REACHING FOR THE STARS: BUILDING EFFECTIVE SUBJECT SPECIFIC DIGITAL LEARNING OBJECTS

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BACKGROUND

Face-to-face library instruction has long been a fundamental part of the academic librarian’s teaching role. In-person library instruction can take many forms, including one-shot sessions, workshops, or multiple sessions over the course of a semester. This kind of instruction can also serve a variety of purposes, from helping students find appropriate information for a research assignment to cultivating information literacy skills that can be applied beyond the college classroom.

At the same time, online instruction presents a number of opportunities for instruction librarians who are looking for ways to enhance and complement their teaching in learning environments outside the traditional classroom. It can often be difficult for an instruction librarian to teach a face-to-face instruction session for every class in their assigned subject areas. The inherent flexibility of online library instruction can help mitigate that issue. As with face-to-face instruction, online library instruction can take a multitude of forms. Librarians can embed themselves in a course’s learning management system, teach synchronous instruction sessions to distance learners, and create videos and interactive online learning modules—collectively known as digital learning objects—for both distance education and traditional courses.

Whether digital learning objects are utilized to flip the classroom, teach a higher level information literacy skill, or used in courses where face-to-face library instruction is impossible, digital learning objects can serve a variety of instructional purposes. While many libraries create point of need digital learning objects aimed at general audiences to help students navigate databases and catalogs, developing subject specific online resources is a way to take advantage of the unique opportunities of online instruction.

At J. Murrey Atkins Library at the University of North Carolina at Charlotte, the online learning librarian collaborates with subject liaisons to create digital learning objects for a variety of purposes that can be used across a range of subject disciplines. These learning tools are all designed to be easily embedded in the university’s learning management system and suitable for use across multiple semesters. Additionally, videos and interactive online learning modules designed for subject specific uses are created in such a way that they can be easily updated to incorporate new information and resources.

To date, collaborations between the online learning librarian and subject liaisons have yielded reusable digital learning objects focused on disciplines such as history, business, nursing, and criminal justice. Though there are certainly differences between subject areas, the same strategies and resources are used to design and create subject specific digital learning objects. These best practices are also broadly applicable across academic libraries seeking to create and implement their own digital learning objects for subject specific instruction.

DESIGN TOOLS

There are a number of commercially available products that online instructional designers can use to create videos and interactive online learning modules. Commonly used design software includes Adobe Captivate (https://www.adobe.com/products/captivate.html), Articulate Storyline (https://articulate.com/p/storyline-3), and Elucidat (https://www.elucidat.com). Among the
For the past several years, Atkins Library has used Adobe Captivate to produce digital learning objects. Captivate was selected for a variety of reasons, particularly its number of interactive elements and its ability to produce both videos and interactive online learning modules. The software allows designers to embed interactive elements and assessments that go beyond traditional quiz questions. For example, with Captivate a designer can embed matching activities and hot spot questions into a module. A range of assessment and interaction types means that not every learning object has to work the same way.

**DESIGN PROJECTS**

In the first stages of a digital learning object design project, the online learning librarian meets with the subject liaison to determine the overall goals and objectives of the project. They discuss possible interactive elements and multimedia to be included in the final product. From there, they develop a basic outline of each individual learning object. This serves as the basis for the tutorial or module’s script. In all cases, the audio narration of each learning object is recorded separately from visual aspects of the project. This typically results in higher quality audio and a better paced final product. Storyboards may also be created to help develop visuals and determine pacing. After refining the script, the online learning librarian uses Adobe Captivate to create the final product. This is the longest part of the process as the librarian translates the selected text, audiovisuals, and any interactive elements into a professional, pedagogically sound final product.

Since the library began using Captivate as its digital learning object development tool, the online learning librarian has designed and created a number of learning tools in collaboration with the library’s subject liaisons. Some of these projects have involved the production of video tutorials while others have resulted in more labor intensive interactive online learning modules.

