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Rush, Lucinda, "Learning Through Play, the Old School Way: Teaching Information Ethics to Millennials" (2014). *Libraries Faculty & Staff Publications*. 3.
https://digitalcommons.odu.edu/libraries_fac_pubs/3

Original Publication Citation
Rush, L. (2014). Learning Through Play, the Old School Way: Teaching Information Ethics to Millennials. *Journal of Library Innovation*, 5 (2), (pp. 1-14).

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JOURNAL OF LIBRARY INNOVATION

Volume 5, Issue 2, 2014

Article

Learning Through Play, the Old School Way: Teaching Information Ethics to Millennials

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Abstract

Incorporating gaming and active learning elements into library instruction in academic libraries has proven to be an effective way to engage Millennials and increase their retention of knowledge. This article ties research on the learning preferences of Millennials to elements of active and game-based learning. The author describes the process of creating an innovative game based on *Candy Land* to teach undergraduates about information ethics and makes recommendations for creating non-digital games for instructional purposes based on this experience.

Instruction librarians face a variety of challenges, especially in one-shot instruction situations. How do we make our course materials meaningful, relevant and memorable to our students? How do we best design our instruction to reach college students of today? This article describes a methodology for active learning that was implemented into a library instruction session on information ethics. Traditional undergraduate students of the Millennial generation are the targeted demographic for this case study. Prior to designing instruction for Millennials, it is essential that we know who these students are and how they learn.

It is well documented that Millennials enjoy learning actively. Active learning generally refers to a student-centered learning environment that includes an experiential, hands-on learning approach. In order for learning to be active, students should be engaged in an activity, such as problem-solving, role-playing, reading, writing or participating in discussion and debate (Bonwell & Eison, 1991). In active learning environments, the teacher provides the framework and serves as a supporter and a facilitator, while the student takes the responsibility for participating and learning. Detlor, Booker, Serenko and Julien (2012) administered a survey to undergraduate students to compare the effectiveness of active and passive teaching methods in information literacy instruction. They determined that the students who experienced an active learning environment were able to retain information and achieve the learning outcomes at a higher level than those who were in a lecture-style, passive environment. Notably, they also discovered that the amount of time spent on an activity did not necessarily make a difference after they spent thirty minutes on a particular activity and that it could be possible to integrate active learning techniques into a traditional lecture to raise the level of student learning (Detlor et. al., 2012). Facilitating active learning can be as simple as having students sit and stand for various questions or as complex as designing a Web-based alternate reality game.

Another learning preference of Millennials is to learn through collaboration with peers in a technology-rich environment. Colleges and universities have addressed these preferences, as evidenced in the rise of living learning communities on college campuses (DeBard, 2004) and the growing number of collaboration spaces in university libraries. Millennials can be motivated by competition and enjoy team based learning, whether in-person or via technology (Prensky, 2010). They prefer to have immediate feedback and assessment (Walsh & Inala, 2010), want subject matter to be relevant to their lives, and want to express opinions and make decisions (Prensky, 2010). Because they have grown up playing digital games, they are accustomed to experiential learning (Sweeney, 2005). Active game-based learning, which can involve elements of collaboration, discussion with peers, competition, role play, physical activity, and creativity lends itself well to the learning preferences of Millennials.

Literature Review

The role of the academic librarian as a teacher has become increasingly common over the past 20 years, with teaching currently playing a more important role than in the past, but the traditional one-shot lecture is not as effective with Millennials as with previous

generations. According to Lippman (2013), college students do not learn from the traditional lecture format that simply shares information and logistics because they live in a world in which information is easily accessible. Simply providing information isn't enough to assist them in learning the information and applying it in the context of their lives (Lippman, 2013). The lecture format produces a teacher-centered atmosphere, which does not take the learning preferences of Millennials into consideration (Lippman, 2013). As librarians, we may only have the opportunity to teach a particular student once or twice a semester, which can make it difficult to establish a rapport and teach in a manner that will facilitate student retention of knowledge. It is vital that we engage our students and make their experiences in library instruction meaningful and memorable.

Learning through play is not a new concept. Educators have been implementing the elements of gamification into their teaching for years, as many of the elements of gamification are based on well-established research in educational psychology (Kapp, 2012). In the early grades, teachers use games to teach concepts such as numbers, multiplication, colors, patterns, and more (Oblinger, 2006). Almost every grade school teacher has created some type of Jeopardy test review game at some point in time. Even militaries have used elements of gamification in training for centuries (Kapp, 2012). "Games hold much promise for teaching incoming students how to conduct library research and develop information literacy skills" (Markey et al., 2009, p. 304).

