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and Vincent Peters⁵

Abstract

In this article, the authors reflect on the question why simulation games are such an effective tool for learning. The article is based on the authors' experience and that of many other practitioners in the field. The article posits that it is the confluence of systemic knowledge, practice, emotional involvement, and social embeddedness that creates the potential to achieve results that no other methods can match. A simulation game run constitutes a bout of individual and collective purposeful action by an individual or a group formed specifically for that purpose. People have evolved to be supremely good at just that. Simulation games can teach systemic knowledge, and they can enable participants to try out organizational changes. This potential is not always realized, however. Game runs are “alive” and variable, and this is a risky strength. They activate not only the explicit rules but also the hidden cultural rules of the participants. This can lead to memorable learning as well as to frustration, particularly when games are used across cultures. The article specifies reasons why games could fail and offers ways to avoid these pitfalls. It shows that experience and craftsmanship are needed in game design, facilitation, and debriefing.

Keywords

culture, effectiveness of simulation gaming, emotional involvement, facilitation, fail factors for simulation games, game design, *Homo ludens*, learning, magic circle, practitioners, simulation games, social embeddedness, strengths of simulation games, systemic knowledge

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“It works; that’s all we have.” These words by Dick Duke, one of the founding fathers of simulation gaming, summarize the state of knowledge that has long been characteristic of the simulation gaming world. Wolfe and Crookall (1998) suggested that the field’s eclectic foundation has been a virtue for its development but a vice regarding its rigorous assessment. Chin, Dukes, and Gamson (2009), reviewing 40 years of assessing simulation gaming outcomes, note that while circumstantial evidence for attitudinal effects is huge (see also Pierfy, 1977), assessing simulation games is difficult because experience shows that facilitators often have to make decisions “on the fly” during runs and this situation is hard to reconcile with collection of assessment data in a controlled setting (see also Reynolds, 1997). Crookall and Arai (1995) also asserted that simulation/gamers are “interdisciplinaryists” by nature. They build simulation games and solve practical problems through them regardless of discipline. They are not so interested in justifying their work. Simulation gaming is a discipline that cannot afford to isolate itself in an ivory tower, because practice is central to it. This puts simulation gaming in one bucket with a host of training tools for practical, integrated skills. Practice makes perfect, whether for cooks, football players, car drivers, or game designers. In this article, we will often use the term *game* to refer to the broader activity/object “simulation game.”

Proving that simulation games work reminds us of high school math in which one had to build a complicated argument to prove that two triangles had the same shape when one glance at the figure sufficed to confirm that they did. The effectiveness of simulation games is evident to those who work with them (players and facilitators). Unfortunately many people still do not take games seriously, probably because their association with childhood or with the frivolous (Sutton-Smith, 1997). The introduction of computers and the web and the adoption of the term *serious games* have certainly created a bandwagon effect. That effect may wear out, still leaving the field with the assignment to convince skeptics with force of arguments that simulation games work. More precisely the questions are: Why do games work and for what kinds of situations, and what should be the roles of designers, facilitators and players? An analogy can be made with an aspirin: Taking an aspirin could help because of the acetylsalicylic acid in it, or by a placebo effect, or through the love with which it is administered, or because of the glass of water one takes with it—or perhaps the effect could depend on who takes it and for which ailment. Likewise, a simulation game could work through some property of games, or through the quality of the simulation model, or through the composition of the group that performs it, or through the expertise of the facilitator, or through something else yet again, or through a combination of all of these.

The Aim of the Article

We took a step forward by approaching a selection of simulation gaming practitioners from all around the world and asking each of them to put down in a brief essay what, in their experience, constitutes the essential element of simulation gaming that makes it work as a tool for learning. The authors collected these contributions, discussed them with the contributors and other participants at an International Simulation and Gaming Association conference, and combined them into a book (de Caluwé, Hofstede,

& Peters, 2008)—see acknowledgment at the end of this article. The contributions of the practitioners in the book present personal viewpoints and do not give the same message. This is just what was expected: Games are not used in the same way by everybody. The range of techniques and application areas is vast. Yet a common trend appears in these contributions. The present article attempts to formulate the big picture that is implicit in it. The article takes a synthetic perspective. Our hope is that it will help simulation gamers justify their work and other readers gain an understanding about the impact of simulation games. This article is more a synthesis than a review, based on (some of) the lessons drawn by practitioners who contributed to the above reference book and on other relevant sources. In this synthesis the signature of the authors is clearly present. These Dutch authors represent a Dutch perspective but at the same time an international outlook. This matters, because culture is necessarily part of simulation gaming, as will be elaborated on below.

