Access Technologies Group

Learning through Simulation

"Life is not a dress rehearsal," wrote novelist Rose Tremain. How true this is—

the real world is the real world. There is no rewind or restart button. This is why

schools try to best prepare their students for life outside the classroom and

businesses often require training courses for their employees. But there is a

large gap between the safety of an enclosed learning space and the diversity of

life and experiences that exist outside an individual's comfort zone. Teachers

and employers alike are seeking a solution to this fundamental problem of the

limits of classroom education.

Simulation education may hold the answer. What is a simulation? A common

definition of a simulation is a reproduction of an item or event. Simulations can

be produced in all fields through computer games, role-plays, or building models,

to name only a few. But a *true* simulation has a specific goal in mind—"to mimic,

or simulate, a real system so that we can explore it, perform experiments on it,

and understand it before implementing it in the real world."[1]

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[1] "What is Simulation?." NovaSim...Logic in Motion. 2003. NovaSim. May 2006
<http://www.novasim.com/index.html>

This last step, applying knowledge gained through exposure to simulation, is the main purpose of simulation education. Simulation makes imitated situations available to the learner to practice and hone necessary skills, rather than having them jump right into the real experience—where a "do-or-die" mentality can often make the individual nervous and unconfident. As McKinsey consultants write in "Is Simulation Better Than Experience?", "Simulations can be better than experience because they compress time and remove extraneous details. Unlike life, simulations are optimized for learning." Indeed, the true beauty of simulation is that it provides an immersive learning experience, where skills, process, and knowledge can all be enhanced in a way reality cannot. And the ability to explore, experiment, and repeatedly apply this knowledge to unlimited model situations is what makes simulation the most versatile form of learning available. And now, thanks to the development of new technology, computer simulation is making this type of learning more effective than ever.

The World of Computer Simulation

When SkillSoft, a UK-based e-learning company, developed their award-winning training software for nurses, they asked their users what motivated them to use the software. Less than 25% of those surveyed, about 35,000 nurses, were actually motivated by career development.[2] This desire to learn was primarily personal *interest*. And because the product proved so successful (85% said they

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[2] "A SkillSoft Case Study: NHS." SkillSoft. 2002. SkillSoft. May 2006
<www.skillsoft.com/EMEA/documents/NHS Case Study2.pdf>

would recommend it to their friends), there must have been something about the training software that kept their interest alive while still being educational.

So how do you take the benefits of simulation and training software and make them even *more* effective? This is precisely the question developers of simulation software must have asked when choosing computers as their delivery medium.

Simulation software is made to customize learning in a way that profits both the trainer and the trainee. Simul8 Corporation sees the benefits for employers in cost, "Experimenting in real life is costly. It's not only the capital expenditure of hiring new staff or purchasing new equipment, it's the cost of the ramifications of these decisions…The only cost with simulation is the software and the man hours to build the simulation."[3] We also know that simulation software conserves time. Classroom training courses can be time consuming—what if you need your employees right away? Computer software puts you in control of the time distribution of training, and your employees in control of when they can learn.

But what about keeping this inherent "interest" alive? It is obvious that if the employees find the software engaging, they are bound to get more from it. Simulation software allows training to actually be *fun*, which is crucial to what

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[3] SIMUL8 Corporation: Products: What is Simulation." SIMUL8 Corporation: Simulation Software, Solutions and Technology. 2006. SIMUL8. May 2006
<http://www.simul8.com/products/what_is_simulation.htm>

learners will take away from the training process. With the use of computer technology, such as animation and sound, the experience can be personalized. The learner can be rewarded when they make a correct decision, and brought back to a previous lesson if they make a mistake and need to review previously addressed material.

Software like Simentor? , an authoring application created by Access Technologies Group (ATG), allows companies to create e-learning simulations that fit their company without requiring any computer programming skill. Such software also allows the learner to work at their own pace, test through material they have already mastered, and try increased levels of difficulty—solving the problem of trainers having to pay closer attention to slower students, and slower students feeling uncomfortable during their training. It is self-teaching through self-discovery, which makes it all the more rewarding for the individual.

While many see the drawback of this computer-based learning as the interaction between a person and computer rather than person-to-person, simulation software is developing as a way to best merge the advantages of e-learning with everyday social interactions. Studies reflect the growing need of companies for employees that are more skilled in working with each other than with the products. Simulation software may be the next big solution in the hunt to teach appropriate work behavior, or "soft skills." And while technical skills can be practiced and executed until performed correctly, soft skills are a much more

ambiguous field of learning that require substantial practice in the world of simulation.

