

Ten Secrets of Successful Simulations

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An experiential simulation can be a wonderful training method. But it's easy to create a one that is not as effective as it could be. Here are some suggestions for improving your chances of being successful.

One of the most satisfying experiences in training or education, no matter what the subject, is the so-called "Aha!" moment, that instant when sudden, spontaneous insight cuts through the tangle of loose ends in a learner's mind to reveal a memorable truth.

Having spent nearly 40 years designing experiential simulations, I believe simulations are the most likely teaching method to create those "Aha!" moments. In a simulation called "StarPower," the moment occurs when trainees, who might be police officers or corporate managers, unexpectedly realize that the only way to keep power over others is not to use it. In "BaFa' BaFa'," the moment comes when trainees suddenly grasp the idea that good intentions can actually worsen cultural misunderstandings. In a team-building simulation called "Pumping the Colors," it happens when trainees abruptly comprehend that the rules a team operates under are actually the team's responsibility.

When combined with other unique strengths of simulations-their ability to simplify systems, to demonstrate other people's perspectives, to develop "battlefront" skills in safety, and to solve problems from the inside out – these eye-opening moments can endow trainees with a vivid, often deeply personal understanding of even the most abstract training concepts.

Simulations, however, are widely misunderstood. The most experienced trainers, called upon to design a simulation, often create a workaday version of the board game "Monopoly." These are sometimes successful as play, but rarely effective as training.

Here are 10 secrets for creating successful training simulations. They represent lessons learned from my own hard-fought struggles to understand the elusive, often perverse human dynamics at work in simulation training. Taken in sequence, they can supply relatively safe passage through the tricky terrain of simulation design.

1. Don't Confuse Replication with Simulation

The temptation in designing a simulation is to make a small scale replica of some full-blown reality. It seems logical that the closer the simulation comes to reality, the more valid and memorable the experience will be. If you're designing a flight simulator for airline pilots, this may be so. But in "soft skills" training, the opposite is usually true. The job of the designer is to look past the details to the essence of reality.

Two Navy projects taught me that lesson. A sailor on shore leave in Athens, after buying a memento in a bazaar, discovered a shipmate had bought the same memento from the same merchant for a lot less money. Unaware of the Greek custom of bargaining, the sailor returned to the bazaar and flattened the hapless merchant.

The Navy asked me to devise a simulation that would teach sailors to respect-and expect-unfamiliar customs and relationships in foreign cultures. Since the Greek culture was only one of many the sailors would encounter, my associates and I created a simulation that postulated two abstract cultures defined in broad strokes: One was patriarchal and relationship-driven, the other individualistic and task-oriented. In neither culture did we attempt to simulate language, religion or attitudes toward time, work, leisure or whatever.

Trainees were divided into two groups. Each learned the rules of its own culture. Then representatives from one culture had to visit the other and attempt to function. Despite my initial fears that the simulation might be too abstract, it was an immediate hit. By concentrating on the essence of the cross-cultural experience rather than the details –the simulation had a powerful “aha” effect on many of the participants. "Bafa Bafa" has since been used extensively by thousands of schools, corporations and government agencies.

The next effort was an abysmal failure because we got caught in the replication trap. The Navy asked us to design a simulation to help newly arrived American sailors learn to live in Japan. One objective was to show trainees how complex a foreign culture can appear when you don't understand the language, so we replicated the Japanese experience in considerable detail. We set the exercise in a model of a Japanese railroad station and hired Japanese speaking housewives to staff shops and ticket windows. The sailors were to face a series of real-life quandaries: asking directions, ordering train tickets, buying gifts and so forth.

When the simulation got under way, however, all this authenticity quickly buried our good intentions. The trainees were lost in detail. We had exaggerated the

problem and overwhelmed the point of it all. The simulation collapsed of its own weight.

2. Choose the Right Subject to Simulate

Some subjects lend themselves better to simulation training than others. I don't claim to have discovered any ironclad rules to determine likely subjects, but I believe a topic is more apt to be suitable for simulation if it embodies at least one of the following characteristics:

Seeing the world through other people's eyes. A pharmaceutical company wanted a training program that would awaken its complacent marketing department to the competition threatening its principal product line. We designed a simulation that divided the marketing staff into five competing teams, one represented our client company and the others its principal competitors. Each team designed an aggressive marketing plan to increase its "company's" share of the threatened product's market segment. The unqualified success of the competitor's marketing plans revealed just how vulnerable the client company's product was. The marketing staff was shocked into action.

Performing tasks simultaneously. Traditional training methods teach skills in a linear fashion, one by one. In the real world, skills are often needed in clumps: A manager may find herself simultaneously negotiating with a vendor, listening to a customer complaint and planning the response to a memo from her boss. A simulation can create an environment in which she learns to do all three, and more, at once.

