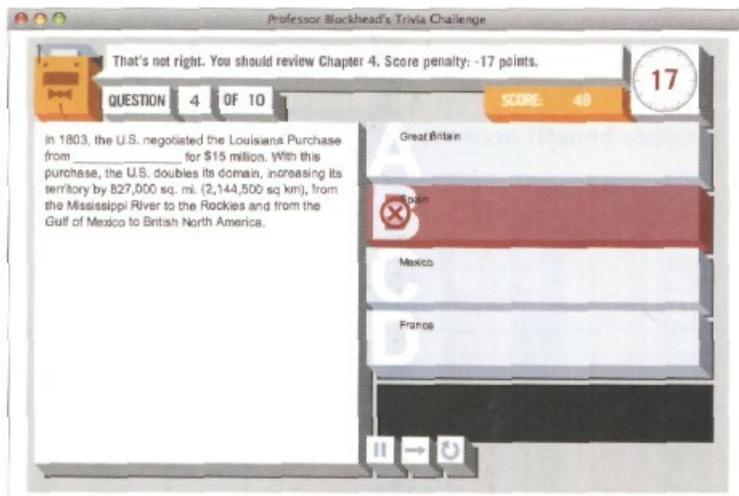


DISCIPLINES

# LEARNING BY DESIGN

From the classroom to the boardroom, instructional designers create training materials for all kinds of learners, bridging the gap between teachers and students. Here, we explore this little-known facet of the design industry.



You'll find instructional designers working everywhere from universities and school systems to consulting companies, and putting together courses on nearly any subject you can dream up. Out the exact duties that go with the job title tend to vary from place to place, as does the way instructional designers interact with graphic and web designers—if they do at all. "When you say someone is an instructional designer, it encompasses a lot of different things at a lot of different institutions," says Daniel Stanford, an instructional design consultant at DePaul University in Chicago.

He came into the field after earning an MHA in interactive design and game development, though he admits that most instructional designers don't have any graphic or web design background at all. They're more likely to hold degrees in instructional design, educational technology or something closely related. As part of DePaul's Instructional Design and Development Department, Stanford spends the bulk of his time designing and developing online educational tools.

For example, he created a trivia game with Flash to help accounting students prepare for the CPA exam. Almost everything I build is designed to be easily repurposed," he says. "I create the framework, then the professors provide the content—whether that's multiple-choice questions, video clips of them demonstrating something or creative writing samples." Once he's created a tool, Stanford simply changes the content of the XML file, which populates the tool, to use it again for another course. He also created a video tool that



**CLASS PARTICIPATION**  
Daniel Stanford, an instructional design consultant at DePaul University in Chicago, developed a Flash trivia game that can be repurposed for different subjects (above). He also worked with a professor to give students access to video clips demonstrating visual phonics—gestures similar to sign language—between classes (left). They're viewable with a web browser or can be downloaded to a mobile device.



**HIGH SCORE**  
Part of an online class in interactive design and game development offered by the Savannah College of Art and Design (SCAD), this timeline (left) allows students to scroll through significant dates in gaming history. Media designer: Jeong-Hyo Kim.

**ART APPRECIATION**  
Left: Students in SCAD's online Women in Art class choose a painting with their mouse then drag it onto the correct time period to help them master art history. Media designer: Willem van der Schyf.

**Dorothea Lange**  
The following are several of her children in Ipomo, Calif. photographs. Click each exp...  
Fig. 3-7: Dorothea Lange, *Migrant Mother Saline* (1935)  
"I saw and approach... remember how I expl... me no questions. I m... I did not ask her name... that they had been... the children killed. S... seem to last with har... might help her, and s...  
Florence Thompson is bette... the most reproduced photog...  
It seems clear why Lange sel... children, facing away from the... innocence, helplessness, and... sown, gazes off into the dista... figuratively supports her dep... world with nothing to her nam... the frame or that her pose all... depictions of Madonna and child...  
Reaf #learning.scad.edu

allows students to play back visual phonics—gestures that help the hearing-impaired understand phonetic sounds and improve pronunciation skills—and practice them between class sessions.

There's increasing emphasis on technology and visual design within instructional design, but Stanford says aesthetic standards are lower in higher education than in the commercial world. Since he doesn't have a big group of designers to bounce ideas off, he tends to drive most of his department's visual design decisions. Still, his job offers advantages over agency life. He appreciates the work-life balance it provides because he's not typically stressed about tight deadlines. Plus, he finds it more fulfilling: "All the projects I work on are supposed to teach people," he says. "I worked at an ad agency for about a year. Sometimes I felt like I was producing something for companies I didn't feel had a good reason for being."

