CHAPTER 26

Interactive eLearning: Designing the Immersive Course-Integrated Online Library Orientation

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BACKGROUND

Berkeley College is a 4-year proprietary institution offering certificates, associate's degrees, bachelor's degrees, and a recently introduced master's degree. With eight campuses throughout New York and northern New Jersey, as well as Berkeley College Online, Berkeley College provides career-focused degree and certificate programs to more than 7500 students (Berkeley College, 2017).

With a diverse student body spread across so many campuses, each with its own physical library space, orienting students to library resources, spaces, and support services poses a unique challenge. A virtual orientation was proposed to promote greater use of the library. Our foundational English course was identified as an optimal place to situate this orientation because librarians were already working with professors to deliver an information literacy pretest and other research support. This chapter addresses the creation of an online learning object built to engage and orient students to library resources, spaces, and support services. Developed in Articulate Storyline, the orientation follows two student characters as they navigate a virtual library environment consisting of three nonlinear modules. Students are immersed in a variety of scenario-based interactive learning activities where they must click, hover, drag, drop, and explore to proceed.

PRELIMINARY ANALYSIS

Although an orientation is necessary to ensure that all students have some exposure to what their college library can provide, our initial effort posed

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many challenges. Initially consisting of four Camtasia videos and Blackboard-based quizzes, the content was deemed too long, as student completion rates were low. Faculty were encouraged to use the quiz grades as grades for the course, but no standard was set and orientation content and course content were never aligned. The content felt forced and seemed to be one extra thing in a course that already contained other librarian–faculty instructional collaborations. Providing students access to the orientation was also a challenge. A Blackboard organization housed the content, and quizzes had to be populated automatically by our Information Systems team each term: approximately 500 students enrolled in the foundational English course would have to be concurrently enrolled in this organization. Because grades could not easily be shared with faculty and student sections were not automatically identified, librarians had to identify sections and run multiple grade reports to share with faculty.

The orientation underwent multiple revisions over the course of 6 years, diminishing in size and scope so as to make the activity easier for faculty to incorporate and students to complete. Passivity and disinterest in this learning object led the Library's User Experience Committee to explore the possibility of a complete overhaul. By the time this major reworking took place, the orientation was a mere 9-minute video and a 10-question multiple-choice quiz; barely 70% of students enrolled completed it.

By the fall of 2013 the liberal arts core curriculum was modified to include a freshman experience course, SOC 1123 Psychology of Adjustment. From 2013 through 2015, librarians were asked to support this course. Some professors wished to expose their students to basic research skills, others to the role of a library and librarians in the 21st century. These invitations served as inspiration to propose a complete overhaul and relocation of the orientation to the freshman experience course.

DESIGN

With a target course in mind, we began the process of building our new learning object. Each phase of the project followed the instructional design theory of the ADDIE model: analysis, design, development, implementation, and evaluation (Hanson, 2014). Using this model allowed us to complete our project in a systematic fashion that would ensure the creation of a comprehensive and high-quality learning object.

The entire project from conception to roll-out took 14 months. The Dean of the School of Liberal Arts was consulted, and faculty who taught

Module	Brief Description	Library Concepts Covered	Applied Pyschology Concepts Covered
Introduction	Two student characters (Carlos and Jennifer) are talking about the library and express their thoughts. After some discussion they decide to visit the library together for the first time.	• How to access the library resources • Value of the library	**Help anxiety** • Students will follow Carlos and Jennifer (characters) as they explore the library, learn by overcoming preconceived notions and asking questions. **Financial Literacy** • Students will observe that the library is a free resource and that utilizing their college and public libraries will save them money. **Transitioning into life as a college student** • Students will see the library is valuable place that contributes to their academic success and makes their transition to college life easier.
Space	Characters are in the library and explore a variety of physical objects and spaces.	• Library as a physical space • Space (quiet, collaborative) • Technology • Special learning opportunities (digital footprint, apps, etc.)	**Academic Success Strategies** • Students will participate in an activity that enables them to discover that the library offers individual and collaborative spaces, quiet spaces and technology to support their academic success. **Self actualization** • Students will recognize that the library is a place for extracurricular learning (via special programming offered by librarians).

