

Simulation learning: a powerful tool



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Simulation learning is a valuable tool for organisations seeking to effect real behavioural change and maximise the return on investment in new corporate systems. **Rupert Brown** explains

Simulation and e-learning

Simulation learning is a specialised form of e-learning. e-Learning seeks to bring and impart knowledge to the learner through the use of modern technology – typically PC and Internet technologies. It is the use of Internet technologies, such as browsers (Internet Explorer, Netscape), hypertext mark-up language (HTML), Javascript and media (audio, video, animation), that distinguishes e-learning from what was known as computer-based training (CBT). e-Learning is more portable than CBT, simpler to distribute, can be extremely content-rich and is easier to keep up-to-date. e-Learning also benefits from nearly 20 years of research in adult and computer-based learning theory.

Simulation learning is based on the same technology as e-learning, but has one key differentiator – simulation is the primary learning and assessment tool. The aim of a simulation learning product is to create an emotional response in the user. Through this emotional response we seek to engage the user and allow them to commit to the experience, making it easy for them to believe, 'This is good, I can do this, I can complete this task,' giving them a sense of achievement, and a new skill or piece of knowledge. This emotional response will help to ensure that the user completes the training. One of the main problems with e-learning is that people can get bored and fail to complete courses. That is very rarely the case with well-designed simulation learning.

Simulation as the learning engine

A simulation is a dynamic model you can interact with. The value of simulation stems from this dynamic model and the interaction. A user becomes engaged by and absorbed in the simulation. Once engaged, the user is doing, and research initiated by

Jean Piaget, and expanded by many organisations,¹ shows that 'doing is the best way to learn'. This research that indicates that two months after training, a learner will typically remember:

- + 20 per cent of what they **hear**
- + 30 per cent of what they **see**
- + 70 per cent of what they **say**
- + 90 per cent of what they **do**

This is key to simulation's value as a training tool.

The concept of simulation has been with us for many years. The highest profile use of simulation is the full flight simulator for training pilots. These machines have succeeded in a very tough commercial world because they deliver real value. In the simulator you can train for a fraction of the cost of training in a real aircraft and follow procedures that you would never do in a real aircraft. The simulator is a safe and highly effective environment in which to learn. The same concepts apply to business and system simulations delivered to you on your desktop PC.

The aviation world accepts simulation because safety is paramount and the consequences of system or process failures can be catastrophic. For organisations, the commercial consequences of certain failures or inefficiencies, although less dramatic, can be equally devastating. Operational readiness, return on investment, legislative compliance, data integrity, intellectual property and a smart workforce are now all vital considerations for a successful company. Simulation learning can help an organisation realise all these, and can be a catalyst for genuine business process improvement.

Scenarios to create immersive environments

Scenarios are small stories or scenes that are representative of the kinds of situations people will



have to deal with in their work environment (i.e. the training exists to ensure that people are competent to handle these situations when they occur). The scenarios form the basis or backdrop for the simulations. Training occurs when the user becomes immersed in the scenario and interacts with the simulation to achieve a result. The difference between training and assessment is a simple matter of the amount of help and guidance provided to the user during a scenario.

The significant advantage of scenarios is that they can be a training effectiveness multiplier. To illustrate this idea, consider the training you would give to a person working in a bank. It may include sales and customer relations, some financial legislation training and some training in the use of the bank's computer systems. In a traditional training model each course would be taken independently of the other. It is up to the person being trained to form the links between the sets of knowledge. A well-designed simulation learning package could combine the same instructional material into a set of scenarios that put that material in context – making it more relevant, immediate and useful to the learner. The amount of training time is reduced, increasing the efficiency of the bank's operation. Figure 1 illustrates this layered training concept.

Capture and improve your intellectual assets

An important point to note is that a business process is captured every time a Subject Matter Expert writes a scenario or simulation script. Your organisation's business processes are a fundamental part of its intellectual assets. With simulation learning, you are identifying and capturing some of those assets.

Examining a process to the extent required to produce training scenarios can be a great catalyst for change. The act of describing a process often leads to ideas about how they can be improved.