Performing under pressure. Some people are skillful negotiators, excellent listeners, clear direction givers-but only when they don't have to perform under pressure. Simulations can create environments full of genuine but non-threatening pressure, affording such people opportunities to practice their skills under duress.

Developing systems thinking. Many people find it difficult to grasp the concept of how systems operate. They know the parts of a system are related, but they resist understanding the relationships because they think they are impossibly complicated. A simulation can put people inside a system. As part of the system, they see firsthand how change to one component affects the others.

Recognizing cognitive dissonance. People often hold contradictory attitudes or beliefs without being aware of the contradiction. This is known as

cognitive dissonance. For instance, if a manager sincerely believes he is nonsexist yet behaves in a sexist manner, chances are he suffers from cognitive dissonance. Many of the "Aha!" moments created in simulations come when such a person suddenly realizes that he or she has been living a contradiction.

3. Develop a Design Plan

In preparing to design a simulation, you must make two key planning decisions. First, will you design it alone or use a design team? Second, will you employ a structured creative process or fly by the seat of your pants?

Whether you go it alone or put together a team, you need to fill the following roles: principal designer, who has firsthand knowledge of training simulations (and, for a team, the commitment to lead); subject matter expert, who has a thorough understanding of the subject to be simulated; administrator, who sets and maintains the design schedule, oversees acquisition or production of materials, and schedules alpha and beta tests (more on these later); and client or representative, who provides a reality check as the project develops (in an oversight capacity only).

While some feel the most productive creative process is no explicit process at all, I believe a simple but well-defined creative program can counteract the pressures that often cause designers to settle for second-rate ideas. I have tried most of the creative techniques espoused by experts, and I've found that their best advice can be distilled into three suggestions:

A. Avoid premature closure of ideas. Don't stop searching for ideas after the first workable one appears. Often the best idea comes second, third...or 10th. Think of ideas as stepping stones to other ideas rather than as destinations in themselves.

B. Get outside a problem and look at it from different angles. For example, try approaching a problem in a marketing simulation from the point of view of a customer, a salesperson, a distributor, a person who's never seen the product before, someone who doesn't speak English-you get the idea.

C. Give your subconscious a chance to work on the problem. The solution to an especially intransigent problem will often pop into your head when you least expect it-on the freeway, in the shower, at the beach. Give it the opportunity.

4. Design the Simulation so Participants Take Responsibility for Their Actions

Most simulations are divided into two sections, the simulation proper and a session analyzing the results. Conscious learning occurs primarily during the analysis session. Learning is sidetracked, however, whenever trainees disavow responsibility for their behavior during the simulation. If they can claim they did what they did only because the simulation suggested or encouraged that action, their motivation to learn from the experience evaporates.

When you design your simulation, watch out for these guaranteed responsibility avoiders:

Pretending. If the rules even imply that trainees should "pretend" to be someone or do something, then at the end of the simulation they will exclaim, "That's how I thought such a person would act!" When you allow trainees to become actors playing roles, you compromise their stake in the outcome. Instead of telling someone to act like the president of a company, for example, assign him the authority and responsibilities of the president. Design all "roles" in a simulation so that trainees must be themselves.

Using competition for its own sake. Employing competition between trainees to increase interest in a simulation can, and often does, backfire. Trainees can then justify all kinds of inappropriate behavior in their quest to win. If competition is not a factor in the real-world situation you are simulating, leave it out. Even if it is a factor, it is often a mistake to increase the reward for winning by offering non-simulation prizes i.e., bottles of wine to the winners, money from a pot collected from the participants etc. If the simulation of a competitive situation is designed well, the inherent competitiveness of most participants will create enough competition to motivate energetic participation. Sweetening the pot with extra-simulation rewards often creates such an intense environment for the participants it is difficult for them to learn from the experience. Unless your goal is to show how competition and the desire for winning can distort their decision making ability and cause them to abandon long held values, the competition should be kept in perspective.

Giving inappropriate importance to chance. Stymied simulation designers often fall back on the trusty old device of a deck of cards, with outcome-altering directions like, "The company is being sued" or "The workers are on strike." Such cards invite trainees to escape responsibility later by insisting, "We made the right decisions, we were just unlucky." Limit chance to events that actually occur randomly in the real world.

There are other common mistakes designers often make when they first begin designing a simulation. Being aware of them can help you avoid them.

Emphasizing fun at the sacrifice of learning. Many people use the words, simulation, simulation games, and games interchangeably. I did at the beginning of my career, but now I try to call what I do as simulations that fall in the general category of experiential learning. I do not refer to them as games even though they are game like for the following reasons: .

The word "game" evokes feelings and expectations that I think make it difficult to design effective simulations.