Figure 26.1 An alignment document demonstrating the connections between the learning object and course material.

the course regularly were asked for their input to ensure the new orientation aligned with the overall objectives of the course. An alignment document was created (see Fig. 26.1) to demonstrate how each element in the learning object mapped to a relevant concept taught in the course.

After these course alignment discussions, we focused on the development of the orientation. Coming into this project, we knew Articulate Storyline 2 would be our e-learning authoring tool of choice. With a goal in mind of making the most engaging and interactive learning object possible, we had recently acquired a license to this software. Many other options were evaluated including Camtasia Studio, Adobe Captivate, Raptivity, and Lectora Inspire. In addition to more comprehensive functionality for developing interactions, Storyline boasts a vibrant online community of instructional designers willing to share their knowledge, give advice, and provide templates. In addition, with a modest learning curve, we were easily able to self-train using video tutorials on Lynda.com, as well as others freely available through the E-Learning Heroes Community (Articulate Global) and YouTube.

Defining concrete goals for this project helped us to convince administrators to deem the library orientation a mandatory component of the SOC 1123 course:

1. Engage users with immersive and interactive content that is easy to use and self-directed.

2. Assure faculty of the orientation's value through alignment with course objectives.
3. Support students and faculty by integrating the orientation in the learning management system (LMS) course shell and enrolling librarians as course builders to provide point-of-need assistance.
4. Provide faculty with grades in a timely manner, so that they can ensure mandatory student completion of the orientation.
5. Solicit qualitative feedback about what students have learned from the orientation and their satisfaction with the learning experience.
6. Ensure the user experience is considered as content is developed.
7. Refresh existing content to reflect the new role of libraries in the 21st century.

The design of the modules was completed in several phases. First, we developed an outline of the entire project. From the outline, we progressed to storyboarding and scripting. We used a simple PowerPoint template and the notes field to sketch out what the narrator and the characters would say during each scene. Over the next 6 months, we met regularly as responsibilities were divided, and we began to build the orientation. While two librarians developed the content, the other librarian increased his knowledge on using Storyline and discovering its interactive capabilities.

DEVELOPMENT

The next phase of the project involved creating supporting screencasts, recording character and narrator audio, taking pictures of our campus libraries, prototyping sketches into scenes, and developing user interactions. As components were being added into Storyline, we turned our attention to aesthetics such as color schemes, font sizes, volume control, animation speed, and overall usability of the learning object. As a digital outline began to form, creative brainstorming sessions led to multiple redesigns of each scene, persistently improving the aesthetics, flow, and interactivity of the learning object. Additionally, requested feedback from key faculty and administrative stakeholders led to the redevelopment or restructuring of various scenes.

To ensure ongoing student engagement throughout the learning experience, we decided to include a minimum of two major activities in each scene where students would be required to interact with the presented content to proceed.

Examples of Interactive Learning Experiences

Understanding the research demonstrating that bite-sized content presentation is most effective for student engagement (Guo, 2013), our goal was to limit the presentation of passive content. Each activity attempts to engage the student in a different way. A user interaction can range from clicking a defined visual hotspot, to hovering over a picture to obtain supporting information, to a scenario-based drag-and-drop activity requiring the application of obtained knowledge. Additionally, in the introduction scene we prompt students for their name then address the student as such throughout the orientation. This proves to add a level of personalization to the experience, as noted by students.

In one activity (see Fig. 26.2), our goal is to introduce students to the types of physical materials available for loan through our campus libraries. A visual is displayed of a bookshelf; each shelf is labeled with a different item type including fiction, nonfiction, audio books, periodicals, and videos. Next to the bookshelf is a visual "pile" of the items, which must be dragged to the correct shelf to proceed. Once a student is finished with the drag-and-drop activity, they are prompted to click on each shelf to obtain more information about that item type.

