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Adapting the Amazing Library Race: Using Problem-based Learning in Library Orientations

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Abstract

This paper describes a pilot adaptation of the Amazing Library Race (ALR), an academic library orientation designed to introduce new users to library resources and services. A total of 185 students in twelve classes participated in the pilot project, which the authors co-taught. Pedagogically, the ALR combines guided, problem-based learning concepts with key elements of gamification, including competition and reward motivation. It also addresses the learning outcomes of reducing library anxiety and providing general information about collections and services. A review of the literature used in the design of the race is included, as well as a description of the race development and the rubric-based assessment tool used to gauge its success. The pilot orientation presents a replicable model for institutions interested in creating similar library orientation sessions.

Introduction

The First Year Programs department at Long Island University, Brooklyn Campus (LIU Brooklyn) maintains a strong focus on active, student-centered learning. As library instruction sessions became more embedded in this department's one-credit freshmen orientation seminar course, a need emerged for a library session with similar pedagogy. In response to this need, a pilot library orientation project called the Amazing Library Race (ALR) was adapted. The orientation directs first year students to complete research challenges about services and

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resources in four different categories: Internet research, library access, media center resources, and reference research. The learning outcomes of these challenges focus on providing participants with general information about library resources and services. However, unlike much traditional library instruction, the ALR does not involve librarians demonstrating or lecturing on the fundamentals of academic research. Rather, the primary goal of the workshop is for students to explore the library in a relaxing and entertaining setting. During this process, the pedagogical design of the race, which incorporates aspects of problem-based learning and key elements of gamification, encourages students to make connections with their peers, library faculty, and library support staff. In this way, the ALR intends to both supplement and precede formal instruction, operating from the schema that scaffolding students' introduction to college-level research results in optimal learning outcomes.

As a relatively new and untested method of instruction, the ALR necessitates assessment in order to justify its classroom implementation and continuation, and concrete data must be obtained in order to determine the effectiveness of the teaching method. During the year-long period of the pilot ALR project, the authors developed a rubric-based assessment tool for this purpose. Documentation of both the pilot project and the assessment tool may be useful for institutions interested in creating similar orientation sessions.

Literature Review

Background of the Amazing Library Race

The Amazing Library Race (ALR) is based upon *The Amazing Race*, a reality television game show that premiered in September 2001 (Lowry 2001). Recognizing the potential of this show to transform into an exciting and collaborative approach to information literacy instruction, an imaginative set of librarians was inspired to develop the ALR. The first appearance of the

ALR located by the authors occurred in 2006 at the University of Arizona (UA). Called The Amazing Library Race: Desert Edition, this activity was explicitly created to introduce new students to the UA library facilities and staff (University of Arizona Libraries 2006).

Currently, the majority of information about the ALR can be found on Internet search engines, revealing the existence of many ALR programs across both public and academic libraries. In the case of Library and Information Science (LIS) scholarly literature, however, at present, there is little documentation of the ALR. Only one article fully details an academic library's subjective experience with adapting and implementing the activity at their institution, Southern University, Baton Rouge (Banks and Svencionyte 2008). Shortly after its development, Banks and Svencionyte's article was included in an extensive bibliography of resources pertaining to information literacy instruction (Johnson, Sproles, and Reynolds 2009).

In a review of seven programs created to enhance user experience at academic libraries, Boulé (2009) describes the University of Calgary, Alberta's (UCA) version of the ALR, targeted at students in the university first year experience classes. Most recently, O'Clair presented her library's adaptation of the ALR at the conference LOEX of the West 2012 (Rosenfeld and Gatten 2013). O'Clair facilitated a mock ALR for conference attendees, teaching them a unique approach to discovery learning through the same active process students would experience. Operating from an active learning framework, the ALR champions the notion of learning by doing, sending teams of lower-level students on an interactive journey around the library. The ALR's focus on problem-solving, student-centered inquiry, and group work qualifies it as a teaching technique called problem-based learning.

Problem-based Learning

An inquiry-based pedagogical method that sets the stage for lifelong learning through the development of solid critical thinking skills, problem-based learning (PBL) has been successfully used by many academic librarians (Pelikan 2004; Kenney 2008; Hsieh and Knight 2008; Bowler and Street 2008; Diekema, Holliday, and Leary 2011; Cook and Walsh 2012; Hines and Hines 2012). Originating in the medical school of Canada's McMaster University in the 1960s, PBL replaces traditional lecture-focused teaching methods with an active, collaborative classroom. Barrows (1996) outlines six primary components of PBL, including: student-centered learning, the formation of small student groups, teachers as guides, and the assignment of a problem as a learning stimulus (6). These characteristics of PBL are appealing to academic librarians eager to assist students in realizing their potential as information literate individuals capable of working both independently and collaboratively.