Organisational benefits

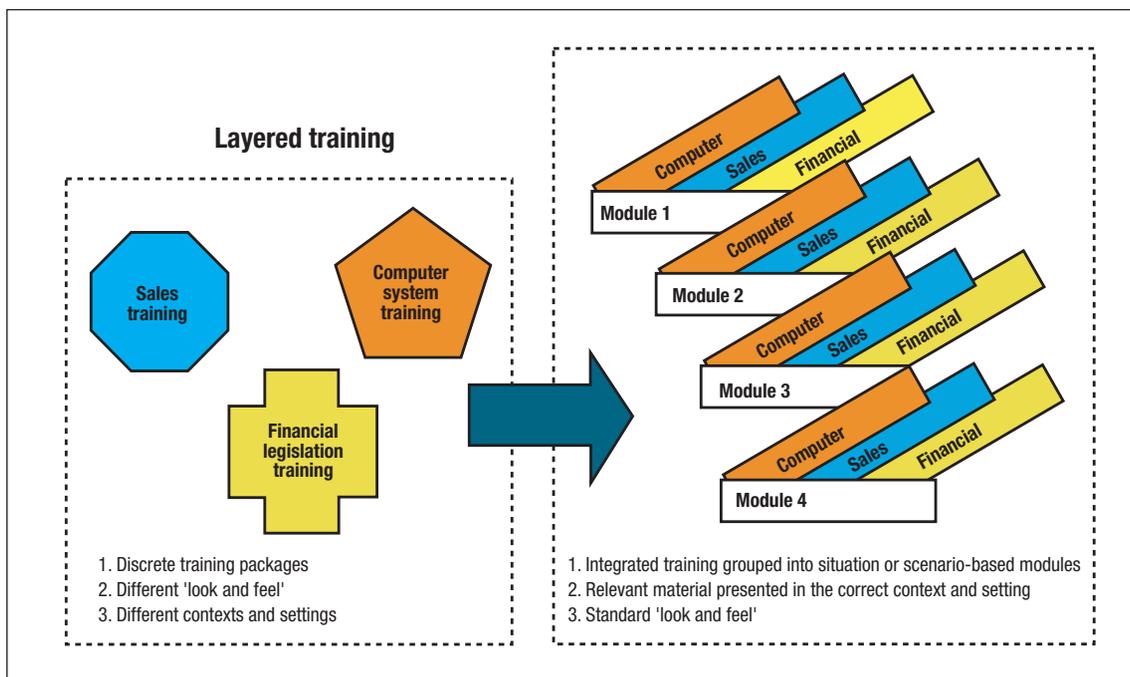
Almost every organisation can benefit from the use of simulation. Custom-built simulation learning systems offer particular advantages to large organisations with highly distributed and mobile workforces, who rely heavily on computers. For example, imagine your organisation has a large,

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geographically dispersed branch network. You want to roll out a new human resources system that everyone will use. The new system cost millions, but in the project plan it is expected to save millions over five years. However, it will only save your organisation money if people know how to use it. How are you going to train thousands of people spread all over Australia? A simulation learning system delivered over the Web is a very efficient solution, and can help to deliver the return on investment your plan expected.

By way of another example, imagine you have a sophisticated service you want to deliver over the Web. How do you ensure your customer base will

Figure 1 The layered training model



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be able to use the service? You can extend training to them via the Web with a simulation learning system.

Increasingly, training providers are able to offer tools and authoring packages that allow organisations to develop their own simulation-based training systems. Although the output of these systems may not match the usability and instructional content quality you would get from a professionally designed and constructed system, they may offer the most appropriate level of value for smaller organisations.

Getting started with simulation learning

It is likely that your organisation already has some form of e-learning – even if it is just a couple of paper training courses converted to Web pages. Often this is a good way to start. To realise the real benefits of simulation learning, consider the following steps:

Background: Check your organisation's vision statement or balanced scorecard to see if they contain any statements that could be used to support new or innovative training proposals. Typically they will be couched in terms of requirements for improved efficiencies, operational readiness targets or ensuring the return on investment of new system implementations.

Project selection: Within your organisation, identify one problem or situation that impairs the organisation and that could be improved through enhanced training. Identify who, within the organisation, not only owns the problem but also controls the budget. This person is the project owner.

Initial proposal: Propose to the project owner a Proof-of-Concept (PoC) project as a way of testing the effectiveness of simulation learning in solving the problem. A PoC is a small project, typically lasting four to six weeks, that aims to create training for one small, easily identifiable area. Suggest a limited budget with a ceiling, and the issuing of a request for proposal (RFP), with the decision to proceed with the PoC based on a review of the responses.

Request for proposal (RFP): If your proposal is successful, identify the leading suppliers in your area, and start a discussion about the RFP that:

- ✦ Describes the problem to be solved, and the vision for the PoC, including the objectives and Key Performance Indicators (KPIs)
- ✦ Identifies who will use the training, their level of education, familiarity with new technology and any factors affecting their motivation to learn
- ✦ Identifies the environment in which the learning will take place, be that at their workplace, at home, or at a learning centre, and how much time per 'training sitting' a person will have
- ✦ Defines the scope of the PoC in terms of the number of processes to be taught, the size of each process in terms of time taken to complete, number of steps per process or other relevant metrics
- ✦ Identifies the technology available to run the learning system in terms of PC specifications, operating systems, browsers and browser plug-ins
- ✦ Covers any other relevant information about your organisation

Every day simulation learning systems are in service training people and in doing so are helping organisations increase their corporate skill base, effect real behavioural change and maximise the return on investment in corporate systems. As organisations become more familiar with the power of simulation, so the number of applications will grow – from simulation learning to simulation-based acquisition, to plant and process modelling, to business scenario and planning workshops. If simulation learning is new to your organisation, now is an excellent time to find out more. ■

FOOTNOTE

- ¹ Research in this area has been undertaken by many organisations including the University of Southern California, the Laval University, Quebec City, the American Society for Training and Development, and the US Army Research Institute for the Behavioral and Social Sciences.