td
talent development

try
SHORT
SIMS

The synergy between meaningful interactivity and cost effectiveness lies in short sims.

OK

Success ✓

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BY CLARK ALDRICH

Sid Meier, legendary creator of the *Civilization* video game series, says that "a game is a series of interesting choices." This may be even more true of online education. There is a growing realization that significant interactivity is necessary to a successful learning program in more ways than we can count.

From a pedagogical perspective, the more interactivity the better. However, interactivity can be expensive to build, time consuming, and can require special programming skill sets. Also, implementation is hard to fix midstream. All that means significant interactivity is beyond the scope of most corporate and university programs. For those programs that do receive the budget and attention for special, game-like content, they tend to get dated and bloated designs. Enter short sims.

Short sims are an emerging type of interactive educational media that are typically five to 12 minutes long, with few words and many decisions. They tend to focus around a single subject area and can be embedded in traditional course material. They are simple to engage by design, typically with a multiple-choice interface.

The underlying approach of short sims may be best described as a simulation of a simulation. They comprise a complete set of static, nonlinear storyboards that are connected together through links to create the sensation—and meet the pedagogical goals—of dynamic interactivity at a fraction of the time, cost, and requisite skill set.

The need for interactivity

Interactivity can test a learner, to be sure. But an educational experience also should provide custom feedback to show why any wrong decision was wrong.

Interactivity can enable learners to customize their experience, from engaging optional levels to asking for more information only when needed to choosing their avatar or business industry. Interactive experiences allow online role plays and give participants the opportunity to deftly apply skills.

Interactive media are more engaging (and less numbing) than linear media. They help learners process and begin to internalize and own new information, not just cache it. And creating interactive media even changes the culture of content producers, from focusing on experts and top-down leadership to concentrating on collaborating with learners and considering their application of the knowledge.

An example of a decision in a short sim

To help you picture what short sims can achieve, imagine a simple short sim to train passport agents on aspects of accepting applications (see Figure 1). The on-screen coach guides the player through the process. The experience can go like this:

1. The coach presents the player with part of the passport application and asks whether there is a problem. The player can either accept the scenario or ask a question (slide A).
2. After choosing to ask the applicant a question and getting a response, the player either chooses to move forward or indicates there's a problem (slide B).
3. After indicating there is a problem, the player must identify it using a multiple-choice interface that enables the player to toggle the red selection box (slide C).

Figure 1. Instruction on the Passport Application Process

Slide A

Slide B

Slide C

Slide D

UNLIKE TRADITIONAL SERIOUS GAMES, INSTRUCTIONAL DESIGNERS CAN BUILD A FEW SHORT SIMS RELATIVELY QUICKLY.

4. The coach gives the player acknowledgements and a brief explanation (slide D). If the player selected the wrong part of the application, he would be able to try again. This mechanism discourages players from, at other points, flagging a step as a problem if they cannot first identify a problem.

One advantage over simply reading about this example in a linear text is that there is a decent chance the player did not initially catch the mistake and is less likely to brush off the example.

Designing sims

Short sims are technology independent. They are not defined by a specific interactive media authoring tool and don't require special hardware configuration. You can produce them with Articulate Storyline, BranchTrack, or other widely available tools. They should be accessible anywhere browser-based content can run.

The most effective short sims tend to follow seven specific design goals.

Build competence and conviction through player actions. The role of short sims is to develop competence and conviction. Competence is how to do something, and conviction is the deeply held belief

that something is important. That means allowing players to make mistakes and helping them experience why they are making mistakes.

Short sims should show, not tell. The learning model should be discovery based, with players proving ideas to themselves. Text should be short, with a much greater role given to visuals and interactions.

Quick and easy to engage and replayable. Short sims should be easy to start playing, without a set of directions or training levels needed or even a separate download. They also should be short (five to 12 minutes) and often rewarding enough to play through four or five times, both to win and to simply explore. Short sims can be 508 compliant.

Quick to build, easy to update. In terms of production timeframes, short sims match other educational content. Unlike traditional serious games, instructional designers can build a few short sims relatively quickly (see table below). Instructional designers can assemble graphics in PowerPoint from clip art and basic drawing tools. Tip: *New Yorker*–style graphics can be the most timeless.

Also, short sims are easy to come back to and make changes to based on user feedback or as the world evolves, not just abandoned when done and the design team has dispersed.

For planning, assume each level has 20 screens; add 10 more screens for the introduction and conclusion. Each level may have three significant decisions, plus optional definitions.

When determining content, the best single question to ask any subject matter expert is "What are common mistakes in this area?" From this question and follow-ups, break down the SME's responses into six categories of (virtual) note cards: starting points, successful outcomes, unsuccessful outcomes, moments of truth and interesting decisions, story beats or process steps, and interesting facts and phrases. Most of these

Estimated Short Sim Design Time (in Hours)

	One-Level Sim	Four-Level Sim	Seven-Level Sim
Step 1: Background research and high concept	3	10	20
Step 2: Art and interface design	3	10	20
Step 3: Structure and dialogue	3	10	20
Step 4: Refining and review	3	10	20

note cards become the nodes that are organized into short sim levels and structures.