In terms of the ALR, four principles of PBL elucidated earlier in this paper (Barrows 1996) are employed to optimize student learning outcomes. First, the ALR is centered on the learning needs and educational processes of students, not the content presented by classroom instructors. Although students are assigned various tasks to complete, many of the tasks do not necessitate one overarching correct solution, but rather encourage students to brainstorm unique answers using their own creativity and experiences. Next, students are divided into small groups at the beginning of the class. Using the principle of learning by doing, students work collaboratively to complete the creative tasks assigned by the librarian, who is available for questions but does not give a formal classroom presentation. They remain in these groups for the duration of the class, and they devise official team names to promote unity and cohesion.

Third, librarians serve as facilitators rather than lecturers within the ALR milieu. Instead of presenting students with information for memorization and repetition, librarians advocate an active learning process in which students retrieve information and generate answers using their own methods and knowledge (Dodd 2007). Students do not even remain in the computer lab with the instruction librarian(s) for the majority of the class session, as they are given an assorted array of active learning tasks that require them to visit different departments of the library.

Lastly, the ALR teaches students about the library and its multifaceted resources through interactive and engaging problem-solving techniques. In this scenario they are detectives assigned to a case in which they investigate the library with their partners to reach their own solutions and conclusions. Some of the questions in the ALR entail one concrete answer, but many inspire multiple interpretations, a foundation of PBL pedagogy. The development of solid and fluid problem-solving abilities is essential to achieve the information literacy skills integral to success in both higher education and professional life.

Development of the Amazing Library Race

A total of 185 students in twelve classes participated in the ALR orientation sessions, which the authors co-taught. After breaking the students into teams of three to five people, each group was instructed to choose a team name and was given an envelope containing the challenges of the first leg of the race. Each leg contained from one to three tasks, which needed to be correctly completed before students could advance to the next leg of the race. The tasks were both intellectually and physically engaging, requiring students to complete such challenges as finding a book in the stacks, writing a haiku about specific library services, and looking up trivia in reference books. The first team to complete all legs of the race and return to the instruction lab won a prize.

The development of the authors' version of the ALR began with the creation of a logo, to give the race a graphic identity and help build excitement for the race and its participants. The logo (see Figure 1) uses the same typeface as *The Amazing Race* logo - Microgramma Bold Extended. This logo was modified to include the word "Library," and the resulting image was then displayed on all ALR documents distributed to participants, including the question envelopes and answer sheets. Additionally, the logo was displayed on a PowerPoint slide in the library instruction classroom throughout the duration of the race.

Figure 1. Amazing Library Race logo.

The questions or challenges that make up the ALR were designed to address common resources and services students may access during their coursework. The tasks were ordered around the physical layout of the LIU Brooklyn Library, so as to make the logistics of the race more manageable.

The first leg of the race began in the library instruction classroom. Students were given the following three questions in the first envelope:

1. Look in the library catalog for any books written **by** Jay-Z. Write down the call number of the book.

2. What is an Academic Libraries of Brooklyn (ALB) card, and what can you do with it? Name four places you can use this card.

3. This is an MLA citation for an academic journal article. Identify the article title, journal title, and author: Marrou, Chris. "Our Gal Snooki." *American Scholar* 81.3 (2012): 5. *Academic Search Premier*. Web. 6 Sept. 2012.

If a group of participants had questions or became stuck, the librarians would assist them. When each question was answered correctly, the team would be given an envelope containing the following two questions for the next leg of the race, which would take them to the Circulation Department:

1. Complete this mysterious library Mad Libs about something you will need to get on your student ID card. In order to _____ (verb) out books from the library or access databases from _____ (place) you will need to get a library _____ (noun).

2. Make your way to the 5th floor circulation department. Locate a book near this call number: **PS 3570** in the stacks. Write down the title of your chosen book. Using the blank sheet of paper on the back of your answer sheet, draw a picture of what you think the cover of the book should look like based upon its title. Bring this picture to the instruction lab to proceed to the next leg of the race.

