



Engaging Mini-Games Find Niche in Training

Quick, interactive simulations are meeting the training needs of businesses.

By Clark Aldrich

Organizations as diverse as Cisco Systems, the Canadian Standards Association, and Miller Brewing Company have embraced a new approach to create educational content that looks like simulations and games, requires less than 20 minutes of student participation, and is reusable. It is called the mini-game.

Mini-games, also known as casual games or micro games, are immersive learning simulations that are easy to access, are typically based on Adobe Flash, and last from five to 20 minutes. Mini-games include engaging music and appealing graphics, but they also are educational. Because of low development costs, they are appealing to many organizations.

Mini-games are perfect when employees need to learn skills that can be taught through repetition.

The e-Learning Guild maintains an updated survey of trends in immersive learning simulations. Regarding mini-games, it reports that 45 percent of

respondents have deployed mini-games to their constituents and 48 percent plan to use them more in the next 12 months.

Cisco Systems

“My audience consists of people who are preparing for a Cisco certification,” explains Jerry Bush, program manager for Cisco Systems. “We have tried pure games in the past and had a bit of success. For example, I have used multi-player quiz games to review key points before certification tests. Participants seemed to really like them so we wanted to go to the next step.

“One skill that was giving a large number of people some problems was the binary number system,” Bush adds. “So we decided to create a Cisco binary game. I hired a game developer, who added a lot of great ideas, including music and sound effects.

“We came out with the binary game about a year ago. The first year we had 30,000 to 40,000 people using it.”

Bush adds that interest increased in the second year, when players used word-of-mouth to garner other users. “It went viral and has now had about 200,000 downloads. I also sent out a survey to 300 people asking, ‘Did this game help you pass the Cisco certification?’ Fifty percent said yes, 25 percent said they thought it will (they hadn’t taken the test yet), and 25 percent gave it a more mixed review.”

Bush then took the Cisco binary game into traditional classes. While he has not done formal surveys yet, the program seems to have helped students learn binary numbers independently.

Cisco just released the *Subnet Game* to help participants understand the concepts of subdividing networks for traffic and security. Its theme is Area 51—the classic Nevada military base location where, conspiracy theorists say, UFOs have landed—and involves battling malicious hackers.

Beer service

Miller Brewing Company is testing a game called *Tips on Tap* to help teach people who want to serve beer for a liv-

ing. The game challenges participants to be great bartenders, including serving up the perfect draught beer, carding customers, and serving them quickly with the goal of securing generous tips.

Tips on Tap includes embedded mini-games, such as *Score Your Pour*, which teaches players how to pour beer using the proper angle and height to achieve the perfect “head.”

Score Your Pour provides a continuous practice environment for participants to move the glass using a mouse, and then measures the distance and angle of the glass to the tap to create the proper head. Points are subtracted if participants hit the tap—which causes bacteria buildup—or spill the beer.

After each session the participants get feedback and motivational comments.

This level of kinesthetic knowledge is impossible to replicate using traditional linear methods of instruction, but it also is quite expensive, less convenient, and typically less valuable when using the real product.

“In the end, the mini-game, *Score Your Pour*, is a reusable, updatable learning object that Miller Brewing Company can use in live classroom training, in webinars, and as a part of a larger immersive learning simulation,” says Jon Aleckson, owner of Web Courseworks, the company that developed the game.

Causal games

The Canadian Standards Association was searching for a way to let users practice emergency procedures learned in class through an interactive experience. The association examined the way other agencies approached the problem, such as using 3D environments and accurate simulations of how fire burns.

“The game industry has solved a lot of hard problems, but making products that look like games by Electronic Arts might not be the right approach,” says Kenton White, chief technical officer of CSA’s implementation partner, Distil Interactive.

“In CSA’s market of standards and certification, replaying the game is not a necessary feature. If during a single play, a student encounters all of the required content and responds appropriately, there is no benefit to having him play it again.”

The Canadian Standards Association also realized that what they wanted to teach didn’t require advanced graphics or sophisticated gaming technology.