A review of the literature reveals that many librarians have implemented digital and Web-based games successfully to teach information literacy concepts. One strategy that was implemented in the case study described in this paper was to take a game that has a small learning curve that students are already familiar with and reinvent it to relate to class content. Librarians at James Madison University did this by creating two computer games, *Citation Tic Tac Toe* and *Magnetic Keyword* and evaluated their effectiveness in library instruction (McCabe & Wise, 2009). *Citation Tic Tac Toe* asked students to identify the correct type of source based on its citation. *Magnetic Keyword* required students to read a search topic and drag the appropriate keywords to the box with the search statement. Students who played the keyword game were able to demonstrate quicker database searching skills and indicated that they were more satisfied with their results than the control group of students that learned from a traditional online tutorial (McCabe & Wise, 2009).

When creating technology-based games, one must keep in mind the expectations of students who are used to playing highly visual, technical games created by corporations (Battles, Glenn, & Shedd, 2011). Because they have grown up surrounded by commercial technology, Millennials are demanding and "have become the ultimate consumers" (Duck & Koeske, 2005, p.113). They want instant feedback and gratification and this is provided in the video games that they play on a regular basis (Sweeney, 2005). Many librarians do not have the skills, time, or resources to create digital games that can compete with the games that Millennials play in their everyday lives. Additionally, digital games that are created today may be obsolete a year from now, given the rapid pace of changing technologies and information. While the corporate world or university libraries that have positions that are designated for this type of

support can keep up with these changes, many academic libraries do not have the resources to do so. Non-digital games are a more cost-effective, easier-to-implement alternative to digital games that also address most of the learning preferences of Millennials. Students with high expectations based on past experiences with technology-based games may not have the same expectations for non-technology based games based on physical activity, pencil and paper, or board games.
Topics that are more general and concept-based lend themselves well to gamification. Smale (2012) developed the game *Quality Counts*, to teach students how to evaluate websites. Though based on Internet resources, the game does not require much technology. Students work in groups, searching for resources on the same assigned topic and are awarded points based on whether or not their resource meets criteria related to the trustworthiness or relevance of the source (Smale, 2012). Student surveys indicated that 92% of students enjoyed playing the game and 82% perceived that they gained skill in website evaluation as a result of playing (Smale, 2012). When asked whether they preferred learning in a traditional format, by playing a game, or a mix of both, 16% selected a traditional format, 67% selected playing a game and 12% selected both (Smale, 2012).

Games can be an excellent way to reinforce and review topics covered during a lecture format, and to add variety to a class. At Georgia State University, Leach and Sugarman (2006) developed a Jeopardy-style game that reviewed facts that students learned during their library session. Librarians at the Peen State Berks campus also created a Jeopardy-style game to be integrated into their one-shot information literacy classes (Walker, 2008). The game was presented on a simple projector screen, and the students played in the traditional Jeopardy format without the ringing-in devices. The instructor aided the librarian in detecting which group raised their hands first to answer a question. The logistical aspects of the game were simple so the focus was on student participation and learning, not on how to play (Leach & Sugarman, 2006). Using a game format that students are already familiar with helps to keep the focus on the learning outcomes.

Smale (2011) emphasizes that games do not have to be complex to be effective in the classroom. Simple pencil and paper games can easily address the need of Millennials for active learning and immediate feedback. Smith (2007) created a two-minute crossword puzzle to reinforce a brief lecture that included information about Boolean operators. Smith (2007) also created a simple Tic Tac Toe game to reinforce knowledge about citation. The game involved placing an X over items that could be copyrighted and an O over items that could not be copyrighted, and students had to explain their reasoning for each item (Smith, 2007). Games do not need to take a lot of instructional time, but incorporating a short activity into a traditional lecture can help make it fun for students and keep them engaged.

At the University of Auckland Library, librarians have redesigned their information literacy courses to include interactive activities and games with a student-centered approach (Zdravkovic, 2010). The activities included were simple and effective. For example, they gave students sticky notes at the beginning of class and had them write

down a question that they had about the topic being presented. At the end of class, students were asked to answer the questions. Zdravkovic (2010) also used an icebreaker in which students stood in various places in the room based on their experience with using databases. Requiring students to physically move is an excellent way to address different learning styles and regain attention. A problem-based activity with a gaming element was also used by Zdravkovic (2010). After instruction on a certain topic, students were asked to pick the wrong answer from a group of answers to a specific question.

