

I grew up playing games of every kind. From sports to video games to everything in between, I could spend 16 hours straight within the bounds of “the magic circle.” As time went on and my passion for education grew, my interest in the productive application of games grew stronger.

Formal education and games are often found on opposite sides in today's society. The standoff takes center stage in the classroom, where teachers balance age-old teaching practices and a desire for tenure and control with new ideas that may add value to the curriculum... or may send the class into irretrievable chaos.

As a pre-service teacher and a student, I've experienced the difficulty firsthand in quieting a large classroom or keeping small groups on task. But I've also seen the incredible, largely untapped potential that draws from student interaction with games.

Truthfully, I want to change the world of education - to create tools to help teachers and parents create environments where students learn best, and to enable students to take control of the direction of their education every day of their lives. I'll admit that it's a big goal, and one that was beyond the scope of this project, but this is a real step towards the ideal of meeting every student's needs, every day, in every classroom.

At first I took the direction of simply asserting, through qualitative research, that education and games are not exclusive. I felt that responses from a variety of sources would help fuel the success of the combined industry. But as I spoke with teachers, gamers, parents, and administrators, I realized I was looking in the wrong place. Each teacher and administrator I met was willing to believe in the potential of games, but only if he or she could see a story of success.

While all this was happening, something was growing out of my research into Play and other theories – a game called Quan'da'ry.

The result of my project is that success story – a model for teachers and game industry experts alike who wish to create meaningful educational interaction. It began with my experience in studying *Play* theory, walked through the preliminary conclusions from my research on the need for better game/

educational models, and ended with the creation of Quan'da'ry and its modifications for classroom use. Its creation also revealed a step-by-step process by which any teacher or expert can create meaningful games for use in education.

Ironically, the creation of Quan'da'ry taught me the same message that I had learned doing formal interviews: good games that encourage learning are both fun and educational at the same time. What the real meaning of that statement was this: good games that encourage learning combine the operational principles of game design with the operational principles of education. Games need compelling gameplay. Educational environments need compelling environments based on sound principles of learning. Educational games simply need both.

In a nutshell, the six steps of creating and modifying games for use in education:

- 1) Determine your problem or objectives
 - a) The first step in effectively using games in education is determining where you want to use them. Identify the objectives you want to reach with this group of people. Would you like students to better understand a certain physics concept? Would you like students to have experience responding in difficult philosophical situations?
- 2) Identify people-specific operational principles of learning
 - a) Each group of people in the world is unique. Because of this, there are no absolutes in education – only things that work or do not work. What are the inherent desires and passions of the group of people with which you are working? Do they love to work with their hands? Have choices? Sit and listen quietly while someone tells an engaging story?
- 3) Determine types of user input and interaction
 - a) This is the application of step one. Given your own personal instructional objective, what types of games will be the best? Do you need a game that simply tests memorization skills? Or a game that calls upon players to create their own scenarios?
- 4) Create a game that uses desired input level and focuses on operational principles

- a) Once you have determined the type of game that will work best for accomplishing your instructional objective, the next step is finding a game that uses the applicable operational principles and also is of the type desired. There are many games that can already be used in this purpose, or you can create your own game (from scratch or by replacing content in an existing game).
 - b) Choose a game that uses desired input and operational principles
 - c) Strip game content and input desired content
- 5) Play-test – be willing to experiment to achieve operational principles of game design
- a) Even with a great idea and a great game, often there will be problems. Test the game in many different situations to determine what needs to be fixed. Then fix the problems and play-test again.
- 6) When you find a game that works, use it in everything

The ability to use games in education is worth the time it takes to find them or create them, because of their portability into other environments, and the true learning that takes place.