If participants had questions during this leg of the race, they were instructed to consult with the staff at the circulation desk for help, which further encouraged students to seek information about resources and services at the library's service points. Consulting with faculty and staff at relevant service points when designing the ALR is crucial in securing faculty and

staff support for the project. Allowing advanced notice of increased traffic ensures that service areas are prepared.

When participants completed this leg of the race, they returned to the instruction lab to check their answers with the librarian. If the answers were incorrect or incomplete, they would return to the circulation department until each task was completed. At this point during the race, groups with good internal communication and constructive team building skills had often emerged as the front runners; groups that were less constructive lagged behind. This added value learning outcome teaches students teamwork and communication skills.

The third leg of the ALR directed students to the media center department in the following challenge:

1. Make your way to the Media Center, on the 5th floor. At the service desk, you will find a DVD case waiting. Using the available props, recreate this DVD cover, and take a photo. Return to the instruction lab with the photo to proceed to the next leg of the race.

The DVDs used in the pilot run of this leg of the ALR were *The Big Lebowski* (Coen 1998) and *Dive Bomber* (Curtiz 1941). These motion pictures were chosen for the humorous characters appearing on each DVD cover, the feasibility of being able to locate or recreate each character's costume, and the estimated time and expense necessary to do so. Props purchased for these two DVDs included, in the case of *The Big Lebowski,* two pairs of sunglasses, one fake beard, one plastic water pistol, one fishing vest, and one oversized, button-down sweater. For *Dive Bomber,* props included one pilot's hat, one pair of aviation goggles, and one aviator cap. Total cost for these props and candy was approximately $130.

To ensure that the media center leg of the race ran smoothly, it was important to confirm at the beginning of the instruction session that at least one participant in each group had a smartphone, tablet, or other device that contained a camera. At LIU Brooklyn, a shortage of electronic devices containing a camera was never a problem, but other institutions might consider having a camera on-hand as backup. Another important consideration during this leg of the race is that it can be disruptive, due to participants' laughter and the need for space when putting on props and recreating the DVD cover. For this reason, it is important to ensure the DVD cover re-creation challenge be staged in an area where it will not be too disruptive to student learning or studying. Obtaining support from media center faculty and staff during the development of the ALR is, again, crucial to ensure that all library personnel are on-board with the instruction and will be prepared for the increased traffic.

The final leg of the ALR directed students to the third floor of the library, with the following two questions:

1. Write a haiku about how and where you could go in the library to print documents. Haiku structure: A poem with three lines; 5 syllables in the first line, 7 syllables in the second line, 5 syllables in the third line.

2. Make your way to the Reference Desk on the 3rd floor, and ask the librarian on duty for ***The Encyclopedia of War Movies***, Call #: PN 1995.9 .W3 D38 2004. Look up "***Deer Hunter***" in the index**.** List one "interesting fact" about this movie.

3. Return to the instruction lab to see if your team has won the race!

The second question in this leg of the race was modified from its original version. Initially, the question asked students to find a particular reference book, *The Encyclopedia of*

War Movies, on the actual shelf, instead of at the reference desk. The two learning objectives in the initial design of the question were to practice locating a book in the stacks and find information in a reference text. However, asking students to access a particular book on the shelf proved problematic, as students would purposely hide the material or otherwise misshelve the material in order to thwart the group immediately behind them. Leaving the reference material at the service desk averted this problem.

The first group to complete this final leg of the race correctly won a prize, which consisted of mini candy bars. Prizes and rewards are an important motivator in the gamification of instruction sections, even if, as in this case, they are mostly nominal.

Following the acknowledgement of the winning team in the library instruction lab, participants were then encouraged to email the librarians their DVD-cover re-creation photo that was required during the media center leg of the race. The librarians notified participants that these pictures would be posted to the Library Facebook page.

After posting the ALR photos to the LIU Brooklyn Library Facebook page, a thank you email was sent to the participant, directing the student to the library's Facebook page to look for their photo and to "like" the page in order to receive updates on library services, resources, and extended hours. In this way, the ALR fostered early connections with students at the beginning of their academic degree process, and it also allowed the library to be in closer contact with this population of users.

Rubric Development for Outcomes Assessment

During the pilot run of the ALR, the authors developed a rubric to assess the workshop on five different indicators of success: student to student engagement, student to library faculty engagement, student learning comprehension, student engagement with library social networks,

and workshop duration (see Appendix A). Implementation and revision of this rubric began during the Spring 2013 semester, and its development may be useful for other institutions interested in assessing similar library orientations.