Note that the article does not attempt a rigorous definition of simulation games. The term *simulation games* in this article could refer to, among others, computer games, card games, role-playing games, game design exercises, day-in-a-life simulations, or other collaborative simulation. Though each of these forms obviously has its proponents, strengths and limitations, it is the common ground that is aimed for. The authors admit to having a bias toward social games, that is, games in which several players interact at the same time in the same physical environment. This is because the potential benefits of simulation gaming are most obvious in social situations. Most of the contents of this article are valid for group as well as individual learning.¹

The article is structured in the following way. We start with observations from the field, with remarks about the learning potential of simulation games and the basic questions for designer and participant of games (the second section). Then we will present four strengths of simulation games (the third section). The fourth section describes reasons for which games can fail. We will draw conclusions in the final section.

Building Blocks for Our Synthesis

Observations From the Field

As a first step in grasping the essence of simulation gaming, the authors put together a list of observations about it that they have made as designers and facilitators. They discussed these among other practitioners. Figure 1 summarizes these observations. It is interesting to note that the observations mainly fall within the emotion and social aspects fields. These have been most salient to the practitioners, because based on experience they turn out to be constant factors. Other sources agree with these findings: A review of 40 years of business gaming shows that active decision-making experience and teamwork were among the top five reasons for using the games throughout this period (Faria, Hutchinson, Wellington, & Gold, 2009).

The figure does not pretend to be exhaustive. The usual issues such as the game's quality in terms of the system model or the quality of the facilities have not made it to our list. Of course, these are important concerns. This time, however, we want to

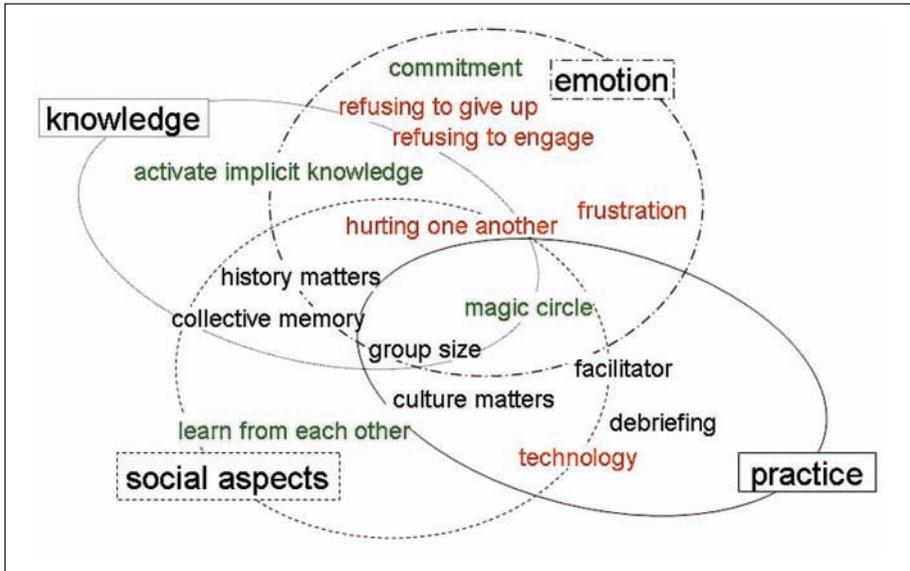


Figure 1. Observations by practitioners about factors that are essential in simulation gaming.

focus on the emotional and social aspects of games, because practitioners find them so important.

Learning Through a Game

An important implication of Figure 1 is that it shows that, while successful learning pertains to knowledge and practice, (pre-)conditions of learning concentrate in the social and emotional aspects. What is most salient during a game session is not necessarily linked to the game’s stated objectives. In other words, a game could be designed for learning about topic X but depending on many factors such as the design quality, the goals and course of a particular session, coparticipants, and facilitator, a participant could learn many other things beside X, or other things but not X, or nothing at all. The game-in-the-box may differ largely from the game-in-use (Vissers, Peters, Heijne, & Geurts, 1999). This may be one of the reasons why people are reluctant to invest in simulation games: a degree of unpredictability and attendant risk. “No pain, no gain” is a dictum that one can hear from gamers,² and it bears truth. Implicit learning, unconscious learning and social, emotional, and cognitive aspects are all part of learning processes in general (Ruijters, 2006; Simons, 2008) and part of learning by games.