Case Study

Old Dominion University (ODU) in Norfolk, Virginia is a mid-size university, enrolling just under 25,000 students. Old Dominion University Libraries currently employs nine reference librarians whose responsibilities include library instruction and three staff members who teach some library classes. The reference department does not have access to student assistants or staff who have expertise in digital game development.

As part of the general education requirements for undergraduates, ODU students are required to take an information literacy designated course. The courses are offered in several departments and disciplines. The department of STEM Education and Professional Studies within the Darden College of Education offers multiple sections of STEM 251G (Computer Literacy: Communication and Information) to fulfill this requirement. Students of any major or class standing can take this class to fulfill the information literacy requirement. The majority of students enrolled in the STEM 251G courses are of traditional college age, and tend to be mostly undergraduates from a variety of departments and majors. Multiple sections of the class are offered each semester and there are on average nine sections in the fall, six in the spring, and two during the summer. The course description for STEM 251G is: “A guided review of communication technology and information sources to help students discern between reliable and unreliable sources and techniques. Students develop skills in computer applications, information retrieval, filtering and analyzing data, and formatting and presenting information.”[1]

The library component of the class includes teaching students information retrieval, information ethics and how to distinguish between reliable and unreliable sources. Each section has two library instruction sessions, one addressing information retrieval and source evaluation, and one addressing information ethics. Students are also required to complete online information literacy modules that were created by reference librarians. As the education reference librarian, the author is responsible for teaching the STEM 251G library sessions and for communicating with the students and faculty throughout the semester on an as-needed basis.

This case study focuses on the information ethics part of the course. The teaching of information ethics lends itself well to group discussion and active learning. The issues related to information ethics can be easily related to countless everyday life decisions that college students face today. Issues covered in the information ethics session

[1] See http://catalog.odu.edu/courses/stem/

include academic honesty, plagiarism, social media ethics, and copyright. In past semesters, the author used online polling software to initiate conversations about various scenarios. Past lesson plans also included a group activity in which students completed the plagiarism exercise, *How Plagiarism Changed a Life* (Burckhardt, MacDonald, & Rathemacher, 2010). These methods addressed several of the learning preferences of Millennials: the desire to work with peers, to express opinions, and to make decisions. During past semesters, the author observed that students were much more open in their discussion during the group activities when they were able to discuss a particular scenario with peers. They also appreciated and enjoyed the anonymous voting feature of the online polling software. Because of the concept nature of the topic of information ethics, the author decided to incorporate a gaming element into this session, and has implemented it the past two semesters of instruction.

In Fall 2013, the author created a game to help students learn about information ethics based on the board game *Candy Land*.[2] The author chose to base the game on *Candy Land* due to its simple structure and for its nostalgia factor (the author informally asked several students what board games they remembered and liked the best from their childhood and *Candy Land* was one of the most common answers). The rule sheet was modified, renaming the various aspects and characters in the game to relate them to information ethics and the learning outcomes of the session.

At Old Dominion University, instruction librarians relate most learning outcomes to the ACRL Information Literacy Standards. This particular session addresses Standard Five: "the information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally" (Association of College and Research Libraries, 2000). The learning outcomes for the session are:

1. Students will analyze and discuss various ethical situations and how they may relate to their academic lives.
2. Students will demonstrate knowledge of elements of the ODU Code of Student Conduct[3], copyright law, and citation rules.

The game was titled *Perry Library Land* after the Patricia W. & J. Douglas Perry Library, the main library on Old Dominion University's Norfolk campus. Students were to travel the board game path, passing through the Plagiarism Forest, the Foggy Gummy Mountains and the Confused Chocolate Swamp. The author included the words "plagiarism", "foggy", and "confused" to acknowledge that undergraduates tend to be confused about issues regarding plagiarism. They were able to visit the Super Librarians, NobleNutt and Fashionable Frostine. They were warned to watch out for the ever menacing Captain Cyberspace. The author chose the terms super librarians, noble, fashionable and cyberspace to compliment librarians, and to poke fun at the realm of cyberspace and how it has changed the topic of information ethics.