As soon as you say "game", many people think of winning and competing to win. Many simulations do involve competition, but not always. As I mentioned earlier, when competition is involved, it is important to manage the competitive elements of the simulation so the competition doesn't overwhelm the learnings.

Games often create an expectation of fun and frivolity. I believe participants must be fully engaged for maximum learning. Being fully engaged is not the same as having fun. Most of the time it is also fun to participate in a simulation, but not always. I feel I learned more from Participating in Harold Guetzkow's Inter-Nation simulation (INS) and William Gamson's Simulation of Society (Simsoc) simulation than I did from all of my teachers during my graduate school years. I became incredibly involved. I still replay some of the experiences from those two simulations in my head. They were challenging, thought provoking, and frustrating experiences. The Inter-Nation Simulation lasted for two days, Simsoc lasted for two days. Fun, would *not* be one of the words I would use to describe the experience, but they completely changed the way I think about what's going on in the world. When having fun is one of the criteria used by designers to create a simulation I think it greatly limits the design options.

Dumbing down the experience. I believe shorter simulations are better than longer; simpler is better than complicated; learning something is better than learning nothing; capturing the essence is better than replicating every detail – providing you can figure out what to do to make them shorter and simpler *and still meet your learning goals*. Young people who play computer games spend hours figuring out the rules and trying different strategies. Reality, even the essence of reality, is often a challenging, complex task requiring difficult choices. If we remove the difficult parts

from the simulation, we risk missing an opportunity to teach extremely important ideas, concepts and values.

Underestimating the time and energy to build commitment. It's quite easy to create that first level of commitment: "Come and join in this activity, you'll learn something and have fun." But to get people seriously invested in the outcome sometimes requires time and effort from the participants before they reach this level of commitment. Experiments have shown that ducklings will imprint on a moving block of wood. The more effort they expend following the block of wood, the stronger the imprinting bond. This principle holds true for many simulations, the more effort the participant must put into finding a solution, the more likely the lessons will be long lasting. Just as a movie or a play requires time for the audience to identify with the characters before they are faced with a crisis, time is often required in a simulation for participants to become familiar with the other participants, the resources they must allocate, and the payoffs that each type of decision is likely to yield.

This also applies to the debriefing. I understand the need for a person trying to sell an experiential learning session to their corporate bosses to say "this simulation teaches these 7 things." In *Pumping the Colors* we help them understand and use seven tools to help them build more effective teams. We've developed learning points for our other simulations as well. The good news is these learning points help us be clear about what we're trying to accomplish. The bad news is focusing on these learning points if not done correctly may rob the participants of a more important learning, how to learn from experience. The temptation is to do the work for them. To say, here's what the simulation is about and here's what you should have learned instead of requiring them to identify the learnings and how they apply in the real world. Surprisingly, the participants often learn concepts, ideas and principles that are unique to them. In fact, these are often the most important learnings of the experience. To help them reflect on the experience often means that the first analysis is superficial. If we believe that is all the participants are capable of, then we'll stop there. But most students are capable of much more. In other words, we should not dumb down the simulation and we shouldn't dumb down the debriefing.

5. Use Symbols and Metaphors to Deal with Emotionally Charged Ideas

Occasionally a simulation focuses on an emotionally charged issue that threatens to overpower the learning experience. For example, in the early '70s a teachers' association asked me to design a simulation to teach campus conflict resolution. My scenario proposed that a trivial misunderstanding between a white and black

student has escalated into a riot. I tested it with a group of college professors from a state university. They were divided into four groups—a black militant group, a white right-wing group, a moderate black group and a moderate white group—and were given the task of resolving the conflict.

Seconds after our first test began, the black militant group (all white, middle-class males) leapt onto a table and began shouting obscenities. The right-wing group responded with threats of violence. The moderate groups attempted to mediate but were buried in the verbal mayhem. After an hour, we stopped the simulation and discussed the experience. The professors loved it. I hated it. I felt that instead of responding honestly, the participants had merely stepped into stereotypical roles—the opposite of my mandate. I canceled further tests and went back to the drawing board.

I realized that by incorporating such emotionally charged and politically correct themes—"black," "white," "race riot"—I had made it difficult for them to respond genuinely. In hiding behind stereotypes, they were taking advantage of a convenient escape hatch. This made it impossible to get at the essence of racism: power or the lack thereof.

I changed the name of the simulation from "The Race Game" to "Starpower." Instead of blacks and whites, I named the groups Circles, Squares and Triangles, and gave the Squares power over the other groups. At the next test, I worried that trainees would not identify with such abstract groups, thus weakening the simulation's emotional impact. I stopped worrying when I noticed a Triangle questioning a Square's right to order him around. The Square drew himself up. "You want to know why I can tell you what to do?" he growled, shoving his badge in the Triangle's face. "Because I'm a Square, that's why!"

