UCLA
Librarian Publications

Title

Level Up for Learning: Integrating Video Game Concepts into Information Literacy and Student Engagement Activities

Permalink

https://escholarship.org/uc/item/5fp784z1

Authors

Cowing, Jared W.
Lee, Simon
Pun, Raymond

Publication Date

2019-11-25

Level Up for Learning: Integrating Video Game Concepts into Information Literacy and Student Engagement Activities

Jared Cowing
Woodbury University, Burbank, USA.

Simon Lee
UCLA, Los Angeles, USA.

Raymond Pun
California State University, Fresno, USA

Abstract

Academic instruction librarians are always trying new ways to innovate their teaching methods for information literacy and student engagement. From gamification programs in online tutorials to active learning techniques, librarians can integrate these core pieces into their practices. But what about borrowing and implementing concepts from video games? What lessons or experiences can be shared in this process? Today, students are into more mobile apps and online learning than before. What kind of digital tools are available to enhance student learning? This paper introduces how academic instruction librarians can harness the value of video game-based instruction and engagement to introduce new pedagogical approaches from the flipped classroom method to learning collaborations. In some case studies, academic libraries have created library exploration games to support these learning initiatives and others have started and managed a collection of video games for students to study and learn to design from.

In addition, other academic libraries have hosted "gaming event and showcases" to promote the collection and to enhance student learning and library outreach services to the gaming community on campus. In other learning contexts, physical gaming elements have become part of the teaching process for those developing information literacy skills. These hybrid-based activities may include escape rooms, (zombie) scavenger hunts, badging programs, Pokemon-Go, and more. The paper will cover a series of examples of how librarians can integrate elements of gaming into their community of

practice for information literacy and student engagement. In addition, video gaming culture has become a useful marketing and outreach tool for libraries to consider. This paper will offer suggestions and highlight best practices to cultivate a gaming community for outreach and learning engagement in academic libraries.

Keywords: video games, information literacy, collaboration, student engagement, academic libraries.

Introduction

Today, academic librarians have designed and implemented creative ways to engage with their student communities and to enhance their teaching and learning practices. Through gamification, using game-based features in a non-gaming activity or game-based learning approaches, which describes the use of games for learning, there are many opportunities to enhance current services and practices offered in the library. Why gamify or utilize game-based learning methods? Simply put, students today may become more motivated, engaged and interested in learning and developing research and information literacy skills. There are plenty of research to suggest that these opportunities can increase performance and engagement, and there are numerous case studies of libraries creating and participating in such developments.

In this paper, three academic librarians will share how they crafted and cultivated a gaming culture in their own institutions and address the question: how can academic libraries align their resources, strengths and strategic priorities to enable a gaming culture where communities can flourish in the areas of student learning and engagement on campus? These case studies present examples of how to answer this question by "flipping" traditional practices in library services to design and encourage new innovations and programs that utilizes games, gaming elements and features.

The case studies include efforts made at UCLA, Fresno State, and Woodbury University, and explore the development and planning stages of these activities from collection development to library orientation to gaming nights through collaborative efforts. Threading the various projects undertaken at all three libraries are several common themes that can be used as a starting point for other libraries interested in launching their own gaming initiatives; these themes include event planning, incentive systems, and choosing the right game concepts to support the project's learning objectives.

Fresno State's Library on Gamifying Orientations and Student Learning

Fresno State's library have always been interested in gamifying services to enhance student learning and engagement in the areas of library research and information. In one area, the library has a Diversity Lounge with selected puzzles and board games on the tables for students to play and take a break from their studies. In other critical times of the semester

such as midterm week or finals week, the library has organized gaming nights in collaboration with student groups or with campus partners such as DISCOVERe, an app technology services, that is housed within the library. These gaming nights often draw many students to play different video and computer games, and take the opportunity to "destress" from their academic studies.