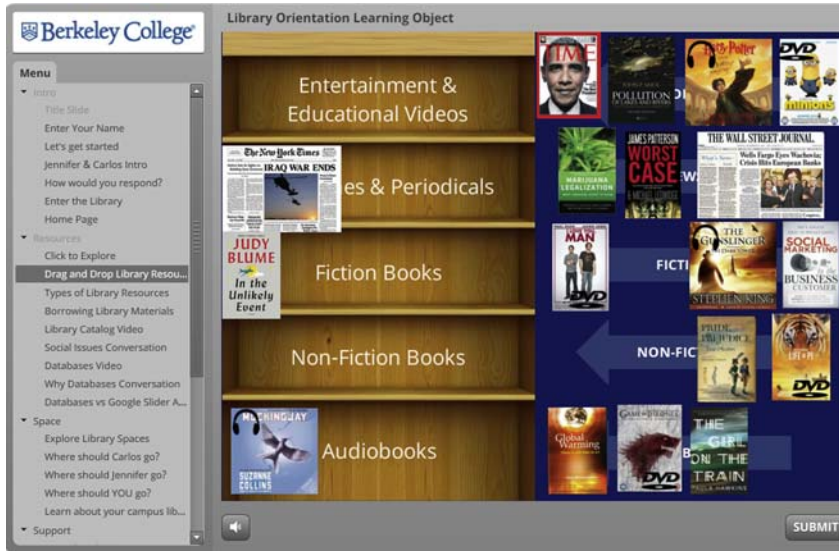


Figure 26.2 A drag-and-drop activity teaching users about the library's collection.

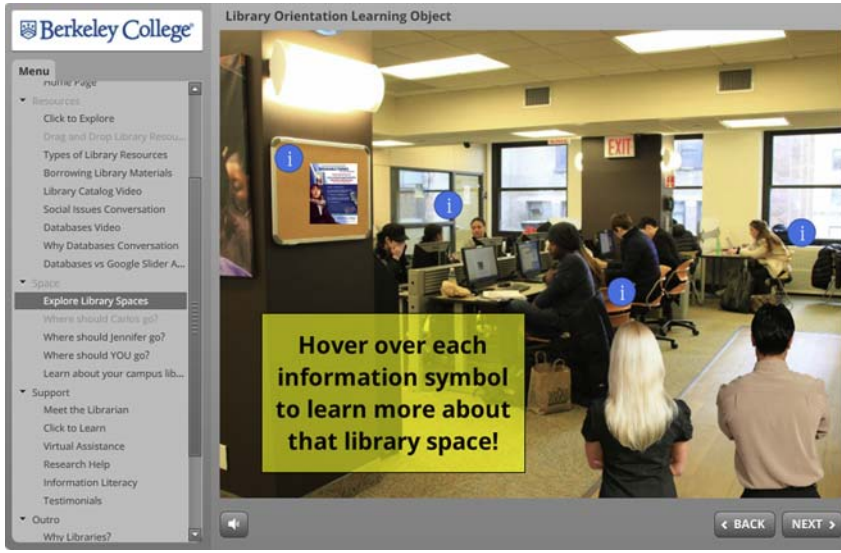


Figure 26.3 A still image of the library with interactive hover opportunities for students to learn about library spaces.

Another activity (see Fig. 26.3) is designed to introduce students to the types of spaces that can be found across our campus libraries. A visual of one of our campus libraries is presented to the students, with icons representing "more information" splashed across the picture identifying spaces such as individual study areas, computer labs, collaborative group project areas, and special library-programming events. As students hover over the icons, additional information is presented about each type of space. After learning about our various library spaces, students are presented with a scenario activity during which they must drag the learning object's characters to the appropriate physical space based on an identified need.

IMPLEMENTATION

The completed library orientation is housed in our LMS, Blackboard. Blackboard offers a "Content Collection" space, where we are able to upload the completed project files and generate a public URL to the finished product. Hosting the orientation in Blackboard allows us to easily integrate the learning object into our online courses, while also allowing us the ability to revise and republish without the help of our Web design team. Most LMSs provide a similar area to host content. Alternatively, there are many free cloud-based storage solutions available, such as Google Drive and Dropbox.

Supporting the new orientation required a new workflow for our librarians. To prepare for this, we developed communication messages, training, and several strategies to ensure a smooth rollout. See a summary of our execution in the table below.