Jackie Rejfek, an instructional designer for eCollege, which develops online learning materials for kindergarten through college, fits into the more traditional job description for the field. She works with subject-matter experts to create scripts and storyboards for online classes and then works with a developer to post them online. "It's like laying out a textbook," says Rejfek, who has significant input into a course's visuals. She'll include notes on look and feel along with where to incorporate images and interactive elements to make the class more engaging and educationally sound. For a script about Antarctica, for instance, she

suggested specific images and a link to an interactive map of the continent. "It's school for the video game generation," she says.

### ONLINE TEACHING

If you flash back to your college days, you probably spent a lot of time sitting in lecture halls and furiously scribbling notes. But today's institutions of higher learning are expanding their reach by offering more courses and degrees online. At the Savannah College of Art and Design, for example, there are nine degree programs offered online, ranging from historic preservation and graphic design to interactive design and game development. The college even has people dedicated to creating the courses that make these SCAD-cLearning programs possible. "We work with the faculty to take material typically delivered in person to the internet," says Mona Meyer, director of instructional design for SCAD-eLearning.

And that's where the expertise of instructional designers comes into play. Meyer's staff includes six instructional designers and three media designers, who build online learning tools and have jobs quite similar to the average web designer. When there's a course that needs to go online, Meyer pairs the professor with an instructional designer to develop effective teaching materials. Together they'll identify learning outcomes and break down a syllabus into multiple units. Instructional designers also look for points in the content where they can add value with illustrations, photos or

**INSTANT GRATIFICATION**  
Unlike in a textbook, this online course in contemporary photography (above) allows students to enlarge an image for a closer look. This gallery approach allows SCAD to showcase bodies of work without extending the page length. Media designer: Jeong-Hyo Kim.



#### MULTIMEDIA LEARNING

Jackie Rejcek, an instructional designer for eCollege, designed this mock-up for an online AP Spanish course for high school students. When she develops a course's content, she might suggest images, interactive elements, audio and/or video to make the material more educationally sound and engaging.

Flash learning tools. "The level of detail of the content is similar to what you'd see in a textbook," Meyer says. "What you get that isn't provided in a textbook is interaction."

John Sharp, a professor of interactive design and game development at SCAD-Atlanta, admits to being skeptical about online classes before working with SCAD-eLearning, but he quickly changed his mind. "One thing I didn't expect was that I get better participation in my online courses than my bricks and mortar courses," he says. When Sharp recently rewrote a graduate class called Interactive Design and Media Application, for example, he worked with Meyer on ways to get more students involved, including fine-tuning the language he used for the course's online discussion boards.

Meyer also helped Sharp keep the material crystal clear—a necessity in an online learning environment. In a traditional classroom, Sharp might explain something and have two or three students raise their hands and ask questions, but online students take classes on their own schedules, so they don't have the opportunity for real-time answers.

"We look at it from the end user's experience," Meyer says. For Sharp, another advantage is the innate linking capability of the web. He can send students to online resources that he might not have time to offer in a traditional class and that students might not follow up on after leaving a lecture hall.

Online courses also offer the opportunity for interactive learning tools, and that's where SCAD-eLearning media designer Aaron Pompei comes into the picture. For a recent course on the history of cinema, he figured out the best way to deliver the films, ultimately putting them in a Flash player and choosing a progressive download system that allows students to start watching as soon as the buffer fills. "Students don't have to wait for the whole thing to download, so it saves them time," he says. For another class, a fel-

low media designer created a matching game, where students drag images of paintings onto labels that correspond to the appropriate art periods.

#### CORPORATE TRAINING

But instructional design reaches beyond the classroom. Businesses today require more training than ever to keep pace with new technologies and corporate practices. And more and more, instructional designers are finding a seat at the boardroom table.

It turns out that creating custom training solutions for the business world follows a process pretty similar to a design or branding effort. When Lisa Toenniges, president of Innovative Learning Group in Royal Oak, MI, starts a new client project, she gets all the right people together for a kick-off meeting. The kick-off meeting is a time to ask lots of questions and set expectations about how things will progress. "We always start with business results," she says. "We never want to do training just to do training."