The association focused on creating a product in which the learning objective was to raise the awareness of the participant to think broadly about a disaster site and to learn that missing crucial details could have fatal consequences. The association wanted to do it in a way that was memorable—and the player would take ownership for any failure.

“So we modeled the interface off of the causal games, such as *Bejeweled*, and hidden pictures games,” White says. The result was a mini-game called *Response Ready*, which gave players the ability to identify potential hazards and to associate emergency response procedures for each risk.

In the mini-game, participants view a panorama of a city. The goal is to identify places on the map that carry high risk. The risk areas are assigned both probability and severity factors. If an incident occurs, it unlocks a procedure specific to that risk.

“If I go to the gas station, I have to identify things that could cause spills, such as gas pumps, tanker trucks, or propane tanks,” White says. “After I identify risks and put in place procedures, events occur. A tanker truck comes in, and there is a spill. I now see how well my rules handle the situation.”

In some cases, there may even be two different spill procedures, and a real-time challenge is to match the right procedure to the right spill.

Response Ready does not set participants up to fail the first time. However, many players make mistakes in the first round. For example, they often believe that the amphitheater is just background art when in fact it

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represents a place where an evacuation process occurs.

Some experienced game players are initially disappointed because they have different expectations about what a game is. Others who are not game literate briefly experience an initial frustration with the game's interface. Both



issues are resolved quickly, and the game replaces an hour of classroom time with about 15 minutes of self-paced time in a way that enhances public safety.

Inspiration from politics

Mini-games also work well when much of the raw information is already available on corporate websites or in newsletters. The point isn't to shovel more raw data into the students' heads, but to build interest and ownership.

As a result, some mini-games straddle the line between being simple and simplistic. Learning professionals will bristle at the abundance of abstractions within some mini-games, but both corporate communications and salespeople will feel right at home with the games' practical approach.

"The place today to see the best examples of high concept mini-games is in political campaigns," says Rick Blunt, associate professor at DeVry University in Arlington, Virginia.

The candidates know that rather than being completely accurate, they have to sell a simple message. For example, the Democratic National Committee portrayed President Bush pushing an old woman down the stairs. The game requires players to "save the grandma."

Mini-games work well when raw information is already available.

Simulations 101

One appeal of mini-games is their relatively low cost—\$10,000 for a five-minute game, \$15,000 for a 10-minute game, and \$40,000 for a 30-minute simulation—and quick turnaround. Some mini-games have been built in two weeks.

Advocates of simulations need to ask how the content meets their goals, such as increases sales per employee, or lowers customer turnover. Mini-games present an additional challenge. Advocates need to convince the boss that when the staff develops a mini-game, their attitude is business-like, especially when protecting resources, meeting deadlines, and measuring results, according to Aleckson.

Talent and team

The right team to put together a mini-game is a slight variation of the team needed for a typical course.

"I talk about a tripod," says Bush from Cisco Systems. "You need a learning expert, a subject matter expert

(SME), and a game developer. If you try to develop a mini-game with only two, it doesn't work. The mistake that I see happening is that educators want to build a game but they get someone without much experience to do it."

"The trend is toward the technical people to build tool kits to get in the hands of subject matter experts," says White. "It is still going to be the SMEs who take ownership of the final experience and work hard to get it right through tinkering."

When developing a mini-game, it is usually difficult to determine where to start. It's tempting, but almost always misleading, to look at an arcade style game and try to figure out how to infuse it with content.

Once a simulation enters the design process, the focus should be on simplicity. The key to a successful mini-game is engagement. The first level should be easy.

"One thing that we try to do is talk about versions," notes Aleckson. "We define version one so that it is achievable and attainable but the project is not done. We define success so that if it meets targets, then we will reinvest in them. So our first goal is to define the scope of the first version. No matter how intellectually complete or rich your design is, you won't know how it plays until you see it in action. Then you will know how to make it better."

Mini-games are likely to explode onto the learning scene because they have quick spurts of engaging content that build motivation and interest, are cost-effective, and easy to consume.

Mini-games have a longer shelf life. Unlike video, they can be updated efficiently, both as templates and as final content.

"This content will work really well on mobile phones, as long as the interface is simple and the graphics are clean," Blunt says.

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