So what aims could be pursued through simulation gaming? A well-known typology of aims is to distinguish awareness, knowledge, skills, and motivation. Games can be used for all of these. Typically, awareness of the importance of an issue motivates people to seek knowledge about it and discover that they lack some necessary skills. Gaming

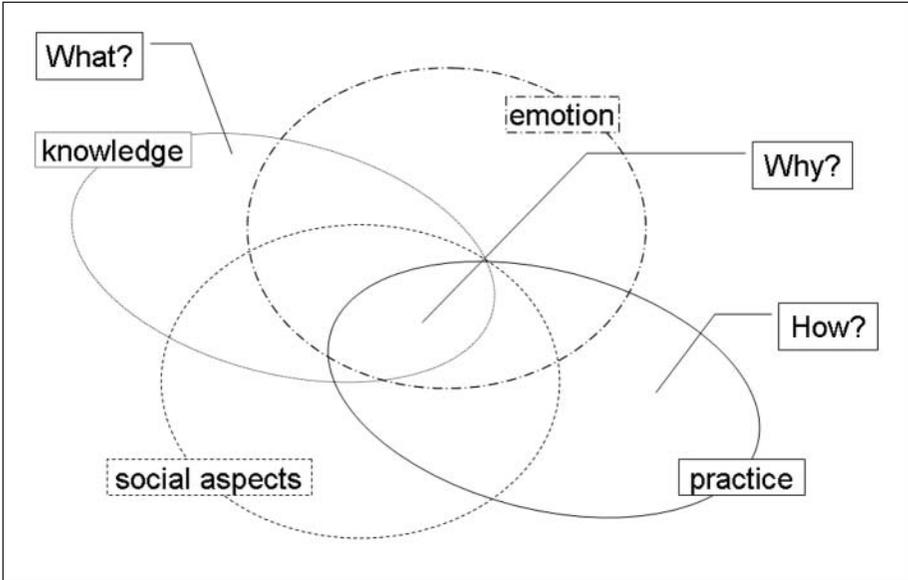


Figure 2. Important areas of attention and key questions in the practice of simulation gaming.

is a powerful motivator particularly for issues that are unconscious before the game. Engaging in a simulation game can make people conscious of the importance of issues and their lack of knowledge or skills. It can also create a strong sense of individual or shared commitment.

A simulation game consists not only of play. Participants could be involved in designing the game, some could be involved as observers, and all should be involved in a thorough debriefing session in which the link is made between the gaming sessions and the lessons to learn. So learning is not exclusive in the role of the participant. Learning pertains to observers, designers, and facilitators as well.

The Basic Questions for the Designer, the Participant, and the Facilitator

Three basic questions concern the designer, participant, and the facilitator. These are the what, the how, and the why. We present these questions in Figure 2, in which we also integrate the spheres of attention of Figure 1.

Chronologically, a designer will most probably start with the cognitive aspect. This is the *what*, that is, the sphere of knowledge about which a simulation game is to teach its participants. The next step is the action, or *how*, that is, designing a simulation game that will include the main issues to learn about. As to the *why*, that will be different for the designer than it is for the participants. To the participants, the two spheres:

emotion and social aspects tend to be paramount: Is participation emotionally rewarding or risky? And what are the social incentives of engaging in the game together with the other participants? And finally the facilitator (who guides the game) will have to balance all four fields of attention, starting with emotional aspects and ending with the system knowledge that the game intends to convey. If participants have also been involved in designing the game they may relate to it in a different way because they also have stake in the “what” and “how.” Indeed, it has been shown that designing a game can be very instructive in its own right. Druckman and Ebner (2008), working with Australian and Israeli students, found that design of a negotiation scenario was a more effective learning tool than role-playing it.

Four Strengths of Simulation Games

In this section, we will describe four strengths of simulation games. They concentrate on the integration of cognition, emotion, and action; the strong reproduction of social life; the multiplicity of rules; and learning about organizational life and change.

Simulation Games Integrate Cognition, Emotion, and Action

One obvious aspect of simulation gaming that sets it apart from most contemporary academic disciplines is that their design, playing, and debriefing require synthesis. In a time of rapidly increasing specialization in the sciences, this makes simulation gaming an outlier. A gamer is more like a general practitioner than a medical specialist.

Looking back on a life spent in leading roles in public and business administration, and trying to make sense of his experiences, British author Sir Geoffrey Vickers (1965) made a useful distinction into three kinds of judgments that people need to make: judgments of facts, judgments about what is desirable, and judgments about what to do. The three kinds of judgments relate to the domains of (a) cognition; (b) ethics, emotions, and culture; and (c) action and change. The integration of the three is always needed in life, particularly by leaders of any kind. One must gauge the situation using relevant knowledge, judge its desirability and acceptability to all stakeholders, and then decide on a course of action. This integration is catered for by practitioners of simulation gaming. Simulation games are therefore well suited as tools to acquire cognitive skills that in real life have to be performed under stress and with great risk and as tools to integrate cognition, emotion, and action in social settings. For this latter reason, they are especially useful to help acquire organizational and leadership skills. We will elaborate on this further in the section on organizational life and change.

Not only the participants but also the other parties involved in simulation gaming have to think synthetically:

- Simulation games call for integration of faculties on the part of the **designers**. Holistic thinking about a problem area, integration of all the relevant disciplines into a model, and incorporation of playability concerns are all required. So a

designer (or a group of designers) is obliged to think in an interdisciplinary way. Then, that designer has to build a game, making choices.

