

Game-Based Learning and Instruction Innovations: An Interview with UX Experience/Project Management Librarian Gary Maixner

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In your own words, how would you explain Game-Based Learning?

Game-Based Learning (GBL) is creating games to serve an educational purpose; the purpose is reflected in the mechanics of the game design. As an example, consider the Kerbal space program, this is a video game where you play as a race of aliens. The object of the game is to create and manage your own space program. In order to succeed you have to understand the force of gravity on your pilots as you design rocket ships in order to go into space. The learning objective is not separate from the game play. Thus, GBL is *meaningfully* incorporating game elements to serve as the learning objective itself. You have to learn the lesson in order to play the game properly. The medium is the message. This is different from using game-like characteristics and applying it to content.

For the sake of clarity, can you explain what makes GBL different from gamification?

Gamification attempts to modify an activity, usually with the intent of increasing engagement. Game-based learning uses play itself as the method of delivery. A perfect example is the Barnes and Noble Coffee App. Every time I scan, I get points for doing an activity and after spending a certain amount of money I get a reward. It uses the point and reward system to encourage patrons to purchase more coffee. Likewise, I have seen many instructors who create boards and use a point based system to award students. This is using the wrapper of the game to present information to students, making it comparable to what I would call presenting chocolate covered broccoli; you are hiding the educational intent of the activity.

How did you get interested in GBL?

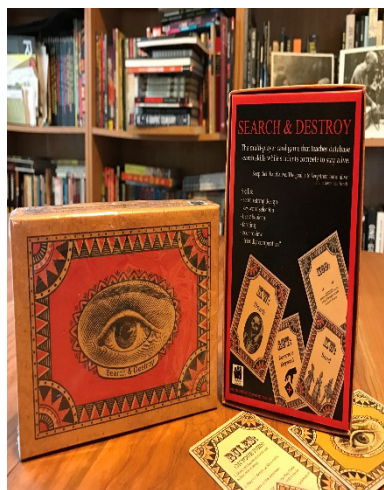
As a kid growing up in Goodwell, Oklahoma, I have always had an interest in games. I couldn't afford SimCity when it first came out so I would keep an analog journal of made up characters and their activities. Since roughly 2008 or 2009, I became interested in "table top" games. However, it wasn't until 2014 or 2015, early in my librarian career, that I tried applying my interests in games to library instruction. I had been shadowing another librarian who was teaching a class on citations. Upon leaving that class, I thought it wasn't a great experience. In addition to being disengaged, I noticed that students weren't given opportunities to practice writing citations nor were they asked to think critically about the parts of a citation. I took the initial lesson plan for that session and revamped it into a fill in the blank style activity that relied more on gamified elements to engage students. The objective was for them to try filling in the funniest but still correct citation, the individuals with the best citations got a small prize, like a branded frisbee or sunglasses.

What did you learn as a result of this activity?

This experience got me thinking more deeply about how to approach student engagement in terms of holistic learning. Games are a really powerful tool and we should be making and using games more *appropriately* in our classes. Appropriately is the keyword when it comes to utilization, as it is easy to make the mistake of assessing a student based on how well they played the game. This type of assessment introduces the fear of failure in students, which is in direct opposition to the point of games. Games are meant to create safe spaces for students to experiment and feel free to fail and fail again. I think that game-based learning reinforces overall learning.

Can you share a bit about the types of games that you have designed?

I think that essentially there are two types of game-based learning philosophies when it comes to design. They can be either demonstrative, meaning that the aim of the game is to enable students to be able to complete a practical task. Or, games can be illustrative, meaning that the purpose of the game is to simulate in a deliberately not one-to-one fashion an experience that a student may encounter. In these types of games your goal is to increase critical thinking.



In 2015-2016, my then colleague Mari Kermit-Canfield and I began production on a game called "Search&Destroy." This is a demonstrative game in that the object is for students to learn about keyword searching in the library database. Students are given two decks of cards, one deck contains keywords and the other deck contains action cards. To play the game students are grouped together and asked to draw two cards from the deck of keywords and then to discard one. Action cards function as modifiers or skips; this gets students thinking about how to modify their searches to get to their information needs, and how the more facets they add, the more limited their searches become. The whole game is the lesson; someone could pick up the game and walk away with new knowledge that has a practical usage. Each turn students add another keyword to

their search string. Eventually they hit "O" result and achieve what is called a fail state. This signals the end of the game.



Following on the tails of Search&Destroy, from 2016-2018 we created another game called "Trust Issues." An illustrative game that gets students to evaluate claims using contextual clues and evidence, it shows students how you can build a constellation of evidence that influences whether or not something is deemed credible or not. It becomes a substitute for the CRAAP test

(Currency, Relevance, Authority, Accuracy, and Purpose). An individual can come to the

game without prior knowledge and still leave with a developed understanding of the holistic concept. Evidence cards can be played upon the user themselves or upon others as the evidence; cards contain both positive and negative evidence examples. Once a certain amount of points for that claim has been achieved then you win. This game design is interesting as it affects all of the players, and forces everyone to engage.

Currently, I am working on a game that stemmed from the dissertation of my friend, Andrew Peterson. The game is called “enRolled.” My job was primarily the illustrator, but aesthetic is a core element of game design. This game simulates a variety of experiences that affect a student’s life in college from freshman to senior year. It requires students to prioritize their time, the value of early registration, and the other factors that can influence your experiences in college. This game can be played either at the freshman level or in high schools. The general goal of enRolled is to help incoming students think about what their experience might be like throughout their college career.

Have you tested any of these games with students? What has been the response?

One of the main strengths of game-based learning or gamification is that it can appeal to different desires in a student than a lecture does. In a traditional lecture style-learning environment, there is not a lot of ways that you can appeal to a student’s interest. For example, at Ferris, I attended Reading 176, a course targeted at underprepared students. The students were really disengaged with the faculty lecture. I came in and said let’s play a game. Initially students were reluctant to participate but within the first five to ten minutes, students became more engaged and more active. They seemed to legitimately enjoy the experience. With games, you can appeal to students’ sense of competitiveness, or collaboration.

During another class session in which Search&Destroy was being played, a student played the “OR” card on his friend, thinking that it would severely limit his results that he got. He did not understand the function of “OR” as an expander in search queries. As a result, the students lost the turn to his friend. However, he will now remember what the function of “OR” is for the rest of his life.

Most recently, I have field tested “Trust Issues” with students at IUPUI. The initial post-survey results indicated that students felt that playing the game was a worthwhile activity.

What advice would you give to any librarians who may be interested in GBL, but are not sure where to start?

The number one thing that you need to remember about designing a game is that you are not designing a game. You are designing an experience. The game is how you convey that experience. For example, Jesse Schell’s *The Art of Game Design*, essentially the bible for game designers, got hired to design an attraction for Disney. He had the theme of “pirates,” but they realized that they did not have a particular experience in mind. They eventually settled on the experience of what it was like to be a pirate. They used the form to determine the actions within the realm of the game. Everything should feed to the experience. In the world of educators, experience can be substituted with learning objectives. All of these objectives

play into the game design. The first step of game design is identifying what is the core; after that it becomes easier. To start introducing game-based learning into your instruction strategies start with the learning objectives taken from a singular lesson plan.