A rubric was chosen as the assessment method for several reasons. First, rubric-based assessment of information literacy activities can be built into the instruction, minimizing time taken away from the class session and student learning. Second, activities have a high rate of engagement, and also typically a high rate of completion, making artifacts for assessment readily available (Sobel and Wolf 2011). And finally, as opposed to indirect assessment methods such as surveys and tests, rubrics can directly assess artifacts and evidences of student learning, which improves the validity of the measurement tool and resulting conclusions.

The process of creating a local rubric and properly training and norming raters on its application can be one of the time-consuming disadvantages of using rubrics to assess information literacy activities (Oakleaf 2008; Sobel and Wolf 2011). The development of the local rubric to assess the ALR began with an analysis of the main learning outcomes of the course and the corresponding library instruction. These factors formed the basis for the indicators assessed by the rubric. One practical indicator was also included to measure the duration of the workshop and timeliness of students' completion to assist in designing and revising the difficulty and depth of the workshop activities. A first draft of the rubric was created and applied during a pilot assessment of the ALR. The authors then met to discuss and revise the rubric dimensions and its application. The rubric was applied in a second test session, and further revised.

The first two indicators measured by the rubric – student to student engagement and student to library faculty engagement – were assessed using in-class observations. These observations were recorded as beginning, developing, or exemplary, in accordance with the

locally derived definition of each benchmark. The authors found it challenging, but not overly work intensive, to both run the workshop and assess these dimensions concurrently. This is partly because preparation for the workshop is very front-loaded: during the actual instruction session, the ALR requires minimal intervention, allowing ample opportunity for recording observations.

The third indicator measured by the rubric, student learning comprehension, was assessed using students' answer sheets. This entailed reviewing and coding the answer sheets each student group completed during the course of the ALR. Answers were rated according to a scale adapted from Sobel and Wolf, in which a score of 0 indicated the group had skipped the item or made a weak attempt at completion, a score of 1 indicated the group had met the stated requirements, and a score of 2 indicated the group had made an exceptional effort and gone beyond the stated requirements (2011, 250). As Sobel and Wolf have noted, the disadvantage of this scale is that it lacks nuance, yet its simplicity also ensures a faster grading process for raters.

Student engagement with library social networks, another indicator of success, was assessed by two different measures. The first was the number of groups willing to share their media center challenge photo with librarians. This internal metric indicated how many students felt comfortable and willing to engage with the library on Facebook. Recording and tracking this information was important to assess whether students would welcome such a connection. Student engagement with library social networks was further assessed by tracking the number of new "likes" accrued on the LIU Brooklyn Library's Facebook page. While this does not establish a causal relationship between student engagement with the library's Facebook page and the implementation of the ALR, a statistically significant correlation here, either positive or negative, would nonetheless be meaningful and note worthy.

And finally, workshop duration was assessed for the practical purpose of ensuring that the ALR could be reasonably completed during a 50-minute one-shot session. The data source used to assess this concrete aspect of the workshop was in-class observations.

Implementation and Results

Working with the Coordinator of Library Instruction, the authors planned and implemented a programmatic expansion of the ALR during the fall of 2013 that resulted in its inclusion in approximately 75 percent of Orientation Seminar 1 courses. The manageable size of the ALR as an initial pilot project allowed the authors to identify and resolve any minor problems in the original design of the race. By addressing these issues during the pilot project, the authors were able to streamline and strengthen the workshop before the expansion, resulting in a smooth roll out on a larger scale.

Similarly, while the trial run of the workshop utilized two librarians to co-teach the class, revisions and modifications to the race, as outlined in this article, have made it possible for librarians to easily facilitate the workshop individually. During the recent expansion of the workshop, props and related materials were housed in a central and accessible location, allowing any librarian to teach the ALR as an out-of-the-box orientation session. Another expansion of the ALR is planned for future semesters, with a goal of reaching 100 percent of Orientation Seminar 1 sessions in Fall 2014.

As the first year of the Amazing Library Race was a pilot, the results of the program are primarily exploratory and anecdotal at this time. The observational rubric created during this period will be used to systemically assess the program in coming semesters, in order to gain a better understanding of its effectiveness.

In lieu of formal assessments, the researchers made many encouraging observations during the pilot execution of the ALR, and the project also yielded positive verbal feedback from students, faculty, and colleagues outside of the institution, demonstrating the worth of this pilot as a project deserving continuation, expansion, and evaluation.