Learning the Hardest Skills: Life Skills

Deemed as much more abstract, soft skills, also referred to as "life skills," have been defined by Development Dimensions International as, "Personal and interpersonal behaviors that develop and maximize human performance (e.g., coaching, team building, decision making, initiative). Soft skills do not include technical skills, such as financial, computer, quality, or assembly skills."[4] In business terms, one employer was quoted as saying, "Don't worry so much about the technical skills. We need you to teach them how to show up on time, how to work in teams, and how to take supervision."[5]

The growth in e-learning as a medium for soft skills training stems from both the mounting appeal of e-learning, as well as the universal need for improvement in this area. A nurse may be very skilled in giving a patient a shot, but does she understand how to make the patient feel comfortable if he or she is afraid of needles? A focus group in a company may be extremely adept in the information they need to cover for a presentation, but are they able to successfully work with each other? The kind of everyday interactions that happen in the corporate

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[4] Bernthal, Dr. Paul, Pete Weaver, and Richard S. Wellins. "The State of E-Learning: Developing Soft Skills." Development Dimensions International 2003 May 2006. < www.ddiworld.com/pdf/ddi_stateofe-learning_rr.pdf>
[5] Career Opportunities News, "'Soft Skills' A Key to Employment Today." Ferguson Publishing Company 20.2October 2002 April 2006 <http://www.cco.purdue.edu/Articles/Article-SoftSkills.shtml>

world, from the interview process to promotion, are gray areas in which employers find even the best candidates could use improvement. As Bill Coplin of USA Today puts it, "Students tend to think a high GPA and a degree will guarantee career success, but anyone in the work world knows that only skills and character ensure success."[6]

Simulating Success

Simulation software, as well as e-learning, or internet-based learning, are proving themselves the successful delivery method through which to teach soft-skills. A survey found that the compounded annual growth rate (CAGR) for the entire soft-skills market between 1999 and 2004 was estimated at 123 percent.

Perhaps this is because the market for training software is so broad. When training in soft-skills, it is necessary to remember lingual and cultural barriers. Companies don't have the resources or time to train the *trainers* in all their standard protocol. The beauty of simulation software is that the company can be sure that their idea of acceptable work behavior is what their employees are learning. Considering that being comfortable with diversity is one very important soft-skill in the business world, simulation software removes the classroom bias of a trainer appearing to impose their cultural mannerisms on others.

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[6] Coplin, Bill. "For new graduates, 'soft skills' are the secret weapon in job hunt." USA Today 2006 April 2006 <http://www.usatoday.com/news/opinion/editorials/2004-06-09-coplin_x.htm>

Training software also breaks down other important barriers, including those that bar many individuals living with social disorders and disabilities from joining the workforce. These disabilities can range from social awkwardness to autism and mental retardation. Only about 30% of the 17.3 million Americans with severe disabilities (ages 21-64) are currently employed in the United States, and often in segregated settings. Research shows that most of these individuals have trouble attaining or retaining employment *not* because of their inability to perform work tasks, but because of their inability to comprehend everyday social behaviors. These can include working with customers, with peers, and with employers.

Recent developments in simulation software are promising new opportunities for these individuals. Social Simentor? , a product based on ATG's Simentor? software, is a software program designed to help in the social development of individuals with disabilities, focusing on skills necessary to help them become an integral part of the American workforce.   This exciting new software uses e-learning technology to create simulations of real-world job scenarios, which allow the learner to refine their social skills in a setting applicable to the real world. The ability of simulation software to transport the learner into a virtual workplace over and over again allows them to explore many different social situations repeatedly, until they have individually grown comfortable with these interactions.

As the demand for soft-skills grows, and company protocol changes with the times, everyone may stand to benefit from this training. College students

graduating with solid degrees may find themselves more comfortable in job interviews if they have the necessary practice first. Workers of all different cultural backgrounds will be better able to understand and be understood by their peers if they can learn the same set of social customs. Even welfare workers can use simulation software to understand how to best interact with their clients. In essence, simulation software can target many specific issues, but the need for it is universal.

Simulation, E-Learning: Classrooms of the Future

With the rapid progression of technology into the 21st century, e-learning is quickly becoming the fastest, most efficient, and most *effective* way for businesses to provide job training to employees. Cortona Consulting predicts that by the year 2010, the e-learning market will be a 50 billion dollar business.[7]

The advantages of e-learning are clear for both the organization and the learner. Kevin Kruse of e-LearningGuru.com points out that e-learning promotes "more efficient training of a globally dispersed audience; and reduced publishing and distribution costs as web-based training becomes a standard."[8] Without the need to pay for trainers, classrooms, textbooks, and the various other fees associated with live training sessions, the reduction in cost with e-learning is the crux of its appeal. Advantages to both the employer and employee include an average of

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[7] "E-Learning Gains Momentum." eMarketer-The First Place to Look. 2006. eMarketer. May 2006 <http://www.emarketer.com/Article.aspx?1002352>

[8] Kruse, Kevin. "The Benefits and Drawbacks of e-Learning." eLearningGuru.com 2004 May 2006 <http://www.e-learningguru.com/articles/art1_3.htm>

40 to 60 percent less learning time, according to Brandon Hall (Kruse), as well as increased retention of learned skills, which is estimated at 25 percent over traditional methods (Kruse).

Companies like Access Technologies Group are making their simulation training software available through the web. As long as the internet is available to individuals using the software, so are all the resources of simulation education. In many ways, simulation software becomes a universal classroom.

Endless Possibilities

Today's business world is all about communication. Companies are constantly growing and expanding at a fast pace, and they need their employees to be doing the same. Referred to as "upskilling," employers are looking for training that meets their needs as quickly and effectively as possible, and teachers are looking for ways to prepare their students for the workforce. Simulation software is not only practical—it's adaptable. From the home to the office, from the veteran to the novice, simulation software can address skills and handicaps in the ways classrooms cannot. The need to train in soft-skills is growing and so is the number of people paying attention. Simulation software is the most effective way for businesses to make the most productive, positive, and satisfied workers they can. It is the best way to ensure success on all levels.