- Simulation games call for integration of faculties on the part of the **players**. In games intellect, motor skills, control of emotions, and social skills are all activated in an integrated, purpose-driven way. After the experience, participants are explicitly asked to make sense of the simulation game, their role, and the relevance of all of this for real life. So it is a two-step event as far as the participants are concerned.
- Simulation games call for integration of faculties on the part of the **facilitators**. They need to carefully balance between the role of instructor, motivator, content expert, authority, and fly-on-the-wall. They need to subtly guide, help, seduce, confront, or constrain participants. Their finest hour, professionally speaking, is at evaluation or debriefing time when they can make the difference between “just” an experience and a link between this particular experience and the game’s purpose in terms of learning.

Simulation Games Reproduce Social Life

The lives of people consist of many activities. Part of this is organized, collective purposeful action, especially when we look at organizations. Every time we gather around a ball to have a match, or around a table to start a project, or around an enemy to have a fight, we engage in purposeful action in a group that assembles for that purpose. This is no coincidence. It has deep roots in our history.

Group-level selection. Our ancestors have lived through millions of years of cultural selection during which groups of humans that were less skilled for collective purposeful action have lost out against those that were better at it. Military process and technology were important, and so was social cohesion. People owe their social nature to a long evolution of group-level selection that has made organized groups similar to superorganisms (D. S. Wilson, 2007). Human groups—up to the level of society—can achieve things that no single individuals could do. However, groups are even less suited to learning from a book than are individuals. This makes simulation games particularly important as a means of making groups learn (For an illustration, see figure 3).

Our evolution has thus shifted from being primarily genetic, as with our relatives in the mammalian world, to being primarily cultural. All humans in the world are genetically more alike than all chimpanzees (Richerson & Boyd, 2005). At the same time, human cultural variation is staggering (G. Hofstede, Hofstede & Minkov, 2010). Culture is described by Hofstede and Hofstede as the unwritten rules of the social game in a society. A society is meant as a group in which people live from birth. It is often a nation but it could also be the case that regional, ethnic, or religious groups are the primary social environment. The point about culture is that it is unconscious. *Homo sapiens*, “knowing man,” has trouble understanding culture. *Homo culturalis* is unconsciously competent in his or her own culture.

Conscious or not, people are continually finding out and creating the unwritten rules of interaction in the groups in which they find themselves. This has two implications



Figure 3. A group learning through joint focused attention.

that are very important. The first is that any two people, when they first meet, might have misunderstandings because of different cultural rules, for instance, about proper greeting ritual. The second is that a group of people who have never met before, if they find themselves forced together for any length of time, will soon start to create implicit rules of behavior. It is in our nature to create culture when we are in a social situation. Both cross-cultural misunderstandings and creating shared implicit rules are usually unconscious processes.

Rituals. Social life proceeds in coherent units that are often called rituals. We have rituals for greeting, eating, buying, negotiating, saying goodbye, and so on. We also have smaller rituals for interpersonal cues: making eye contact, holding gaze, keeping a certain distance, not answering a question, being relaxed, being markedly polite, and so on. In short: our days are filled with actions that have a symbolic meaning beyond what is apparent. Moreover, these rituals and symbolic meanings differ across groups and societies.

Some rituals mimic others. People recreate their social world by simulating it. This is visible in any theatre performance. It is also literally visible in the use of new communication technologies or “social software.” Facebook, LinkedIn, and Twitter, for instance, are machineries to create communities and norms and enforce them. They are

institution-creating and -supporting technologies. The social complexity that users create is impressive and constitutes a case of rapid cultural evolution.

It is a small step to consider simulation games as special cases of the rituals that constitute our daily lives. Huizinga (1938/1952) made a very important point when he termed our species *Homo ludens*: “playing man.” When we attend a party, or a church service, or a meeting, Huizinga might have said that we are creating and playing simulation games. The difference with the simulation games this article describes is that most of us take rituals more seriously if they are not named “game.” Yet this is only a gradual difference. Some people actually take the “magic circle” of simulation games with deadly seriousness. This is because simulation games build on a very solid foundation. They reproduce the essence of what it means to be human: gather around a task in a group formed for that purpose and try to do well.

Simulation Games Have a Multiplicity of Rules

Simulation games are environments with a clear infrastructure of rules, roles, and incentives to start with. Based on these, they leave room for letting a unique process unfold during a game run. The rules are not fully specified. The more interpersonal interaction a simulation game allows, the more leeway it provides for unwritten rules to operate. In this way, simulation games are very similar to the institutions with which our societies are filled and that all of us populate daily. For instance, a church service has common formal elements across a wide range of religions, such as taking a place, listening to a priest, praying, being silent, and singing. Other elements are not formally specified. What fraction of total time is spent on each of these activities, how the congregation members are dressed, how people are spread across the room, what style they sing, whether they talk or whisper among each other during the service—these are very different, so that the “look and feel” of church services differs greatly across religious groups.

