tests and exams, which no one in their right mind would contemplate doing by themselves. Imagine going to a conference to hear a speaker and they told you that you would be tested at the end; everyone would double up in laughter, and yet this is precisely what happens millions, nay, billions of times a year in schools around the world. Would it not be better for climate and vaccine deniers to put their skills to good use by demonstrating the futility of school exams and tests?

Very relevant to debriefing are these quotes from the book:

> Once you have learned how to ask questions—relevant and appropriate and substantial questions—you have learned how to learn and no one can keep you from learning whatever you want or need to know.

> Unless … perceived as relevant by the learner, no significant learning will take place. No one will learn anything he doesn't want to know.
>
> The critical content of any learning experience is the method or process through which the learning occurs.
>
> Almost any sensible parent knows this, as does any effective top sergeant. It is not what you say to people that counts; it is what you have them do. … What students do in the classroom is what they learn (as Dewey would say), and what they learn to do is the classroom's message (as McLuhan would say). Now, what is it that students do in the classroom? Well, mostly, they sit and listen to the teacher. Mostly, they are required to believe in authorities, or at least pretend to such belief when they take tests. Mostly, they are required to remember. They are almost never required to make observations, formulate definitions, or perform any intellectual operations that go beyond repeating what someone else says is true.
>
> As soon as [tests] are used as judgment-making instruments, the whole process of schooling shifts from education to training intended to produce passing grades on tests. About the only wholesome ground on which mass testing can be justified is that it provides the conditions for about the only creative intellectual activity available to students—cheating. It is quite probable that the most original "problem solving" activity students engage in in school is related to the invention of systems for beating the system. We'd be willing to accept testing if it were intended to produce this kind of creativity.

By the way, the book has a whole chapter (N°11) on games in education and mentions some of the early gamers, especially the late Harold Guetzkow (1995), one of the founders of modern academic simulation. He did me the honour of inviting me to be on a panel that he organized at a meeting of the International Studies Association and to visit him and his wife at their California retirement home. See also Guetzkow and Valadez (1981), Druckman (2011a, 2011b) and Ward (2019, 2022). The other pioneering gamers mentioned are …, well I will let you discover them for yourself when you read the book.

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Not all the references below have been cited in the chapter. Some additional references have been inserted below to help you pursue this area further. It is also likely that some references that should have been mentioned are missing. For the missing ones please send me a link to an open access source, and failing that, to send me the missing document (pdf preferred).

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