Immersive Learning
Designing for Authentic Practice

Koreen Olbrish Pagano
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Rating
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Take-Aways
• To perform well, you need to know what to do and how to do it.
• Most modern training – whether in a classroom or on a computer – offers little opportunity for practice or feedback.
• Computerized immersive-learning environments recreate the best features of the apprenticeship model.
• Immersive-learning environments include video games, virtual worlds and simulations.
• Practicing skills in a virtual environment can be more effective than practicing in the real world.
• Immersive environments teach you how to use equipment and enhance your skills in decision making, sales and service.
• Immersive environments address three learning domains: “cognitive, affective and psycho-motor.”
• “Analysis of performance” is the most critical part of immersive-learning design.
• Introducing fun elements and game-like challenges motivates learners.
• Learners need permission to fail and to learn from their mistakes.
Relevance

What You Will Learn
In this summary, you will learn: 1) Why training programs often omit the most important step for improving performance, 2) How immersive-learning programs can improve employees’ skills and behavior, and 3) How to design or buy and implement an immersive-learning experience.

Recommendation
Corporate training systems often fail to improve performance. Educator Koreen Olbrish Pagano, author of the Learning in Tandem blog, says that’s because organizations have abandoned the one-on-one apprenticeship model – along with its emphasis on practice and feedback. True apprenticeship is impractical today, but you can recreate its best features with immersive learning in computerized virtual environments. Pagano details the design process for computer games, simulations and other virtual worlds. This beginner’s guide avoids the technical nitty-gritty while offering a plethora of real-life examples. getAbstract recommends this excellent introduction to human resource managers, training specialists, game designers and likely investors.

Summary

The Benefits of Apprenticeship
Corporate training often omits a crucial step in learning: practice. Training in a classroom or on a computer usually focuses on delivering information. The theory is: Tell people what they should do, and they will do it. But to perform well, you need to know what to do and how to do it. The only way to master the “how” is through practice. The old-fashioned apprenticeship system of learning emphasized the how and focused on doing. Learners would watch a mentor perform skills and imitate what they saw, practicing while the mentor offered immediate feedback. Apprenticeship isn’t practical today. Sales trainees cannot “practice” on potential clients, for instance. Even if a senior rep accompanies a new salesperson on a call, the mentor can’t provide feedback until the interaction is over.

To train large numbers of people, corporations usually gather trainees in a classroom for “lectures, discussion, reading, demonstration and sometimes practice, to help people learn en masse.” E-learning, instruction via computer, made training available to more people, including those who weren’t physically present. But it didn’t improve performances. E-learning programs mimic the classroom experience with a series of informational screens and a knowledge test.

“Immersive Learning”
Instead of these tactics, focus on the three domains of learning. The “cognitive domain” includes the acquisition of information. The second domain is the “affective,” which is the learner’s emotional connection to the subject matter. The third is the “psycho-motor,” the trainee’s acquisition of skills. Conventional training does not fuel students’ emotional investment in what they are learning and it offers no opportunity to practice the new skill.

Immersive learning combines the best features of the apprenticeship system with the scalability of classrooms and e-learning. It provides a computer-simulated environment – like an operating room, a bank or conference room – where the learner can practice. Immersive learning incorporates all three learning domains. In the cognitive domain,
Immersive Learning

The challenge of immersive-design implementation is to create an environment where learners feel safe practicing, see the value in the experience and embrace the experience as an opportunity to improve their performance.

Companies spend...time and money to train employees, but not to provide...realistic contexts where they can practice applying their knowledge or receive performance feedback.

How do you pick which technology to use for your immersive-learning design? Consider the performance goals, the audience and the learning environment.

Humans like to play. We like to learn. We like to learn by playing.

Planning Immersive Learning
The process of designing an immersive-learning experience unfolds in five stages: “analysis, design, development, implementation and evaluation.”

Analysis of the workplace is most important. You might spend 80% of your time on this phase because the data you uncover at this point guides every subsequent design decision. Delve into why workers fall short of performance goals. Usually, the problem is not that they don’t know what to do, but that they lack the skills to do it. Identifying such “failure points” – the gaps between knowledge and action – gives you a guide for devising scenarios for virtual practice.

For example, if you discover that sales reps lack customer-relationship skills, design a sales-call scenario that lets them practice those skills. To uncover failure points, observe and interview. Getting a genuine picture is difficult because observing people as they work affects their behavior. You’re also trying to draw conclusions about an entire operation with a relatively small sample. Interviews with workers and stakeholders may also yield insights into failure points. Seek details that make your immersive environment more realistic.

When you have enough data, move to design and development. The analysis phase isn’t really over, because you should remain open to new information throughout the process. “Approach immersive design from a position of a questioner: never assuming an answer and always seeking new sources of information to make your immersive environment as effective as possible.”

“Create the World”
The design and development phases are similar to creating a movie or book. Decide on a setting, dream up a “story line” and create a cast of characters. You are not setting out to entertain; your goal is to invent the scenarios that offer the most opportunities for practice. Cultivate “authentic practice”: Learners must complete realistic tasks or challenges, and the learner’s performance must engender realistic consequences. As you design your world, keep two concepts in mind:

1. “Fun” – Games encourage repeated play. People want to beat the game; they’re motivated to master the skills. A fun design encourages people to practice work skills.
2. “Flow” – People who totally engage in and focus on an activity are in a state that theorist Mihaly Csikszentmihalyi called “flow.” To maintain flow throughout your scenario, increase the difficulty level at the rate that the learner’s skill improves. If challenges increase too fast, the learner gets anxious. If they accelerate too slowly, the learner gets bored. When they match up just right, you get flow.