Strategy	How it was executed
Communication and Marketing	• A comprehensive message was developed and sent out to all librarians informing them of the new learning object. • A new workflow was developed for outreach, completion, and reporting.
Librarian/faculty training and support	• Instructions were developed on how to implement the standardized outreach message to faculty and on how to embed the learning object in the learning management system. • Instructions were developed for the students on how to access and complete the orientation.
Rollout	• Standardized outreach messages were sent to faculty from the dean and from the librarians. • A subject alignment document was developed that explained how the learning objectives in the orientation aligned with the learning objectives of the course.

Librarians were excited to support this new effort and faculty members were appreciative that it could be assigned as homework rather than an in-class activity. The Dean of Liberal Arts was very proactive in getting the message out about the new learning object and in an email to other faculty he called the orientation "a very impressive new training tool" and stated that the College was very fortunate to have such "a progressive, creative, and collaborative group of librarians."

EVALUATION AND REFLECTION

One limitation of Storyline is its inability to track assessment data. Although it can integrate with an LMS, the tracked data are limited to a final score and do not include student progress through scenario-based activities. Individualized results cannot be obtained automatically. For this reason, we chose to use a separate Web-based e-form application, EmailMeForm, for our assessment component. At the end of the orientation, students are directed to a 20-question multiple-choice quiz. Individual responses can be viewed, and assessment results can be exported for reporting and sharing.

To ensure student success on the quiz, a note beneath each question advised students where in the orientation they could return to find the answer. Our hope was that students would review the content and develop a true comprehension of library resources, spaces, and support services; our intention was not to penalize students for a poor performance. The quiz contains three open-ended questions. On completion of the quiz, students are provided with an optional survey soliciting feedback about audiovisual quality, relatability of characters, and an opportunity to reflect on the learning experience.

Results of Assessment

The table below provides a summary of how well students are performing on the multiple-choice quiz and the number of students who have taken the orientation. More than 50% of students each semester have completed the feedback survey (Fig. 26.4 and 26.5).

Term	Average quiz score (%)	Percentage of students who completed orientation
Summer 2016	75.8	56% (182 of 324)
Fall 2016	78.3	62% (654 of 1060)
Winter 2017	76.2	57% (323 of 567)
Spring 2017	79.3	53% (219 of 414)

A sample of student comments provides us with feedback that librarians will code for trends:

- "I understand more than before how much the library can help me. I was more [relying on] Google than anything else. Now I can see the difference between the library and Google."
- "Never thought of the library and the librarian as an additional resource tool. I always use to struggling [sic] on my own to find answers, now I know more help is available."
- "This orientation should be offered in every course for every term. I have been an online student for three terms and watching this now makes me wish I saw it when I began. I struggle with research and proper placement of material in a paper. Having this orientation available sooner could have made things easier for me, as well as other students."

Challenges and Successes

One of the greatest challenges remaining is the assessment of the learning object using the EmailMeForm survey tool as a quiz. Because this quiz

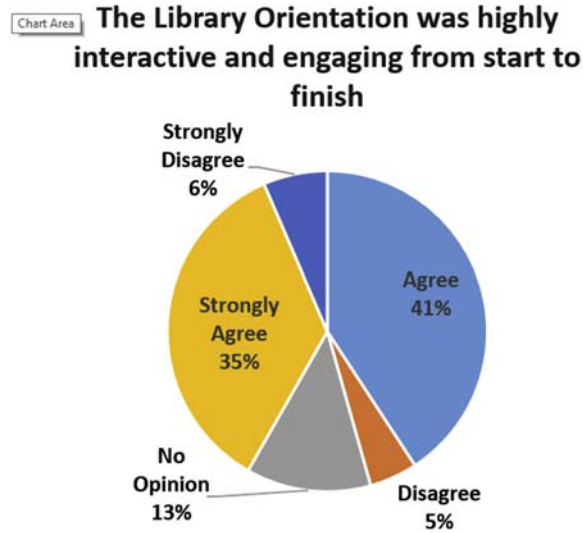


Figure 26.4 The library orientation was highly interactive and engaging from start to finish.

