

GET IN THE GAME:

Integrating Essential Game Design Elements
into Instructional Design for e-Learning



by Ethan Edwards

chief instructional strategist
allen interactions

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interactions

LEARNING. FOR A CHANGE.

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When instructional designers seek to enhance the appeal of e-learning, the desire to make a “game” is never far away. Yet so often, educational games fail to really succeed in creating irresistible experiences in the way that successful games do. And what’s worse, it is not clear that a lot of e-learning games create any significant increase in learner engagement or performance. Even while recognizing the potential increase in appeal to learners, many organizations are hesitant to invest in games—citing inefficient use of training time and questionable use of limited development resources, and, I believe, belying an unstated but deep-rooted prejudice that a truly enjoyable training environment is somehow undesirable.

Initial efforts seem to strive to recapture the “fun” of an existing game. These games end up being rather unsatisfactory because the aspects that seem to contribute to the game’s appeal fail to transfer to individualized delivery. Two common game applications illustrate the weakness in this approach.

Jeopardy

Nearly every authoring platform provides a template to create easily a Jeopardy-style question and answer game. A “board” has about 30 cells, each concealing a question to which the learner must supply an answer. (Oddly, most learning versions of Jeopardy I have seen fail to carry forward one of the key elements of the original, in that the board should present answers to which the learner must present a question.) But playing solitaire Jeopardy is really not very much fun at all. Something critical is lost in translation from a fast-paced competitive game to a rather tedious, thinly-disguised system for asking questions. The motivation in the TV show is not simply to answer a question, but rather it is to answer a question before anyone else can. (Computer-assisted jeopardy games played out in a classroom with multiple teams competing against each other can be amazingly useful, because this idea of winning is preserved.)

The Game of Life

LIFE is one of the oldest standard board games and lets players experience the ups and downs one might experience in life from college to retirement, with the goal of ending up wealthy (and presumably happy). Nearly every time I have been involved in the design of process-focused training, such as teaching the performance review process, inevitably the idea of structuring the instruction around this game surfaces. It seems like a good idea; the performance management process has a fixed beginning and a fixed end with a path between that everyone must follow. Along the way, various opportunities or hazards might enhance or derail the user in successfully achieving the end goal. While the real game can be fun, the online training version usually fails. Why? In the board game, the exact hazards one encounters are largely a matter of chance, with Blind Fortune doling out pings and perks more or less evenly to all. In the training version, however, there are specific training outcomes that must to be communicated to each student, so progress can’t be left to chance; instead, the learner must somehow be moved around the game board in a distinctly non-random way. Here, the fun (and frustration) in the original is the randomness by which anyone’s fortune can be made or lost, but when that unpredictable aspect is taken away, the pretense becomes tedious.

It’s amazingly difficult to capture “fun;” indeed it’s something that can rarely be guaranteed. It is important in educational games to try to design instead for user “engagement.” And designing a game that actually creates that engagement is not a simple task, as discussed in Salen and Zimmerman’s thorough analysis

in their book, Rules of Play. If done right, fun (or at least a positive disposition toward the activity) will follow. There are a number of factors that can contribute to engagement, but the three of the most powerful are risk (or meaningful consequences), concrete and meaningful choices, and a compelling frame that maintains focus.

ESSENTIAL ELEMENTS

Risk

It’s odd to hold risk up as an essential ingredient to make educational games engaging, since risk is so often viewed as a negative: something bad might happen! But risk in gaming isn’t that simple; desirable risk in gaming is a situation where the player is aware in advance of the uncertainty and can plan ways to avoid suffering the negative consequences of that uncertainty. A key element is that learners are aware of the risk and feel that there is a reasonable possibility that they can avoid it. (As opposed to a game where the risk is entirely left to chance; the player is aware of the uncertainty but has no way to constructively avoid it; this kind of risk is ultimately off-putting rather than rewarding.)

Meaningful Choices

Once a sense of risk is identified, a learner in a good game is going to try to avoid the negative consequences, by making choices. The nature of those choices often is at the root of the success or failure of a game. The choices must be clear and accessible; when obscurity clouds a choice too much the learner may decide to shortcut the process by guessing. (This happens often with poorly or densely constructed text multiple choice questions; the wording is so obscure or irrelevant—and consequences so slight—that the uncertainty of guessing seems the best strategy.)

Compelling Frame

The frame is the set of rules or constructs that define how the game works. Everything in a game must coordinate to create a meaningful frame; it does not necessarily require that game elements coordinate with elements of the outside world. The completeness of the frame creates the possibility of focused attention that is content to operate within this set of rules. It isn’t that the player must believe in the reality of the game, but rather that the player accepts the prescribed rules and conditions for play as sufficient and compelling.

CASE STUDIES

Negotiability, Union Bank

This example of bank teller training was not designed as a game, but those who go through it often characterize it as such. Learners are presented a series of checks; for each they must decide if it is negotiable or not. In the first “round” (practice) learners then choose which of six required elements are missing for non-negotiable items. There is no additional consequence. In the second round (test) the learner has the same task, but no longer has to identify the reason for the choice. Instead, the learner cannot make a single mistake or the round must be repeated.



