

Just Press Play: Design Implications for Gamifying the Undergraduate Experience

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Abstract: Whether demonized or lauded, gamification is a new direction that corporations and institutions are using to engage their target base. The Just Press Play (JPP) Project, developed by the Rochester Institute of Technology with funding from Microsoft Research is one of the first serious attempts at gamifying the undergraduate experience. If successful, the tools and methods used in this project will be made available to other organizations for their own implementations. This talk will address the design aspects of the project, the implications of gamifying the college experience, how the design of JPP can model a new direction for student engagement, and what the implications of this project are in the larger discussion of mapping game-like layers in “serious” contexts.

Gamification is a highly debated issue in games-based research. Those who profess the virtues of gamification speak of the benefits when people play or learn towards a common interest (McGonigal, 2011). In contrast, critics believe that gamification is being used as a marketing ploy for the benefit of the corporate sponsor rather than the participant, going as far as to try to rename gamification to exploitationware (Bogost, 2011; Juul, 2011). Regardless of your side in this debate, however, gamification in its current form does not seem to be declining in popularity. On the contrary, the idea of layering game-like elements onto real-world spaces and practices is flourishing. From Nike+ helping motivate runners to Foursquare declaring mayors of McDonalds, gamified spaces are indeed changing the way we are looking at games and our interaction with the world around us. Yet few of these experiences have been designed for the environment where numbers, achievement, and assessment matter the most—that of education.

The Just Press Play (JPP) project is an attempt to shape the way undergraduate students approach their academic careers. JPP is a game layer added onto the academic space, developing challenges for participants to achieve and help establish another outlet where academic staff and students can communicate besides just the classroom. The “players” of JPP are presented with a series of challenges that range from going to the instructor’s office hours to dining off-campus with a large group of classmates. Once a challenge has been completed, the player receives an achievement, which they then claim and display to other students. The website where the players go to submit their achievements is accessible only to the players of JPP, fostering a close community. As of the time of writing this paper, the JPP project has over 500 participants.

Many educational games are set up for failure because they want to cram as much academic content into the product as possible. What makes JPP unique is that while they are gamifying the academic experience for the students in the Interactive Games & Media (IGM) program, they want to stay away from academic-specific content and focus more on the community itself. Their achievements are guided by three questions: What behaviors did we want to reward and encourage? What feelings of competence could we engender? What did we want our students to remember and reflect on?

This paper will discuss those design strategies behind JPP and the iterative process of its creation. Through interviews with both students and faculty both behind the scenes and with users of JPP, assessment researchers from the University of Wisconsin-Madison discovered a densely layered process of iteration and best practices, as well as some of the drawbacks and design flaws to act as a learning lesson for those wishing to add gameful layers to their own environments. We hope to make JPP a part of the larger discussion on gamification but especially in an academic setting so as to highlight some of the advances of the JPP model and drawbacks to porting what happens at RIT to other environments.

Games have been consistently shown to be well-designed learning environments (Gee, 2005; Squire, 2006). Evidence already supports the usefulness of games as a supplement to the curriculum (Squire, 2004; Egenfeldt-Nielsen, 2004, 2006, 2007), a standalone educational experience (Barab Hay, Barnett & Squire, 2001; Barab, Thomas, Dodge, Carteaux & Tuzin, 2005), and a way in which a community can deliberate scientific concepts (Steinkuehler & Duncan, 2008). But these successes are predicated on the games being well designed for their purpose. Good design of educational games is particularly critical, because their failure risks setting back the general pursuit of using games in schools. If the game or educational tool is too complex for even the teachers, the students will suffer (Tuzun, 2007; Halverson, Shaffer, Squire & Steinkuehler, 2006).

What JPP wants to eventually accomplish is therefore incredibly ambitious. As their website states:

It is our hope that future funding will allow us to bring the Just Press Play experience to a larger audience, both at RIT and at other institutions. Towards that end, our underlying infrastructure will eventually be made available as an open source project (Just Press Play, 2011).

The scope of JPP requires a design specific enough to focus on the needs of students in an educational program, but general enough to be able to be customized for other environments moving forward. The question then becomes what will stay or go in the final design that does become publicly available. One of the first systems designed was JPP's achievement system.

The achievement system in JPP assigns achievements to the user when he or she completes a task. Like many games, the beginning of JPP offers a low buy-in for the player. Simply visiting a faculty or staff member will earn you a tutorial-level achievement. It is at this point that the user could become more invested, as the goal of the developers of JPP is to make the student more engaged with their own education (Lawley & Phelps, 2011). But is there a need to gamify the student's collegiate experience? Do we cheapen the process of taking charge and remaining proactive in your career by narrowing down achievement to earning achievements? Deci (1971) found that extrinsic rewards through gold stars and other physical forms of accomplishment actually decreased intrinsic motivation, later confirmed through a meta-analysis (Deci, Koester & Ryan, 1999).

The answer that the developers of JPP came up with and could be the reason why the game still remains a topic of interest with the students is that there is no achievement tied to the curriculum. As a senior developer on the project put it, "if they [students] felt coerced into doing it [JPP], we lose, it's broken" (N1, 2012). The students who remain in the game do so because of the intrinsic motivation of wanting to fulfill achievements, and not for any extrinsic motivation tied directly to the IGM curriculum.