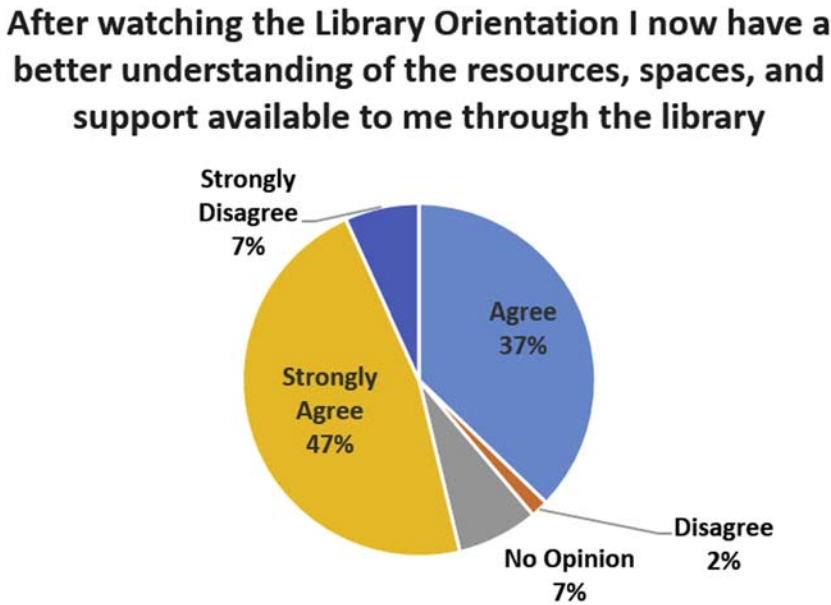


Figure 26.5 After watching the library orientation, I now have a better understanding of the resources, spaces, and support available to me through the library.

cannot be integrated with the Blackboard Grade Center, faculty members need to be sent multiple score reports by the library. Additionally, without this integration, students must self-report both their names and their course sections, leading to potential confusion in score reporting. We detected an approximate 20% error rate, leading to time and energy being devoted to correcting those errors. Finally, data tabulation is limited due to a rudimentary back end in the EmailMeForm platform, so all tables and charts must be created manually in Excel. We are exploring options to integrate with the LMS, so that librarians can access data for assessment and faculty can access student scores immediately in the grade center.

Another limitation of Storyline is the moderate learning curve involved with using the software. Even for a librarian with extensive experience using other e-learning authoring tools, many hours were spent learning the various functionalities before beginning work on this learning object. Once one is experienced with the software, developing interactions and animations can still be time-intensive. Libraries with limited staff resources may struggle to find someone with the time to take this on and may want to consider partnering with their institution's instructional design or faculty support teams.

One of the best features of Storyline is the level of interactivity we were able to create using this tool. The functionality allows developers to create a learning experience that mimics basic video game design. With a basic familiarity with Storyline's states, layers, triggers, and variables, one can create a variety of interactive elements within the learning object's visual components.

Ultimately, our learning object was well received beyond our expectations. We received praise from stakeholders across the college, and feedback demonstrates a much more enjoyable learning experience than the previous orientation. The three authors of the Library Orientation received the Berkeley College Faculty of the Year award for "progressive, creative, and collaborative contributions to student-centered learning." The library orientation was also accepted into the Association of College and Research Libraries' Peer-Reviewed Instructional Materials Online (PRIMO) database of exemplary instructional learning objects.

CONCLUSION

Given our success creating an interactive and engaging learning object using Storyline, the Library will be leveraging this tool for other instructional

projects moving forward. However, given the extraordinary amount of time and effort spent creating something of this magnitude, we will only use it for projects promising wide scale application.

Although the library orientation serves our entire student population, we have found it greatly benefits our population of distance learners. Although onsite students have natural opportunities for dynamic learning experiences, online students are often left with static presentations or screencasts. Adding in this level of interactivity greatly enhances the learning experience for our online student population, and we have seen an increase in online students taking advantage of our virtual reference services and applying for online library cards.

With a year of data now accumulated, we plan to assess both student scores on the quiz and feedback provided via the optional survey. Librarians are currently coding qualitative data provided in the open-ended questions. These data will be shared with the entire Library department to improve library services. We will initiate an annual review process during which we assess the orientation and implement necessary changes to learning activities, audiovisual elements, and other content for accuracy and currency. Doing so will ensure the Library remains at the forefront of pedagogical best practices, and our students are provided with the most meaningful learning experience possible.

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