In this context, the librarians have reached out to many different collaborators such as Health and Wellness Promotion and the Student Government to promote such efforts on gaming nights, and the importance of these participations. Along with conventional de-stressing events such as therapy dogs, gaming nights have expanded to new engagements and circles to create and support other communities of learners. The organizers' experiences have actively recruited students from game design and computer programming classes to share and showcase their interactive projects on games during such events. These kinds of events create opportunities for new exchanges of students who are game creators and those who are game players. In general, these events can easily be organized with campus partners and student groups to utilize and transform the library spaces for gaming and engagement activities. These events do not necessarily have to feature gaming consoles exclusively but rather traditional board games like jigsaw puzzles, chess, checkers, pictionary or jenga. It's important to have support from the library administration to promote such event because there may be some concerns that these activities may be perceived as "unscholarly" in the academic library culture. Far from it, these activities can actually boost more participation, engagement and excitement in the library.

At Fresno State, a few innovations have been cultivated implemented to gamifying other services including an online library orientation game (Fusich et al., 2011). This online orientation game was designed to ensure that "students feel comfortable in the library, learn about library services and departments in a fun way, and understand the importance of the library in the research process. The game was located in Fresno State's course management system, Blackboard, and students could take part in it at their convenience" (Fusich et al., 2011). The orientation game was successful to introduce a growing number of new students to library spaces and services and to engage with them in the digital context.

From international students to upward bound program students, the game had an impact on many different groups, and the organizers gained many positive feedback from their assessments through weekly discussion boards and surveys (Fusich et al., 2011). In addition, this special online program was an opportunity to design and experiment with new digital engagements of library services that have traditionally be confined to in-person experiences. Library tours have now been created to become sustainable and scalable to remote users on their own pace and time. Throughout this orientation game, students are prompted to go to different parts of the library and answer specific questions about a service or resource in a weekly basis. There were also prizes that incentivize their participation, and the students' engagement created an opportunity that allowed the organizers to identify the effectiveness of such program too. This is quite similar to a scavenger hunt and the program was designed before the use of mobile apps as well.

In addition, other gamified learning activities that have been integrated into library workshops include in-person participation. In 2017, a series of "escape room workshops" were designed to engage with students' learning in "fake news" and social media. This type of event was modeled after a scavenger hunt where participants would work in teams and visit different locations of the library to respond to a hidden message or clue relating to a service or a resource. In this information literacy workshop for first year students, the instruction librarian organizes the workshop in a "escape room" format which is a physical adventure game where players will need to solve a series of clues to "win" the game. These clues can be tied to learning objects and goals from finding a scholarly article to citing a scholarly article. Borrowing from video game concepts where the game has an objective (beat the game in one hour), a series of rules (no using 'Google,'), and pace in managing difficulty settings (players choose different clues from easiest to hardest).

Specifically, the theme of the workshop focused on President Donald J. Trump, his election and administration. Six workshops were organized for first year students who were required to take these workshops: they worked in teams to solve a series of research clues utilizing the library's online resources, print books, physical objects and signages in the room. In one clue, students were "fact-checking" President Trump's Twitter page by using newspaper databases to double check and confirm his responses as being truthful and accurate. In another clue, students had to find books and articles about President Trump in the library catalog and databases and cite them accordingly. Students who competed these activities within the hour would be able to "escape" and debrief in another meeting room in the library about their learning experiences. Based on these feedback, students enjoyed working in teams to learn and solve different clues; they also found the topic to be of interest, and realize that President Trump's Twitter and Wikipedia pages can be filled with controversial information that can be "fact-checked." Similar to a video game where students would "level up" to advance stages of conducting research using the different clues in the room, it was an opportunity to engage with students and have them learn more about the process of research by developing information literacy skills on their own in a peer-to-peer learning environment.

Academic libraries that are interested in organizing such workshops may need to prepare in advance in finding out how many students will attend the workshop, how many clues do you want to use in the room, how would you guide students if they were struggling as well. These kinds of details can be brainstormed with other colleagues as well. Gamifying library instruction and orientation can be rewarding and challenging since it requires different levels of planning; games cannot be easily completed or underwhelming. They have to be designed with the right level of challenge for motivation purposes; it is certainly a creative way to support a learning community based on gamification.