The developers wanted to design a game that would not make the students better scholastically, necessarily, but better all-around students. There are achievements that include simply getting to know the professors in your department. One such achievement, "For the Lawls" was to tell a joke to a senior professor and if she laughed you would receive that achievement. Another achievement dealt with rifling through a visiting professor's office to find his card while he was present. There were many achievements that allowed you to get to know your faculty, but there was also in the design ways in which you would socially interact with people in your department where before you may have not had, or made, the opportunity.

Undying achievements or large-scale events intended to allow social interaction amongst the larger IGM community have proven to both be well-placed achievements for interactivity and social engagement. From our interviews, participants would frequently cite the flash mobs and the Study Club achievements as being their favorite activities.

The flash mobs are initially devised by one faculty member who also is in charge of the achievement artwork and then collaborated upon by the other faculty behind JPP. One of the flashmobs was a rendition of the famous dance from the Michael Jackson song Thriller. Another had to do with a human Rube Goldberg machine, taking place in the atrium of the building which houses IGM. While both activities took place on school grounds and were run by faculty and staff, these achievements were not tied to curriculum in any way.

The Study Club achievement is the closest JPP ever gets to being tied to a curriculum. At RIT there is a computer programming course for which the pass rate stays at a consistent percentage throughout the iterations. Seniors got together to help the freshman study for the final exam and while we cannot

prove causation, the semester the achievement was implemented, the pass rate went up by several points (N1, 2012). What was supposed to be a one-time achievement became a recurring one not because of academic success, but because the students felt they were making a positive influence on their peers with the study groups. While these are great examples of how to add gameful layers to the college experience without covering the broccoli in chocolate, there have also been lessons learned from this experience for others looking to do something like JPP in their own institutions.

As stated previously, the achievements of JPP were not motivated to help students do better in classes or reward them for those efforts, but rather to generate a sense of community and highlight the many resources at the students' disposal at RIT. A two-year process from conception to launch took place involving the advice from experts in the games-based learning field and through funding from Microsoft Research. Because maintaining JPP would require funding for staff and resources, little progress on the infrastructure end was made until funding was guaranteed. When the funding came through, staff and students had a little over 3 months till their proposed September launch date, the start of the RIT school year. A decision was made to push back the launch till Homecoming, but even with an extension of time, developing as complex a tracking system as JPP was envisioned to be is still a near impossible task.

With a system as broad as JPP where students are to have an online database where they can log their achievements and compare with others in the game, it involves a lot more than just game design to make the whole system work. The work of JPP was therefore split into two groups: game design (achievements & fun factor) and the technology end (infrastructure, system stability, aesthetics, and information dispersal).

The game design of JPP took on various evolutionary stages from what it currently is today. At first, the achievement system was loosely based on Bartle's player model test (Bartle, 1996), but was challenged by a senior advisor and subsequently removed because of the incompatibility between overlapping an achievement system onto a system of player types. Instead of shoehorning achievements into player types, and design and development, the developers wanted to focus on breadth and depth of achievements to attract the largest possible audience, encompassing all types of players without relying on Bartle's player types.

RIT has the luxury of having a historically rich backstory to its inception, one which developers wanted to incorporate into the storyline behind JPP. What is now known as RIT used to be the Rochester Athenaeum, a liberal arts school, with the other school being the Mechanics Institute. Again alluding to how the developers wanted to shy away from curriculum specific content, many achievements have to do with the initially dichotomous relationship between the two schools. The historical element of JPP encompasses only a fraction of the total achievements, and with any good system there is a potential of leveling. The project itself may have become so popular however, that the infrastructure and achievements made were not enough to withstand the demands of the participants.

The initial launch of JPP was to involve a comprehensive website with RFID tags so that students would be able to register achievements at kiosks. The physical placement of RFID scanners was too much for the infrastructure to accommodate, and therefore, the RFID tags are still underused. The information resources of JPP, which include Facebook groups, online newsletters, and subreddit threads, were also underutilized, as the interviewees rarely used these resources. In addition, despite the research that speaks negatively of extrinsic rewards, the interviewees actually felt this would help participation in the program either because of workload or perceived exclusion:

“There could be better ways to incentivize it (JPP), because right now it's kind of an intrinsic incentive...the incentive is the achievements themselves...I know that at least for people like me...it works as a system...there are a lot of people I know that would need some sort of a push or something tangible to actually want to participate.” (N2, 2012)

From our preliminary statistical analysis, participation has dropped dramatically since the launch, but from the interviews it is not from lack of interest in the game, but rather a lack of content. The concept of JPP, like other massively multiplayer online games, was to have participants level up based on their achievements in the game. Unfortunately, many of the players became so engaged that those who played all of the content for leveling up did so in just a few weeks. Content has not been added in

the additional levels, and therefore those players have been put in a waiting pattern. No participants in interviews who played signaled they would stop playing once a new update of JPP is released.

Although there are difficulties with JPP in regards to additional content and the potential to exclude some audiences, what the game has managed to accomplish is attracting a devoted audience who, while acknowledging the faults of the project, also look forward to the revisions. There could be several reasons for this, such as the uniqueness of the program geared towards game design or the devotion given to certain faculty who are in on the project, but what has been accomplished should not be lessened because of flaws in the infrastructure. Those who are playing at the moment are enjoying the game, and while JPP's system should not be made available open source just yet, they avoid many of the pitfalls of other gamified environments which rule out their usage completely.

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