Risk: The only risk is that the learner must keep repeating the test until 100% is achieved. The uncertainty is that each version of the test contains a different set of checks (so rote memorization is not an option). But the uncertainty is defined completely by the range of possible errors laid out in the practice round.

Meaningful Choices: The “game” choices are exactly the same choices the learner would make on the job. The game makes them concrete in a way that might be overlooked in the real world.

Compelling Frame: The simple graphics recreate a “virtual” bank space in which the game takes place. The environment is limited to a set of simple tools sufficient for making all necessary decisions. The fast-paced sequence lends a sense of uninterrupted focus.

Employee Security, Corning

This is another example that is not actually a game at all but is perceived as one by most learners. Learners are presented an office environment populated with employees, many of whom are expressing statements of varying levels of threat to workplace security. The learner must deal with the threats in decreasing level of seriousness.



Risk: This is a case where the “perceived risk” is actually greater than any real risk built into the interaction. Because the content speaks of actual danger in the workplace, it seems appropriate that the corresponding risk in the lesson be somewhat tempered. The learning content itself inserts risk into the environment and so no more contrived risk is necessary.

Meaningful Choices: Because the stress statements are so compellingly written, what would otherwise perhaps be meaningless academic policy content takes on an urgency of significance and relevance to the learner that is hard to capture in a content-bound approach.

Compelling Frame: In this case, the graphic treatment conveys significance to the context and to the learner’s actions. The birds-eye view of the work place and the specific windows into the thoughts of the individuals peopling that world create an alternative world that is more concentrated and urgent in nature than reality. Even though the lesson doesn’t explicitly require it, most learners dedicatedly work through all five potential risk situations.

Continued...

ABOUT THE AUTHOR

ETHAN EDWARDS | CHIEF INSTRUCTIONAL STRATEGIST



Ethan Edwards draws on more than 25 years of industry experience as an e-learning instructional designer and developer. He is responsible for the delivery of the internal and external training and communications that reflect Allen Interactions’ unique perspective on designing and developing meaningful and memorable e-learning programs. Edwards is the primary instructor for ASTD’s e-Learning Instructional Design Certificate Program. In addition, he is an internationally recognized speaker on e-learning instructional design.

Stock Room, Journeys

This example of sales associate training was designed to capture the engagement of young adults needing to learn a specific order for arranging shoes in a stockroom. Shoe boxes labeled with stock number arrive on a conveyor belt. The learner must shelve each box correctly before it falls off the end of the belt.



Risk: The risk is created by the timing pressure of the moving conveyor belt. As the exercise proceeds, risk is elevated by decreased spacing between boxes on the belt and by the stock shelves gradually filling, requiring more rearrangement of shoes before each box can be placed correctly.

Meaningful Choices: Again, the “game” choices are highly similar to actual on-the-job choices. The learner can attempt to put any box anywhere in the shelving system. If it’s a wrong placement, the learner has to keep trying (that is, the game doesn’t allow the learner to create a shelf order that is random, because after that point, the choices would cease to be meaningful).

Compelling Frame: The virtual stockroom is simplified but maintains all the features necessary to serve as a complete context: a shelf system of manageable size, required information readily available, and direct manipulation of game elements. The pace and constancy of the moving conveyor belt creates a setting in which distractions are completely blocked out.

GAMING WORLDS

Many attempts at educational games, especially in corporate training environments, fail because they strive too hard to contrive a new gaming context. Instead, games are often more successful when the actual performance context is made more compelling by controlling risk, building meaningful choices, and engaging the learner fully. The end result shares many characteristics with simulations. Clark Aldrich provides a useful hierarchy of simulation models that can create the foundation for game-like interactions, including branching stories, interactive spreadsheets and diagrams, virtual products, laboratories, and spaces for practice and simulated performance. In all cases, the “game” starts with what is real in the desired performance environment and then is enhanced with game-like elements, rather than starting with the pre-conceived notion of a game and then trying to arbitrarily force content into a meaningless structure.

RELATED READINGS

Aldrich, Clark, Because you Can’t Learn to Ride a Bicycle from a Book, *Training + Development*, 63 (12), 24-26.

Salen, Katie and Eric Zimmerman. *Rules of Play*. Cambridge: The MIT Press, 2004.

Mindset of a Terrorist, POST

This example inserts the learner, police and public safety officers, into an unexpected role, a would-be terrorist, and then presents challenges to solve. The base content was very content-heavy, with much factual information to impart. These situations are often the hardest to make interesting in e-learning applications, simply because there are few choices. This approach made the learner temporarily assume the role of a terrorist, creating an opportunity for real choice. Learners read about a terrorist organization and then have to choose a target, a weapon, and a plan for gathering essential tools and supplies to carry-out a successful plot.



Risk: The only risk is that the learner fails to devise a plan and a solution for this terrorist organization. To keep the learner on track, incorrect choices are identified immediately and must be repaired. As a result, the short-term risk is high; the long-term risk is relatively low.

Meaningful Choices: The choices provide a full set of options for creating the terrorist event. The interaction brings to the forefront some choices and rationale for those choices that a learner would likely overlook or not even recognize.

Compelling Frame: The novelty of the situation, the goal driven outcomes, and the story elements in which the learner participates all contrive to draw the learner’s attention exclusively to the activity challenges.