Woodbury University Library's Digital Learning Game

Many efforts to gamify library instruction at Woodbury University have centered on the library's credit-bearing class which all undergraduate students are required to take to graduate. While these efforts have included the tried-and-true such as scavenger hunts and

citation relay races, several interactive digital efforts have also been developed for classroom use. The top-down style library exploration game is one such example of a custom-built instruction tool designed to utilize gamification concepts in a way that supports specific learning objectives.

The inception of the library exploration game arose due to a need for a homework activity that would prepare students for a physical library tour the following week, utilizing a flipped classroom approach. Students needed to be prepared to participate in the physical tour with a sense of curiosity and adventure, rather than merely watching as passive observers. The solution had to allow students to engage with the still-unfamiliar library space in a way that encouraged them to explore without specific objectives and without the constraints that might hinder some to explore of the physical library on their own, such as library anxiety, library hours or a simple lack of interest. Virtual, gamified environments are an ideal tool for such a need because they allow players immediate feedback mechanisms to safely experience trial and error, and can replicate real-world systems for the practicing of higher order thinking rather than pure memorization (Kapp, 2012, p.76-88; Beck & Wade, 2004).

A virtual library solution could also increase student engagement by providing three conditions key to fostering intrinsic motivation: competence, autonomy, and relatedness. Competence refers to the feeling that a player is challenged but not overwhelmed; a self-paced virtual environment would allow students to find the right balance for them. Autonomy refers to a person feeling as though they have the agency to make their own choices, which a virtual library "sandbox"-style space could provide better than a more rigid paper-based activity. Relatedness refers to someone's ability to relate to or connect with their setting; this exploration activity would offer students relatedness by putting their library into its own game, and by using a game genre with visuals and mechanics that would be familiar to many students (Deci & Ryan, 2000).

The final solution consisted of an online two-dimensional floor map of the library which the student navigated as an avatar with their arrow keys, much in the same style as several well-known Game Boy titles. The student started with a checklist of library locations that must be found to finish. The names of all the areas on the checklist were blacked out so that the student didn't know what the areas were called; all they knew were how many areas must be found. The student navigated around the library in whatever directions they saw fit, and each time they entered a new area, the floor flashed various colors with the name of their newly found location revealing itself on the checklist.

The checklist functionality, web accessibility features to accompany visual elements, and several library-related easter eggs were not easily achieved in existing top-down game design software; as a result, this game was custom coded in-house. Coding is a highly impactful tool for any librarian to have at their disposal for problems that have no existing software solution; even introductory knowledge of a scripting language like Javascript can yield surprisingly complex and interactive activities. Librarians of all stripes can learn a great deal from experimenting with code, and the library community has an incredible amount of

knowledge that can be unleashed through spreading the practice of coding within the profession. For those librarians who would like to pursue a project such as this with minimal set-up time and without the need to learn code, a visual game editor is currently being developed and tested at Woodbury. This editor allows librarians to create their own library exploration game to share with patrons, utilizing the same engine built for Woodbury's game.

It is important, when planning a gamified library instruction project such as this, to consider learning objectives and motivational mechanisms that spur users to participate. Gamification efforts should not feel like a gimmick just to be "cutting edge"; they are best used as targeted tools for specific learning needs and personality types. One method for determining what type of gamification is right for a project is to deconstruct the different elements of a game that engender motivation to play. These elements include clear goals, rules, time limitations, immediate rewards and feedback, abstraction of real-world concepts, levels, storytelling, aesthetics, and engagement with others through conflict, competition and cooperation (Kapp, 2012, p.25-49). Each element, alone or in combination, represents a unique tool that can support a different learning objective. In the case of this library game, use was made of goals, rules, immediate feedback, abstraction of a real library, and aesthetics.