This “look and feel” depends on unwritten, cultural rules. Such rules cause two runs of the same simulation game to be different in predictable ways if the participants are from different cultures. A very convincing demonstration of how a simple simulation game reproduces the unwritten social rules of the participants in a game run is presented by Henrich et al. (2005). In an impressive concerted research effort, these authors played the Ultimatum game with ordinary people in 15 small-scale societies in various continents. The Ultimatum game is extremely simple. It consists of one round for two people: the “offerer” provisionally receives a dividable resource, usually money, and can offer a fraction of it to the other, and the “responder” can accept or refuse. If the responder accepts, both can keep what they have. If the responder refuses, neither gets anything.

The usual economic logic is that offering too little is selfish and might induce the responder to refuse. In student populations, modal offers (the ones occurring most frequently) are always 50% and mean offers lie between 40% and 45%. Henrich et al. (2005) found unambiguous evidence that the participants from their 15 cultures did not enact *Homo economicus* but *Homo culturalis*. In other words, the participants tried to behave decently according to the rules for repartition of goods prevailing in their society.

For instance, among the Au, living in the New Guinea highlands, offerers presented up to 70% of the prize to their opponent, but these offers were usually refused. Accepting such a big present would have created too much of an obligation. Not offering it, however, would have indicated stinginess on the part of the offerer. On the other hand, the Quichua in tropical Peru usually offered only 25%, and almost all of these offers were accepted. This is a horticultural society with hardly any trade tradition. The Lamalera from Indonesia, collaborative fishermen, almost always offered 50% or more.

Mutatis mutandis, the same is true for all societies, including modern industrial nations: we enact *Homo culturalis* in simulation games, of which *Homo economicus* is no more than a special case. If it is true for simple games, it is true for more complex simulations, for example, “a-day-in-a-life” simulations of organizational changes.

Games Are Ideal for Learning About Organizational Life and Change

Organizations exist in a world of the feasible. All new ideas are tested against practice. A good idea that does not fit the wider system in which it is implemented will fail. In other words, a strong selection operates against bad innovations. This makes it risky to innovate. However, not innovating while others do is also dangerous. Therefore, a strong case can be made for trying out innovations through pilot projects or, at an even earlier stage, through simulation games. This allows one to learn from practice without incurring real-world risk.

What is it that makes organizations successful? Besides knowledge and good judgment, a shared sense of purpose and optimism is important to their success. On the contrary, fights for leadership, for instance, can do a lot of harm. This is another argument in favor of simulation games. They test not only the knowledge and intellectual skills of participants but also their capacity for collaborative action.

Simulation games couple thinking and doing. Participants are constantly thinking, acting, and considering. They are confronted with actions that they do not want to take or with consequences they do not want to accept. Or vice versa: They want to achieve something and develop or learn the purposeful acts that are required for this. The process of sense making is the key of learning in a game: Through the process of visualization and verbalization, people learn about their actions, thoughts, goals, and results. They also learn how to change these if necessary. They do this during a game and consolidate it during debriefing. The process of concrete experiences, (self-) observation and reflection, formation of new thoughts or concepts, and new actions are constantly in action.

A group that plays a game can be seen as a microorganization where all aspects of the organizational life develop: strategy, structure, culture, roles, communication, leadership and conflict. Simulation games are structured exercises for trying out here and now the future of cooperation and organizational life.

Summarizing, we can state that the strengths of simulation games is that they do not restrict themselves to single aspects or elements. Simulation games integrate a multiplicity of elements. Whether it is about emotions, cognitions, and action; the complexity of social structures; the multiple sets of standards and rules in groups or societies; or

