

What Makes a Good Simulation?

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Learning Simulations

Simulations can be very effective learning strategies, and fun for the participants, too! What makes a simulation work? There are a few key principles to follow when selecting or designing a learning simulation.

- Make the simulation feel like real work
- Strip away excess complexity and focus on the key dynamic
- Make the situations, choices, and outcomes believable
- Allow choices to influence outcomes
- Keep the rules in the background

Here are more details on each of these principles.

Principle 1. Make the simulation feel like real work

Research has shown that when learning activities are similar to the situations in which work is performed, we get better transfer of learning. Aviation, civil emergency preparedness, business management, and medicine all use realistic scenarios to teach or improve complex skills. When the cost of failure is high and when the performance arena uncertain, simulations are likely to be useful.

There is also an emotional component to learning that we often ignore or fail to use to help learners. When people get caught up in a simulation, it feels like real work. When people get emotionally involved in a simulation, they can draw more impact from the learning experience. This can only happen, however, if the simulation feels like real work.

Principle 2. Strip away excess complexity and focus on the key dynamic

Educational simulations are simplified versions of the reality that learners interact with on a daily basis. They capture the essential dynamics of a workplace in a way that allows learners to explore different approaches and experience different outcomes. For people to be able to grasp the learning points, the extraneous variables must be removed. For example, if you are conducting a financial management simulation, human reactions and employee attitudes may add little value. In this case, you can take out variables relating to these things.

In a management simulation, on the other hand, these may be the key variables and the financial elements can be removed. Leave in only what is important to the learning point you are trying to make.

Principle 3. Make the situations, choices, and outcomes believable

Going back to cognitive psychology, a simulation is a good way to represent a chain of thought and behavior. First, we present a participant with a situation. He or she makes a choice and responds to the situation. The response creates a natural outcome, which the participant can observe. The simulation allows trainers to control this chain of events, and to make each link in the chain explicit and obvious to

the participant. By reviewing his or her actions, the participant can reflect on what happened as a result of the choice and response made.

If the situations, choices, and outcomes are believable, the person can pay attention to what happened in the simulation. If any of these seem fake or artificially constrained, the participant may be distracted by this, and may deny the learning point. Good simulations create the verisimilitude or feeling of reality that helps the participant focus on the important dynamic.

Principle 4. Allow choices to influence outcomes

The essence of a good simulation is that participants feel like they can try anything they wish. While this isn't usually true, it is important that participants believe that the choices they make will have an effect on the outcome of the simulation. The embedded rules and structure of the simulation must allow for the participants to achieve different outcomes, depending upon their choices.

The best dynamics for simulations are the ones that successfully show "natural consequences" of different choices. For example, in a flight simulator, neglecting certain controls will cause the airplane to crash. In a leadership simulation, failure to communicate clearly and convincingly will result in a failure of people to follow the leader's instructions. These are consequences that flow naturally from the choices of the participants. Modeling these natural consequences is a crucial part of an effective learning simulation.

Principle 5. Keep the rules in the background

Every simulation depends upon an embedded set of rules that model the system being simulated. However, the more obvious the rules are, the less believable and engaging the simulation is. If the intent of the simulation is to give people a way to practice making different choices, then the participants should be able to focus on the choices and the situation, and not on the rules.

If participants try to "beat" the simulation, they are focusing on the simulation rules, and not the choices and the situation simulated. Any learning gained from beating the simulation is artificial and has little to do with the purpose of the activity. This makes the simulation a waste of time and money.

On the other hand, when the rules are embedded within the situation and the choices offered in the simulation, people begin to forget that they are in a simulation. They act as they would act in the real situation, and can draw deep insights from the experience.

Summary

When simulations follow these principles, they can be very useful learning tools. Attention to the details can make a simulation the most powerful and long lasting learning experience a person ever has. Consider how you might take advantage of this power in your training programs.

For more information on simulation enhanced learning and 5-Step Simulations™, check out LearningSim at www.learningsim.net.