Rigorous underlying model. No matter how short, the only worthwhile sims are the result of a deep and profound knowledge of the subject matter. Even though a branching structure allows shortcuts when it comes to rigor, the interactivity and visualizations in a short sim should have the underlying mathematical model of a working computer game.

Coexist with other educational content. Short sims should be able to stand alone as a self-contained piece of content that a player engages. But they also can coexist seamlessly with other educational content, including text, illustrations, and video snippets.

Collaborative not directive leadership. Directive leadership is giving people orders and expecting them to obey—the curse of linear media. Collaborative leadership is working together to solve a problem. Think of sim as an assistant. As much as possible, the dominant on-screen character should be there to help and support the player, not judge.

Simple mechanics and open-ended creativity. The power of short sims is to leverage simple technology to enable people to imagine whatever they want and then be able to present a gently abstracted version of it.

Teach predictable processes

A straightforward type of short sim teaches users how to follow predictable processes, such as a bank teller cashing a check or making a deposit or a pilot conducting a preflight checklist. These are effective and greatly speed time to comfort.

These sims take the user through the various steps of the process and typically present two or three challenges per step. For example, the sim on accepting a passport application also used this interaction to raise awareness of math issues in an audience often not comfortable with numbers (see Figure 2):

1. The coach sets up the situation with a message that says, "A family arrives wanting passports."
2. The coach presents the details (slide E).
3. Rather than being thrown into a sea of numbers, the coach eases the player in. This level design—with the first few decisions being simple—is also typical of casual computer games. Importantly, the coach takes on a helpful tone, volunteering to keep the running total and using expressions such as "Let's figure out …" (slide F).
4. To ease any number phobia, early on in the sequence, the player's decisions are around what influences the numbers, not the numbers themselves. If the player selects the wrong answer, the coach presents an explanation.
5. Help is available so that the player can learn

more on the fly but does not have to. For example, in a scenario in which the player must determine whether she should apply an execution fee, one of the buttons among the responses is "What's an execution fee?" The "help" fully answers the question.

6. There is also always a button for players to receive a reminder about the situation to help them make decisions. The situation reminder provides the rest of the necessary information. Again, it is not proactively presented to the player but must be asked for, streamlining the experience.
7. Short sims, such as this one, can present quite a few easy questions in a short time to build comfort and experience, not just one big hard question to trick and test the player.
8. Subtly, the problems get harder, requiring the player to both make the decision and perform the math to answer the questions.

Figure 2. Instruction on Determining Passport Fees

Slide E

Slide F

By the end of this two-minute sequence, the player understands what it is like to experience the level of math necessary to accept applications, has gained some confidence in variations, and even has experienced what the final totals may look like. From a design perspective, the entire experience does not require custom art, so it is easy to change at any moment when passport fees change.

Low-hanging learning objectives

In my experience building short sims for a variety of organizations, some consistent low-hanging targets of short sims have emerged.

Present labs. Short sims can be used to make labs—places for users to safely experiment with actions. The mechanics of the world are predictable and respond immediately to user decisions. Often, switches can be turned on or off or dials up or down, with observable effects.

Introduce complex processes. Some short sims help players follow and apply complex processes. Too often, traditional noninteractive methodologies have been painfully insufficient here. In schools, we have all experienced situations where a teacher explains a mathematical process in a class, going through all of the steps, but those of us who thought we were following the lecture are then confused later when faced with homework problems.

Through chaperoned walk-throughs with dozens of small or abstracted decisions, short sims can eliminate this chasm between presented walk-throughs and competence.

Allow exploration of interesting systems. Short sims may provide a sandbox for users to play in and see what happens. These explorations, often with goals or restraints, can be similar to labs but include more social or business situations and more complex and less predictable responses to actions.

In one sandbox, a student runs a restaurant chain but has to grow it through making only five decisions, with each opening up or closing down other opportunities. Different decisions result in different businesses that, along with the short play time, encourages trying again. This sim's learning goal is to help employees adopt a business owner's perspective and understand the strategic impact payment systems could make on a business' evolution.

Going beyond early examples

While there are early patterns of uses that are forming, short sims are ultimately an open-ended approach. In my two roles—delivering finished short sims to clients and working with clients to build their own—the only limit I have seen is the designers' creativity.

Short sims have produced high employee satisfaction scores and greater class completion rates in colleges compared with traditional media. Numerous corporate training organizations have committed to shifting their own deliverables to greatly increase meaningful interactions for their learners through short sims.

But the biggest deal about short sims may be that they don't feel like big deals. Most organizations that produce educational (or assessment) media can build short sims without new hires or greatly changed processes.

The more students and instructors engage short sims, the more short sims become their default expectation for educational content. And until short sims are used in equal parts to traditional linear content, the question for participants will be: Why aren't there more of them?

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