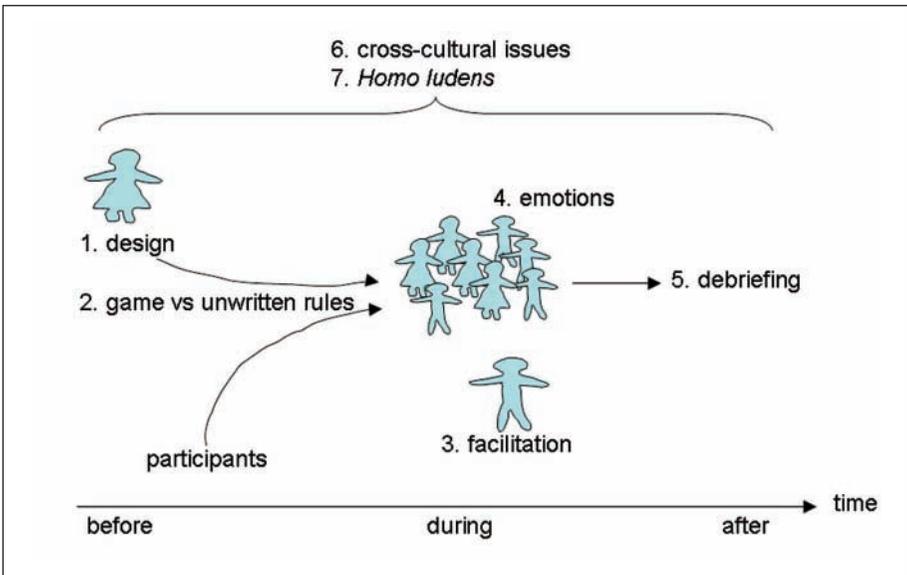


Figure 4. Seven possible sources of failure for simulation game runs.

different sets of competencies and faculties, simulation games are designed in such a way that participants are confronted with this multiplicity and are given the opportunity to explore the various aspects, confront, and even integrate them.

Why Simulation Games Can Fail

Figure 1 can also throw light on the reverse question of how to prevent simulation games from failing. Factors that have to do with emotions and the social process are important both for success and for failing of game sessions. Failing is not a straightforward notion, by the way, because many people are involved, and a failure from one perspective does not mean a failure from another person's point of view. The obvious example is that performing poorly during a game can be a very powerful source for learning, or a very powerful reason for frustration, depending on how the experience is handled. We will describe seven sources of failure shown graphically in Figure 4: design (1), rules (2), facilitation (3), emotions (4), debriefing (5), cross-cultural issues (6), and the *Homo ludens* pitfall (7).

Design

Designing a game is a difficult craft. One needs to simplify a real-world situation into a model, but one must not oversimplify it. The essential elements of the real-life situation of concern should be operational in the game. Actually, designing a simulation game is itself a very powerful tool for learning.

If one gets the model right, but the game is not enjoyable as a game because of lack of incentives, a wrong level of complexity, or other reasons, then the game will fail to motivate its participants, and participants may fail to learn just because of lack of involvement. Incidentally, it could help to have the participants act as game designers.

If one gets the model wrong but the game is enjoyable, then the participant may walk away happy but with an erroneous idea about the system of concern, which means that the designers will have failed, even if perhaps nobody notices. Even if the game model is correct and the game itself is enjoyable, facilitators must check whether the participants actually learned what the game set out to teach. Before this, at the time the game is being designed, the cycle from design to debriefing has to be explicitly closed by game designers. Design should be linked to debriefing.

Written and Unwritten Rules

The design of the game becomes explicit in its model that shows in rules, roles, and incentives. Besides these, as pointed out earlier, both the designers and the participants take many other rules with them. These are cultural rules about what constitutes appropriate behavior in certain settings. The design of a game always carries the unconscious assumptions that are part of the culture of its creators. Likewise, to the participants a game run is always an interplay of written and unwritten rules.

This means that the same game, played with participants from different cultures, can yield very different outcomes. This can be baffling to a facilitator very experienced in one part of the world but not in another. It happened to Elizabeth Murff (2008) from Eastern Washington University in the United States, experienced in playing the evergreen game *SO LONG SUCKER* with local kids, when she played the game with Taiwanese students. Basically the game aims to teach “survival of the most opportunistic political maneuverer” in an incentive system where ad hoc alliances are possible and bad performers get ejected. While games typically lasted a few minutes with U.S. participants, the Taiwanese managed to play for hours without kicking anybody out. The same written rules, but different unwritten ones, yielded an altogether different experience.

These cross-cultural differences are predictable to somebody who knows about the culture of the participants. Meijer found them in playing a trade game about trust and cheating, the *TRUST & TRACING GAME* (Meijer, Hofstede, Beers, & Omta, 2006; Meijer, Hofstede, Omta, & Beers, 2008). While Dutch buyers in the game were reluctant to trace deliveries, Americans did it massively, even though costs were attached, because they believed that without that their buyers would not believe their quality claims. The Dutch live in a society where trustworthiness is taken for granted much more than in the United States.

Murff’s (2008) article describing her experiences was refused by a journal on the grounds that *SO LONG SUCKER* is an old and well-known game and we know all about it. It turns out, however, that cultural differences can cause the same game to have very different learning results in different cultural environments. A game could “fail” in the eyes of the facilitator just because the participants, taking their cultural background



Figure 5. Engagement and safe atmosphere during a simulation game.

with them into the game, create a new kind of incentive system. This is an area that merits serious attention from the simulation gaming community.

Emotions

Emotions can be strong motivators for learning, as well as strong inhibitors. Participants who are afraid will become defensive and refuse to engage. They may pick up a very different message than the one intended. One of the important tasks of facilitators is to monitor anxieties among participants and to do something about them. So creating a safe learning environment is extremely important (For an impression, see figure 5).