Toenniges holds a masters degree in instructional design and has spent 20 years working in the field. Today she runs her own company, which has created custom training materials for such blue-chip corporations as Volkswagen, LaSalle Bank and The Dow Chemical Co. Her team works to make sure their efforts will improve profits or other business objectives, and she says some of her firm's best work has been tied to strategic initiatives, such as compliance with Sarbanes-Oxley accounting laws or rolling out a large software system.

Her team follows the ADDIE model—analysis, design, development, implementation and evaluation—as they produce training materials. Part of that first step, for instance, is making sure training will solve a client's problem. What do they want people to be able to do? And how will they demonstrate those learning objectives? "You have to be able to see what they can do," she says. "A learning objective is a verb you can see." Once the design team knows what people need to learn, they'll start thinking about the best delivery method, which might be face-to-face classroom training or an online course.

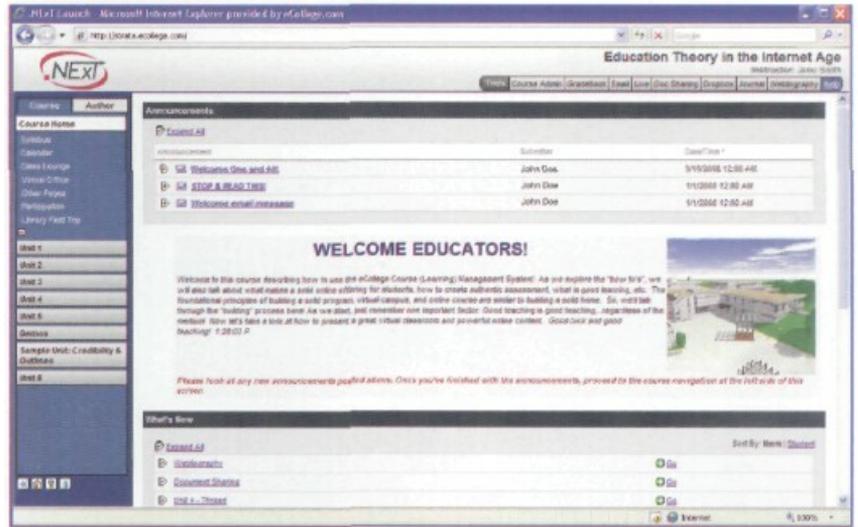
Next, Toenniges and her staff figure out what content supports the learning objectives. What do people need to know to fill out the form or run the software? They'll create an outline for the content and put it in the right order before moving on to instructional strategies. Is the content best delivered through group discussions or case studies? Should it be tested with pencil-and-paper exams or multiple-choice questions online? It's a systematic process that ensures the training material accomplishes the established goals. The firm's on-staff graphic designers create print materials and design online classes.

In contrast, when a subject-matter expert—perhaps an engineer—develops training materials, Toenniges says, it tends to take them three times as long to create something that's not even up to par. "It's not systematic, and it's not done well," she says. The content, for instance, might only contain information to support

eight out of 10 learning objectives, or it might fail to let people try out the new skill, "A lot of training programs don't build in enough practice," she says. "Then people end up practicing on clients-'" She likes to use the analogy of riding a bike: It's nice to have someone tell you how to do it and show you how to do it, but you really need to practice riding to master the skill.

Instructional designers also take into account different peoples learning styles, which can range from audio to visual, and they translate industry lingo into more approachable language. "We try to break down the technology into 'Average Joe' lingo," says Benjamin Yeung, an SAP training consultant for Ariston Consulting and technologists. Yeung works with local governments and public agencies implementing SAP—large software solutions—to develop training materials for their stalls. Then he puts those materials into a web-based tool and makes sure his content hits different learning styles. If there's a block of text, for instance, there might be a voice reading it aloud for audio learners. Or he'll add an illustration for visual learners.

No matter what setting you work in, there's a difference between knowing how to do something and teaching someone else to do it, and instructional designers bridge that gap. Says Toenniges: "The people who are best at doing something are the worst at teaching. Your grandma can't tell you how to bake the cake. It's intuitive." 1W



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**VIRTUAL CLASSROOM**  
This online campus shows how a typical eCollege course looks. Instructors can use the author tab to add new units, hide old ones, add quizzes or set up classroom discussions and chats.

- MONA MEYER SAVANNAH, GA [www.scadlearning.org](http://www.scadlearning.org)
- JACKIE REJFEK DENVER [www.ecollege.com](http://www.ecollege.com)
- JOHN SHARP SAVANNAH, GA [www.scad.edu](http://www.scad.edu)
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