Feedback on the ALR from Orientation Seminar (OS) teaching faculty was overwhelmingly positive. One instructor wrote that her students "really enjoyed the day," and the following semester emailed the authors in advance to request an ALR session for her class. In this request, she commented that her students, "were so excited about it last year I cannot wait for them to get into it this semester."

Another first year instructor contacted the researchers asking if she could schedule an ALR session for her students. She had been referred by a colleague whose class had participated in the ALR, an indication that positive reviews of the workshop had spread among the teaching faculty. The workshop was also requested in other undergraduate courses, including an English composition class (a request that was gladly granted).

In terms of student response to the ALR, the instructors received highly favorable input. When informally surveyed after class, several students commented that they preferred the ALR to traditional lecture instruction on information literacy. In all of the classes the instructors conducted casual ethnographic observations, perceiving numerous favorable signs of engagement including laughing, friendly competitiveness (i.e. racing their peers to the finish line), and effective collaboration. Negative observations were also made, mostly related to students who refrained from working with the rest of their group on a task, which is generally to be expected in any type of team-based project. These observations informed the development of

the assessment rubric outline in this article, which will be employed in the expansion of this workshop.

Excitement over the ALR was not limited to students and employees of LIU Brooklyn. Following the dissemination of these initial findings at a national conference, the authors were contacted by two academic librarians who requested to use the workshop as a model in their own institutions. One of these librarians contacted the authors after implementing the ALR at her institution, Ferris State University, and she reported that the workshop was very successful with both faculty and students. This librarian and her colleagues had implemented over 100 sessions of the ALR, sometimes running several sessions concurrently, and she praised the workshop's adaptability. She added that the media center leg of the race, which Ferris State altered to fit its needs, was quite popular and fostered student creativity.

The combination of affirmative feedback from both LIU Brooklyn students and faculty as well as librarians at other institutions is very encouraging, and formal assessment of the ALR with an analytic rubric is planned for future semesters.

Future Directions

Given that the ALR is still a burgeoning project, the authors continue to look for ways to improve the game's structure and advance student information literacy outcomes. To this end, systematic assessment data gathering and analysis is also planned as part of the expansion of the ALR. All librarians implementing the workshop are trained not only on executing the race but also in using and applying the rubric. The resulting data will be used to assess the success of the workshop and will inform its continued use or modification.

Another opportunity for the ALR is to one day embed Library and Information Science graduate students within the ALR classroom. A combination of ALR documentation and hands-

on training with library faculty could allow these future librarians the opportunity to gain valuable instruction experience. Their involvement could entail either a teaching assistant role or solo facilitation with a responsible amount of supervision on the part of degreed librarians. In addition to providing library school students with important practical job-related experience, this tactic could also result in freeing up some time for librarians with heavy instruction loads, sanctioning them to teach more academically advanced classes.

And finally, the ALR format and teaching method need not be limited to the academic library; its status as an enjoyable and interactive game denotes its translatability to both public and school libraries. Public and school librarians desiring an innovative means to teach children and teenagers the fundamentals of library use could modify the existing ALR paradigm to fit the information needs of their own user community. The eventual dissemination of this ALR documentation will hopefully serve as a germane outline for a diverse group of librarians interested in testing out this activity with their patrons.

Appendix A

Indicators	Beginning	Developing	Exemplary	Data source
Student to student engagement	Less than 50% of students in the class collaborate on tasks	50-75% of students in class collaborate on tasks	75-100% of students in class collaborate on tasks	Observation during workshop
Student to library faculty engagement	Less than 20% of students in the class have interactions with library faculty	20-50% of students in class have interactions with library faculty	50-100% of students in class have interactions with library faculty	Observation during workshop
Student comprehension of workshop activities	Score of 0 to .5 on learning comprehension rubric	Score of .5 to 1.5 on learning comprehension rubric	Score of 1.5 to 2 on learning comprehension rubric	Student answer sheets
Student engagement with library social networks	Less than 25% of groups send photos to post on library Facebook page	Twenty-five to 50% of student groups send photos to post on library Facebook page	Fifty to 100% of student groups send instructors photos to post on library Facebook page	Media Center photos emailed to librarians
Student engagement with library social networks	Library Facebook page connections show no increase	Library Facebook page connections increase by up to 50%	Library Facebook page connections increase by 50% or more	New connections made via social media
Workshop duration	Less than 50% of class correctly completes all tasks on time	Fifty to 75% of class correctly completes all tasks on time	Seventy-five to 100% of class correctly completes all tasks on time	Observation during workshop

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