Story Line
The plot dictates your learner’s possible actions within the world. Structure your scenario as a “short story collection” or a “novel.” A group of short vignettes lets the learner master...
understand what it is that makes an organization successful and then meticulously create experiences to bring along those members of the organization that are not performing as expected.

"To engage and motivate learners is for them to feel an emotional connection or responsibility to the characters in your storyline.

"Games are an amazing mechanism for assigning value for each action or decision, as the game can assign extrinsic rewards for each behavior until the intrinsic reward of the long-term aggregate of behaviors can be appreciated by learners."

"The most important question to ask yourself as you begin to think about scoring and success measurement is: How is success measured outside the environment?"

Understand what it is that makes an organization successful and then meticulously create experiences to bring along those members of the organization that are not performing as expected.

Character

As in fiction or drama, compelling characters engage your audience. When learners feel an emotional connection to characters, they become invested in what happens to them. Having realistic people allows trainees to practice interpersonal skills. Borrow a technique from fiction and write a detailed biography for each person in the story. Think about each character’s age, gender and family history. Is the character married? What makes him feel good? What is she afraid of? You won’t put this information into the story, but it helps bring the characters to life.

Platform

The performance goals during the analysis should guide your choice of a technical platform:

- **Games** – Like video games, learning games are goal-oriented and emphasize competition. This encourages repeated play. Game platforms are useful for learning difficult or complicated skills.
- **Alternate-reality games** – These “ARG” scenarios “combine real life and digital game play activities.” For example, users can track a real-world scavenger hunt online. One company used an ARG to train employees how to use its new website. The scenario involved solving fictional customer service problems by finding information on the site.
- **Simulations** – These setups emulate aspects of the real world, such as airplane controls in a flight simulator. They help learners practice decision making by immediately showing them the consequences of their choices.
- **Virtual worlds** – More elaborate, these scenarios recreate the feel of a physical space, as in the online world “Second Life.” They do not have defined story lines or goals. Instead, “people respond to events that surround them and those interactions build the context.” Virtual worlds offer sound training for social and collaboration skills.
- **3-D immersive environments** – While similar to virtual worlds, learners have a specific task to perform and a goal to pursue. A doctor could practice a complicated surgical procedure, for example, or an insurance adjuster could assess a virtual house.

The Learner

As you design a learning experience, define the user’s perspective and how he or she will perform in the immersive environment. The most researched perspective is a third-person presentation of the learner that he or she uses to perform tasks and interact with other characters. People develop emotional attachments to their avatars and feel engaged in the tasks avatars perform. They vest personally in the avatar’s encounters with other characters.

Documentation

When you’ve determined your setting, story line, characters, platform and user role, prepare the necessary documentation for your game developers. Include:

discrete skills before putting them together. This is useful in learning a physical skill, such as golf. Each segment of the training focuses on a different skill – the drive, the putt, and so on. In other situations, a continuous unfolding story, akin to a novel, is more appropriate. For example, this works well for project management, where each choice determines what happens next. Decide if your story should take place in a realistic or fanciful setting. A realistic setting is important when the training involves learning to use equipment or perform specific tasks. If you are teaching abstract concepts, a more fanciful setting underscores the universal quality of the issues. For instance, one training experience explored the issues of accommodating organizational change by exploring the actions of a spaceship crew.
Immersive learning focuses on performance goals, not learning goals.

Practice is the key to improvement and immersive learning is the best vehicle for scalable practice.

Game designers know more about cognitive science and motivation theory than most learning professionals.

• “Flow chart” – An illustration of all the “potential actions and decisions and their consequences within the story line.”
• “Storyboard” – A graphic representation of the script, which “includes all the [plot] detail and dialogue that is not represented in the flow chart.”
• “Use case” – Outline the experience from the user’s perspective. Where does the experience start? How do the players proceed? What choices do they encounter? The use case can “identify...features and functionality...important to [the players] that you hadn’t previously considered.”

Implementation
When you introduce your immersive-learning environment, you may have to overcome resistance. Employees may be uneasy about the technology or question the seriousness of learning through games. Sell them on its value and assure them they can handle the technical challenges. Assign a “puppet master.” This facilitator will “monitor player activity, guide players to taking the next steps and make adjustments as players engage with each other.” A puppet master proves particularly useful when you introduce alternate-reality games and virtual worlds. Never allow employees to use an immersive-learning environment as a tool to assess performance. Managers may be tempted to track and rate what learners do. This defeats the purpose and impedes performance. Learners must have permission and freedom to fail and learn from their mistakes.

Evaluation
Plan two types of evaluation protocols. First, devise a mechanism for learners to track their progress. Second, figure out how to assess the effectiveness of the environment itself. See if your design has improved performance across the organization. “Story-line feedback” is the most direct way for players to gauge their progress. The environment reveals the consequences of players’ actions or interactions. A success metric, such as a progress bar or score, shows players how to move forward through the environment. Offer “achievements,” such as rewards or badges that players earn. When they reach particular benchmarks on the way to the main goal, use achievements to reinforce desired behaviors and decisions. To evaluate the effectiveness of your design, compare the firm’s post-immersion learning performance benchmarks with the data you gather during the analysis phase. Or implement the training program with a “pilot group” of learners. Compare their performance data with a control group of workers who have yet to experience the program.

The Future of Immersive Learning
Immersive learning has the potential to transform training. Companies that can get workers to learn through virtual practice can “leverage” this training “as a competitive advantage.” Future immersive environments will include more social media and ways for trainees to collaborate as they learn. Training will more seamlessly integrate digital and real-world activities as “learners...practice real tasks, debrief with peers and receive personalized coaching from mentors and experts.” Immersive learning is apprenticeship in cyberspace.

About the Author
Speaker and organizational consultant Koreen Olbrish Pagano cofounded the Freire Charter School, taught at Harrisburg University and created the blog Learning in Tandem.