Emotions can also become problematic during social interaction. The motivational state of wanting to win the game can change placid people to fierce warriors or jealous monsters. Misunderstandings or sheer competition can turn vicious. Often facilitators can usually let a game start with the faintest of signals but need to whistle loud and long to signal the end of the game and also need to start the debriefing by settling the win/lose elements in the game setting.

Another aspect related to emotions is the set of expectations with which participants start a game session. Are they prepared for what they have to do and the kinds of

experiences they may have in the game? Are they free from competing claims on their span of attention? If these conditions are not met, then the game session could fail because of lack of engagement. Is the game unsafe because it has real-world consequences, for example, because it is used for performance appraisal or examination? If so, it may fail because participants are anxious. Hijmans, Peters, van de Westelaken, Heldens, and van Gils (2008) have investigated the “alleged” safety of games, and they distinguish between the several ways in which emotions may threaten the success and effects.

Facilitation

A well-designed game can be jeopardized by inadequate facilitation. Conversely, good facilitation can make the most of modest games. This is not just a question of making sure facilitators are qualified. The same facilitator can work wonders in one group but do a poor job in another. Facilitating simulation games is a complicated, multifaceted skill and very hard to teach in any way other than by experience. Facilitators can vary their behavior along different lines. For instance, they could actively interfere in the game content or in the process, or they could abstain from either or both (van Kessel & Datema, 2008). A more directive style could make participants feel safer or belittled, depending on game complexity and background culture, for instance. A fit has to be established between facilitation and participants. Here again, cross-cultural misunderstandings can occur in international settings. While everybody is of course a unique person with unique personality, it is true that game participants have typical needs and behavioral tendencies depending on their cultural background. Facilitators should cater for this (G. J. Hofstede, Pedersen, & Hofstede, 2002).

Facilitators are children of their culture just as participants are. In different cultures, different motivators predominate. A few examples can indicate what this may mean. Egalitarian cultures will stress active and collaborative learning, as for example, U.S. gamer Duke (2008). If they are also feminine and uncertainty tolerant, then fun and playfulness are important motivators, as for example, Danish production management gamer Riis (2008). In Japan, with its very uncertainty-avoiding, collectivistic, and long-term-oriented culture, safety and social acceptability are important concerns. In accordance with this, Japanese gamer Tsuchiya (2008) mentions confidence and trust as essential preconditions for success of a game. The degree of freedom needed to make Danish participants feel challenged is likely to be threatening to Japanese participants. Misunderstandings and confusion can and do occur if participants and facilitators are not from the same culture. The example of Murff's (2008) SO LONG SUCKER illustrates this. Her first thought on getting unpredicted game results with Taiwanese participants was that she had failed as a facilitator; it was only later that she took it as an opportunity for learning about how cultural, unwritten rules can play up.

Debriefing and Evaluation

When it comes to games, the proof is in the debriefing. How to debrief is a matter of taste and also of cultural background of the facilitator.

In spite of the importance that is ascribed to debriefing in most publications, it is usually the first item from which organizers take away time if it is in scarce supply. This is bad practice, as any gaming practitioner can affirm. A good, unhurried debriefing can add enormous benefit to a gaming session, provided that session was a good one with committed participants. If the game run was lukewarm or disagreeable then debriefing can be awkward. If debriefing is organized in an active way with contributions from participants, then its duration is hard to plan. It takes self-confidence for a facilitator to plan a long debriefing session in advance.

Concerning the evaluation of games (i.e., assessing the obtained effects), cultural differences occur: a culturally masculine society is more likely to believe in hard proof and validity tests for the kind of social experiences that games constitute, while a feminine society is more likely to be satisfied with face validity and enthusiasm. Anyway, evaluation of some kind is needed to allow the participant to make sense of the experience.

George Harrison (in the album "Brainwashed," 1998) sang "If you don't know where you're going, any road will take you there." Hense and Kriz (2008) argue the importance of taking one theory as the basis for a simulation game's life cycle. They advocate starting a game design process based on theory and of evaluating sessions based on that same theory.

Cross-Cultural Issues in Simulation Gaming

Cross-cultural issues affect all stages in the life cycle of simulation games: what a designer can plan to design, how a facilitator thinks of operating, and so on. Here we are concerned with the game content. One way to deal with culture and cultural differences in simulation gaming is to bring it into the cognitive domain by discussing it explicitly. This has the advantage of being relatively safe, because participants limit themselves to talking and listening, and of enabling to address issues that are so painful that one would not wish to enact them. This approach to cross-cultural issues is taken by Damron and Halleck (2007). They designed a "culture assimilator" for non-U.S. students to cope with U.S. university life (Damron & Halleck, 2007).