One additional method for calibrating gamification efforts is to consider different player personalities. Richard Bartle (1996) described four main player types: explorers, achievers, socializers, and killers. Each player type is spurred to play by different game elements. This particular activity offered the most to explorer-type players through the elements of abstraction and aesthetics, and to achievers through goals and immediate feedback. Following this type of analysis shows that further developments to the project would best be focused on engage socializers and killers, through the use respective of social interaction elements and opportunities for classmate competition. Utilizing this model of planning by infusing game-inspired mechanics strategically to target specific player types can help to ensure that the time and effort required to plan gamified projects lead to results that are well suited for your library.

UCLA Library's Video Games Collection

The year is 2012 and the UCLA Library enters a period of change to position itself among other future-present libraries in the 21st century. A key player in this change is Kelly Miller, Director of Teaching and Learning Services (TLS) and Head of the Powell Library. Miller's leadership profoundly influences the traditional thinking among librarians, giving them the freedom to explore, to take risks, and to develop into forward-thinking library professionals. The student-centered approach was the driver to becoming a future-present library (Miller, 2014), and her undying support made the possibilities seem limitless.

At ALA Annual Conference that year, Scott Nicholson, author of *Everyone Plays in the Library*, delivered an inspirational presentation and encouraged his ALA audience members to write an idea, bring it back to our home institution, and act. A speech on changing perspectives was delivered at the Teaching and Learning Services update and the idea to

integrate *game-based learning* was well-received. The subsequent formation of a Game-Based Learning Group on Facebook created a casual and convenient space to communicate and engage with students.

The community of support helped to organize UCLA Library's first celebration of International Games Day (IGD) in 2012. The event included a small exhibit of 19th century tabletop games from Library Special Collections, student-designed games from the UCLA Game Lab, classic and popular titles (e.g., Chess and Scrabble), and a few video games brought over by Enigma the Sci-Fi and Fantasy student group members. It was quickly evident that more video games were desired through feedback from the community members so ideas for data collection was integrated the following year.

In 2013, a brewing interest in video game music among Enigma members led to the formation of the Game Music Ensemble at UCLA (formerly, Video Game Orchestra and Choir). Spearheaded by student officers and currently by Jose Daniel Ruiz, membership included students with a passion for games and or simply music in general. With internal and external Facebook groups for their musicians and growing fanbase, library connection with the musicians and led to a live chamber concert performance at the second annual International Games Day and attracted more attendees. That year, the Daily Bruin wrote a piece that encapsulated the event and the onset of a budding collection (Singh, 2013).

After analyzing the data for a potential video game collection, librarians from the Arts and Powell libraries used the information to write a proposal in 2014. A $10,000 budget was granted to launch a collection of current video games, consoles, and related accessories for the Nintendo Wii U, Playstation 3, Xbox 360, Playstation 4, and Xbox One. While the video games are housed at the Powell Library, funding spanned across the Arts, Music, and Powell libraries. Moving forward, numerous questions had to be considered. How would materials be catalogued? What parts would be circulated? Where would the the equipment be stored? While some institutions secured video game equipment in a room, UCLA Library wanted them to be visible and accessible to their community members.

Local expertise at UCLA was sought to bring everything together. Doug Daniels (Programmer Analyst) added a sleek and professional finish to the consoles and controllers. To signify that a particular console and controller was our property of the UCLA Library, the logo was etched. Michael Elliott (Access Services Supervisor) transformed an old laptop security case into a charging station. The video games themselves would sit in an identical security case nearby. Stephen Sherwin (Library Assistant) secured the consoles onto mobile TVs and stands (all plugged and ready to go) to ensure that hosting an event would be as easy as simply identifying an available outlet. With the help of Library Acquisitions and the Cataloging and Metadata Center, the video games are ordered, processed, and delivered. Photocopies of the original covers are resized to fit into empty display cases, and then shelved with the rest of the browsable community collections.

In preparation for the launch of the Video Games Collection during the 2015 International Games Day, librarians from the Arts, Music, and Powell Libraries created a research guide to help users navigate this collection: http://guides.library.ucla.edu/videogames. Since its launch, community engagements such as Geek Week, Game Days/Nights, and quarterly Stressbusters programs have been easy to support. Further engagement with the community would ensue in 2016, when Collaborative Game Development (CGD) led by Matt Fabius reached out. This collaboration led to a Game Development Night that invited programmers and artists to meet, share, and collaborate on game creation.