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[2] See description at http://www.hasbro.com/en_US/shop/details.cfm?R=C4E461C2-5056-9047-F5F7-F005920A3999:en_US

[3] See https://www.odu.edu/content/dam/odu/offices/bov/policies/1500/BOV1530.pdf

The game was designed to provide immediate feedback, which is a common learning preference of Millennials. The game was simple in design, and students could learn to play it within minutes, thus embracing the tendency of Millennials to prefer to receive information at a fast pace, and allowing them to focus on the content of the game rather than how to play. The game encourages discussion and allows for students to learn from their peers. Though the original *Candy Land* game is purely based on chance, *Perry Library Land* included a competitive element because students had to answer a question correctly before moving forward.

The materials for creating the game included *Candy Land* board games with all of the pieces, colored index cards to correspond with the colors on the game board labeled with scenarios and questions, an answer key, and a rule sheet. Candy was provided as prizes for the winners.

The DataGenetics blog (Candyland, 2011) provides an in-depth mathematical analysis of the original *Candy Land* game, which includes 134 spaces and 6 colors. The board game includes single square cards and double square cards of various colors (red, orange, yellow, blue, green, purple). This information was useful to the author because it made the process of creating questions for each category a quick one.

For *Perry Library Land*, each topic was assigned a color, and each card included a question or scenario based on its assigned color topic. The assigned topics were copyright (red and orange), academic honesty (yellow and green), citation (red), and social media ethics (purple). The rules of the game were very similar to those of the traditional *Candy Land* board game, but each time a student drew a card he had to read and discuss a scenario on a corresponding color card with his team and give an answer. If the answer was correct, the player could move forward. Cards with 2 blocks of color were considered “bonus” cards. These questions were more in-depth and when answered correctly, the player could move forward twice. Each group was given an answer key and was instructed that the most trustworthy person in each group would hold the answers.

Cards used true/false, yes/no, and multiple-choice questions. Single box questions used true/false and yes/no questions; multiple-choice questions were used for the bonus cards. The questions were written to encourage conversation. Many of the questions had more than one correct answer, which allowed the students to take ownership of their hypothetical actions in these scenarios, something that Millennials prefer and appreciate in a learning environment (Prensky, 2010). Elements of humor were included in the scenarios and in the possible answers to keep students engaged and amused. The questions encouraged conversation and collaboration. Table 1 includes a sampling of questions.

Table 1.

Sampling of Perry Library Land Questions

Topic	Question
Copyright	True or False 9: Restaurants can have their wait staff sing the song “Happy Birthday” to customers because the author is unknown.
Academic Honesty	True or False 12: Using the same paper for more than one class is o.k. because I cited all of my sources and wrote the paper myself.
Citation	True or False 23: I do not have to cite Barack Obama’s birthday because it is common knowledge.
Social Media	True or False 15 I can post a You Tube video and use any background music that I want because I’m not using it to make money.
Copyright Bonus	Bonus 4: You don't have the money to buy your textbook for class, so you borrow it from a friend and photocopy the pages that you need. A. This is totally legal if I don’t copy the whole book. B. This is wrong, but I would do it anyways because I doubt that anyone would find out. C. This is illegal and I wouldn’t do it.
Academic Honesty Bonus	Bonus 7: A lab for your science class is taking forever to do, and you pretty much already know what the results will be. A. Finish the lab. B. Just fill out the lab sheet the way you think it will go, and turn it in. C. Don’t do the lab...whatever….
Citation Bonus	Bonus 2: You copy & paste a few sentences from a website into your paper. The website doesn’t list an author or date. You should: Not quote it or cite it. There is not enough information to cite. Quote and cite it.
Social Media Bonus	Bonus 13: You see a friend bragging on Facebook about cheating on an exam. You should: A. As a true Monarch, you would turn this person in anonymously. B. You would talk to your friend about how they shouldn’t cheat in the future. C. You wouldn’t do anything. It’s none of your business

During the fall of 2013, students were given extra credit for attendance at the information ethics workshop for their STEM 251G class. All sections of the class had previously attended a library instruction session at which they learned database searching techniques, source evaluation, and the differences between Google and the EBSCO Library Discovery Tool. They also completed a “Website Scavenger Hunt” through which they learned about library services. The information ethics workshop was offered twice, on two different days and times. Students from the nine sections offered could come on a voluntary basis to either session. Thirty-one students in total attended the two sessions, seven attended the first session and twenty-four attended the second session. The author created five board games, in anticipation of a large turnout.