Another way is to actually enact cross-cultural encounters. This approach also brings in the emotion and action domains. The content of the action can be adapted to the situation. A "safe" game of this type that can be used by university students, for instance, is MARRIAGE AND FAMILY in which participants form hypothetical families between which marriages are then staged. At debriefing time, less safe contexts or incidents could be discussed.

Which of the two approaches is more appropriate depends on the experience and preferences of the facilitator as well as on the participants.

A third way is to consciously create cultures. This is done in the famous game of BÁFÁ BÁFÁ and in numerous other games, such as games with synthetic culture scripts (G. J. Hofstede & Pedersen, 1999). These culture-related possibilities and pitfalls in gaming, including relations between participants' culture and their "zone of comfort" in simulation games, are discussed at length in work by Gert Jan Hofstede (G. J. Hofstede, 2008; G. J. Hofstede et al., 2002).

Homo ludens Pitfall

This article has now sketched some things that may go wrong, and some tips for success. Failures are exceptions, however. The single most impressive fact about simulation games is that it is so easy to make them memorable and successful. A pretty unsophisticated game, delivered by a not-too-experienced facilitator, is met in most instances with enthusiasm and remembered for years. Within the bounds of acceptability set by *Homo culturalis*, people are *Homo ludens*, after all. Most of us only need a slim pretence to engage in a game. This is also a danger. Because we may just be using the game as part of our life at large, as an arena for enjoyable social interaction, and never give a thought to the knowledge that the game session was supposed to impart. In a well-designed game we might still get an implicit message. The biggest pitfall of gaming is that out of sheer enjoyment of the game we disregard or underestimate the reflection.

Once more, a parallel with culture exists. We are a species formed by cultural evolution. That same pressure has not made us eager to reflect about culture; on the contrary, such reflection is taboo-ridden. In consequence, the more a game activates our social behaviors in the fullest sense, the more it becomes difficult to consciously debrief and reflect on it. The capacity of reflection about one's own hidden rules that is needed for such a debriefing is not given in equal measure to all participants or even to all facilitators. Due attention to the transition between action and reflection is mentioned by many practitioners as one of the active substances of gaming. Kavtaradze (2008) and de Caluwé (2008) regard it as a central concern for learning and changing.

Conclusions

Just like an aspirin, a simulation game may not work for quite the same reason for everyone. The contributions in the book that inspired this article (de Caluwé et al., 2008) show that an enormous variety in aspects is stressed by the 20-odd practitioners who participated. Gaming simulation is multifaceted. No single schema can do justice to the range of aims that can be achieved by simulation gaming. If forced to summarize the essence, the authors could say that *the conjunction in one single purposeful collaborative effort of new knowledge, application in action, a social setting, and emotional involvement* is the central active substance.

This means that a good simulation game effort requires careful attention to all four spheres of Figure 1 (knowledge, social aspects, emotion, and practice) in all its phases. Table 1 summarizes this.

During **design**, the knowledge to be gained must be explicitly considered, gathered, and modeled. A game has to be crafted that captures the essence and pays attention to the roles and incentives of participants.

During **play**, socioemotional aspects have to be handled by the facilitator so that they can contribute to the evaluation instead of disrupting the game. In particular, the facilitator may have to reassure participants who become so frustrated that they may drop out

Table 1. Points of Attention for Simulation Game Deployment

	Design	Play	Debrief
Knowledge	Make explicit	Prepare participants	Draw lessons
Social aspects	Roles, incentives	Monitor	Reconstruct
Emotion	Frustrations	Correct, support	Start here
Practice	Try out	Inspire, create safety	End with implications

or subdue participants who are so dominant that they may hijack the game. A skilled facilitator can prevent harm by creating an inspiring, safe atmosphere.

During **debriefing**, all four spheres have to be touched on in a process that starts with coming to terms with emotions and ends with reflection on the message that the game carries for the participants' professional or personal life as individuals or as a group.

During **all phases**, gaming professionals should bear in mind that to achieve the kind of learning that the designers intended, the exercise must be acceptable and understandable not only at the level of written rules but also at the level of unwritten rules. This means that in novel cultural environments one should try out the game to see if it creates new dynamics.

To conclude, we would say that to improve *Homo sapiens*, gamers will an ally in *Homo ludens*, as long as *Homo culturalis* is not offended or misunderstood.

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Notes

1. A well-researched recent position paper on instructional computer games for individual learners is the one by Garris, Ahlers, and Driskell (2002). A recent article with a similar objective to ours but largely focusing on the context on the single player in (possibly multiplayer)

computer games is by K. A. Wilson et al. (2009). These authors basically leave the answer open and plead for more specific research into what game attributes lead to what learning outcomes in what tasks and for what kinds of participants.

2. We heard this from Ivo Wentzler.

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