In 2017, Collaborative Game Development would play a more direct role with the video game collection. Judy Kim, an adept graphic designer within CGD, enhanced the signage for the collection and developed self-service instructions, alleviating the need to train student workers on how to operate the consoles. The instructions were easy to understand, laminated, and adhered to each device. Becoming more familiar with the video games, Judy and Matt experimented with game discussions (similar to book talks). While the game discussions proved challenging within the 10-week quarter system, CGD took a new direction to get in contact with newer instructors that are interested in developing courses that utilize games as resources.

In 2018, UCLA Library placed its very first video game on Course Reserve (i.e., Assassin's Creed II) for an intermediate Italian class that focused on the Renaissance period. Richard Jones (Course Reserves) identified a simple solution to store video games in a designate location within the current storage. One student booked an appointment, enabled the library to observe how he the immersed into the game, changed the language output from English to Italian, and navigated and traversed buildings. In the end, the goal was to share his experience in learning from the interactive resource.

Exploring ideas, taking risks, and thinking forward using student-centered approaches has had significant impact at UCLA. The video games collection has been successful with outreach and engagement efforts and has begun to open new opportunities for teaching and learning. On the one hand, it served as a supplementary resource for language learners as they benefited from having the audiovisual and experiential elements. On the other hand, its physical presence was encouraging and inspirational for aspiring student groups and game developers. Moreover, the collective effort of UCLA Library provides a resource that is not only fun and interactive, but fosters new approaches for teaching and learning in higher education.

Conclusion

In this paper, the academic librarians offered numerous ideas and projects to address how gamification and game-based learning can create, cultivate and engage with new learners and communities on campuses. From a big public research library to a small private university, these approaches can be applied in any library environment. These are the best practices that are summarized in this paper:

- Form partnerships and collaborations: all activities relating to gamification and game-based learning from gaming nights to collections to gamifying information literacy will require input and partnerships various stakeholders on campus. Consider this an opportunity to present the library's extensive services and resources to enhance the gaming culture on campus.

- Experimental designs and trials: these activities may succeed and may not at times. It is important to "take risks" and always identify new emerging trends from the gaming and gamification worlds, and think how to adapt these practices and concepts into your own work. By experimenting on these activities, users may feel more positive about library services and resources. Library management should similarly consider how to allow their employees the latitude to take risks and connect their personal passions to their work. Innovation can never happen in a micromanaged library.

- Start small: these projects that are presented in this paper may seem daunting, however, they were all piloted at once point and began in small increments and stages. Planning early and starting small may make this project more manageable. Start by creating gaming nights or meet with student clubs or groups focused on gaming cultures; you can also start building a small collection of games related to an academic curriculum as well if your library has a budget for that.

References

Bartle, R. (1996). Hearts, clubs, diamonds, spades: Players who suit MUDs. *Journal of MUD Research.*

Beck, J. C. & Wade, M. (2004). *Got game: How the gamer generation is reshaping business forever.* Cambridge, Mass.: Harvard Business School Press.

Deci, E. L. & Ryan, R. M. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1). http://psycnet.apa.org/doi/10.1037/0003-066X.55.1.68

Fusich, M., Dinscore, A., Smith, K., & Vang, V. (2011). HML-IQ: Fresno State's online library orientation game.*College & Research Libraries News, 72*(11), 626-630. doi:https://doi.org/10.5860/crln.72.11.8667

Kapp, K. M. (2012). *The gamification of learning and instruction: Game-based methods and strategies for training and education.* San Francisco, CA: Pfeiffer.

Miller, K.E. (2014). Imagine! On the future of teaching and learning and the academic research library." *portal*. *portal: Libraries and the Academy* 14(3), 329-351.

Singh, M. (2013). International games day gets high score at UCLA. *Daily Bruin.* Retrieved from: http://dailybruin.com/2013/11/18/international-games-day-gets-high-score-at-ucla/