Students played in groups of four or five. The author observed that the students were very willing to discuss the various scenarios with their group members and in some cases were passionate about sharing their thoughts. Students became engaged in the content, asking questions about the specific scenarios and expressing their surprise at the correct and incorrect answers. Student feedback was positive, including the comments “this was fun,” and “this was way better than I was expecting.” They also seemed to appreciate that the game was based on *Candy Land*, and were amused to revisit a game from their childhood. Figure 1 provides an image of the game being played in a class.

Figure 1. *Perry Library Land*.

During the spring of 2014, instructors of STEM 251G agreed to have their students come to two required library instruction sessions and to complete the library website scavenger hunt. There were 5 sections of the class. The information ethics session was the second of the two required library sessions. A total of 101 students attended an

information ethics session. The format of the game remained the same as the previous semester, with some slight tweaking to specific questions and scenarios. Prior to the game, the author led an open discussion about information ethics, what the term meant, and what it could include. The classes briefly discussed the ODU Code of Student Conduct. The author gave a couple of specific examples of copyright issues dealing with YouTube and examples of plagiarism. Assessment was done by informal observation and by asking students to write down one thing that they learned about information ethics on a piece of paper to be turned in at the end of class. The chart below includes a sampling of their answers.

Table 2

Sampling of Student Answers

I learned that it is not o.k. to double use papers.
Cite all your sources whether it is a research paper or not.
I learned that you have to cite ALL your sources.
I learned today that ethical dilemmas are very situational and if in doubt, cite or give copyright acknowledgement.
It is hard to be ethical when your friends are involved.
I learned what intellectual property is.
It is possible to cite a tattoo.
I learned that Happy Birthday is protected by copyright restrictions, so restaurants can't use it.
If someone doesn't participate in a group assignment and that person is still getting credit it is cheating.
I learned what to cite and what not to cite.
I learned that even if you say where you got things from, you can still get sued.

In the formal assessment, students in the same groups tended to focus on the same things, so many of the responses were duplicates. As with the first semester classes that played the game, the author observed that students were willing to talk openly to the peers in their groups about the scenarios with which they were presented. Since the game was designed to give immediate feedback, this encouraged the students to engage in conversation with the librarian throughout the game when they had questions about a particular scenario or disagreed with the answer key. Unlike the first trial of the game, students in the spring 2014 sections were required to attend the information ethics sessions. This resulted in an unexpected observation. The students who came for extra credit in fall 2013 were overall more enthusiastic about the game than the students in the sections that were required to come. The students in the required sections included a mix of very enthusiastic students, students who participated but were not overly excited about learning, and a handful who did not participate at all. It is

possible that this could be an effect peculiar to a library “one-shot” situation in which the students do not necessarily have a context or a relationship with the instructor.

Recommendations for the Future

Based on this experience, the author recommends the following guidelines and best practices for creating non-digital games for use in library instruction:

- Learning outcomes should be developed first and game design should be based on the learning outcomes.
- “How to play” the game should be kept simple and should have a short learning curve.
- Subject matter should be relevant to participants.
- The game should address the learning preferences of Millennials, e.g, quick cycling of feedback to reward participation.
- Include elements of humor as often as possible.
- Assess student learning.

In the future the author intends to address the need for more formal assessment. The plan is to develop an online pre-test and post-test that will be administered prior to and at the conclusion of playing the game.

Conclusions

Incorporating gaming and active learning elements into library instruction in academic libraries can be a very effective way to engage students and increase their retention of knowledge. Games speak to the learning styles of Millennials and encourage active participation by including social elements, being fast-paced, including a competitive element, and being student-centered. Games can be simple and easily incorporated into instruction. Simple non-digital games can be beneficial in two ways. First, they are easy to create and require little to no technology training or skill and require little, if any, extra funding or resources. Second, they can be easily adapted and changed as information and instructional needs change. Since the author was able to teach the STEM 251G classes for two class periods during the second semester of use of the *Candy Land* game, an entire class period could be devoted to the game. In shorter sessions, games can be interspersed throughout or can take up a small portion of time at any point during a class. The author found that the experience of including a game in instruction allowed for students to reach out and express themselves in a way that they had not in previous, more traditional information ethics classes. Playing the *Perry Library Land* game allowed students to laugh and have fun, developing a good rapport with each other and with the librarian while achieving the learning outcomes for the class.

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