6. Don't Play Games with Trainees

When we first tested "StarPower," we instructed the facilitator to secretly increase the probability of the top group, the Squares, of becoming even more powerful and rich. I was trying to make the point that the rich get richer. This tactic served our purpose well—until it was revealed during the analysis session. The trainee's were so angry to discover the deception that their fury overpowered all discussion.

We changed the rules, but only slightly. We told the facilitator to explain at the start that whichever group did best in the early going would gain an advantage in later stages. We still stacked the odds, but without secrecy. It worked. The trainees, no longer feeling manipulated, now accepted the concept "the rich get richer" without complaint.

Another kind of game playing can backfire by trivializing the whole experience. I refer to the use of cute proper names, like the "Yell and Holler Telephone Company" or "Caught in the Act Security Services." No matter how clever such names seem to designers at the time of creation, they undermine the authority and effectiveness of the simulation by signaling trainees not to take it seriously.

7. Use Non-Trainees to Add Realism

Non-trainees, people who have no stake in the outcome of the simulation, can add an exciting, even crucial sense of realism.

In "Pumping the Colors," a team-building simulation, trainees build a water transfer system that is tested near the end of the simulation by a non-trainee "customer." The team has to provide this untutored stranger with written instructions that enable him or her to operate the complicated apparatus. The presence of this outsider in the equation forces trainees to consider the system's simplicity of use and elegance of design at every stage of development.

In another simulation, one designed to train sales managers, 10 workers are hired from a temporary agency for the day. The trainees must interview them, select some as sales staff, train them to sell a product, organize them into efficient departments and coach them to success. The use of strangers adds real-world authenticity to the training experience.

Non-trainee participants are not suitable in every simulation (neither is real-world authenticity, as we've seen). But when they are, they can bring it alive.

8. Develop an Appropriate Performance Assessment Model

Because of a perceived superiority of mathematics-based scoring systems in training, simulation designers often attempt to develop quantitative models for assessing trainee performance. These may be appropriate for quantitative simulations-those dealing with financial or other formulaic disciplines-but for most qualitative simulations they are not.

By "qualitative," I mean simulations that teach human-centered subjects like ethics or teamwork or cultural diversity. Mathematical analogs are usually too limited and inflexible to account for their myriad variables-or too complicated to produce meaningful results. Also, trainees often figure out quantitative models and skew the results.

In the marketing simulation we designed for the pharmaceutical, we considered using a quantitative model to score the competing marketing plans. But then we

realized that measuring every relevant aspect of the plans numerically would require a list of variables as long and about as informative as a telephone book. Instead, we used a panel of actual marketing experts to evaluate the plans and assign each plan a share of the market. This not only produced a realistic outcome, it offered trainees an opportunity to challenge, and better understand, the results and, more important, the reasoning that the judges used to make their determination.

9. Alpha Test Your Simulation in Low-Risk Circumstances

Both alpha and beta testing are critical to the development of even simple simulations, but confusing them can be disastrous. A beta test is a real test-a shakedown-of an anticipated final product, always occurring after the design is at least provisionally set. Alpha testing often happens so early in the design process that it might more properly be termed a design technique.

The purpose of an alpha test is to evaluate the basic assumptions of the simulation, its overall structure and the logic of its progression. You should expect problems to surface and be prepared to reinvent the whole simulation if necessary. Never include anyone in an alpha test who has an investment in the success of the simulation. No matter how forcefully you insist that this is only a preliminary test and that nobody should get excited if he sees problems, anybody with a stake in the outcome will panic the minute something goes wrong. And something will go wrong.

Do yourself a favor and stage alpha tests with people who love you.

10. Set Your Own Standards for Success

When you spell out the purpose and goals of your simulation at the beginning of the design process, you are defining standards by which to judge its ultimate success. Don't lose sight of those standards as your project nears completion.

By the time you get to beta testing, you may find your simulation seeming to take on a new and unfamiliar personality. This is often due to the cumulative feedback of trainees who take part in the tests. Trainees often overvalue (or undervalue) the participative aspect of simulations; they are, after all, used to sitting passively through lectures. Or they can become so emotionally involved in the simulation that they exaggerate the result, giving you a false positive assessment of what they've actually learned.

Don't get me wrong. You must listen and learn from trainee reactions, good, bad or indifferent. And you must be prepared to modify the simulation when

necessary. But you can't let yourself be seduced by enthusiasm or destroyed by criticisms. The success of the simulation depends upon your ability to maintain objectivity.

As you test and modify, you will watch your simulation come closer and closer to accomplishing its purpose. At some point-if you are like me-you will have a surprising but memorable "Aha!" moment of your own. That's when you'll know it's done or it's not going to work.