The health sciences librarian identified a need to develop digital learning objects for the university’s registered nurse to Bachelor of Science in Nursing (B.S.N.) program. This program is delivered completely online, meaning that any library instruction would take place in an online learning environment. The online learning librarian and health sciences librarian identified eight skills or concepts that students in the program would need to be familiar with to complete the program’s coursework. They then worked on transferring these skills and concepts to short video tutorials that could be embedded in the learning management system. Introductory tutorials in the series focused on concepts such as defining an academic journal article or explaining the types of resources that can be found in library databases.

Since students in the program frequently use the CINAHL database, these tutorials used examples found in that database. Advanced videos in the series focused on how to search for articles effectively and efficiently. The videos were also designed with proper scaffolding in mind. For example, students would watch an introductory video on keyword searching in CINAHL before progressing to advanced searching and specific functions such as using the APA citation generator or requesting an article through interlibrary loan.

None of the tutorials in the series ran longer than three minutes, and many of the videos were under two minutes in length. In developing scripts for the videos, the online learning librarian and health sciences librarian identified essential information to be included in each tutorial. The goal was for the tutorial videos to be as short as possible while still conveying necessary information to the student.

In collaboration with the history librarian, the online learning librarian developed learning modules to help students find and evaluate both primary and secondary resources. Rather than using generic examples, these modules focused specifically on the sources and databases that history students commonly use in their research projects. This helped history students familiarize themselves with both essential concepts in the discipline while learning about the library resources that they will utilize throughout their college careers.

For example, the module on searching primary sources focused on finding newspaper sources through the ProQuest Historical Newspapers platform. The beginning of the module walks students through the process of developing search terms while elaborating on the specialized vocabulary that is often necessary in searching historical databases. Students are encouraged to create a mind map of possible search terms and synonyms as they complete the module. This helps them develop their own research strategy that can be applied in completing research for their assignments. One of the overall goals of the module was to blend the essential concepts of historical research with the mechanics of searching a particular database.

After digital learning objects are deployed through the university’s learning management system, the online learning librarian and subject liaison can meet to discuss what went right about the project and aspects that can be improved for future
iterations. As Captivate allows for the easy editing and updating of digital learning objects, videos and modules can be updated at any time. This is helpful as changing course content or database interfaces can often make it necessary to update a video or module.

**FUTURE DIRECTIONS**

There are a number of subject specific digital learning object design projects currently in development. As with past projects, these learning objects will be created for a variety of purposes and take on a range of formats. Whether an object should be a video or a more interactive product will be determined by the online learning librarian and individual subject liaisons. The hope is that no matter the underlying learning objectives or delivery mode, these digital learning objects will complement and enhance the library’s instruction program. As the number of courses taught increases, collaborations between the online learning librarian and subject liaisons in designing digital learning objects will help ensure that students will receive some form of library instruction in an increasing number of courses.

The library has also worked with the university’s Center for Teaching and Learning in recent months to develop a customized librarian role within the university’s learning management system. This role will allow librarians to be more deeply embedded in the online components of both distance education and traditional courses. This allows librarians to interact with students in a variety of ways including participating in group discussions and answering questions about assignments. By having the ability to be more present in the learning management system, librarians can increase their engagement with students in all types of courses. This development is important because it could help librarians advocate for the development of more customized subject specific digital learning objects to enhance instruction.

Upcoming projects include a series of videos and interactive learning modules for engineering courses. These digital learning objects will be tied to specific information literacy learning outcomes identified by the engineering subject liaison. The identified outcomes will be connected to the Framework for Information Literacy for Higher Education developed by the Association for College and Research Libraries (2015). Rather than being tied to a single course, these objects will be designed for use in multiple courses throughout the engineering curriculum. Additionally, these learning tools will complement and build upon each other to help develop student information literacy and critical thinking skills as they progress in the discipline. For example, a digital learning object designed for a freshman course might focus on lower level skills such as citation searching while tools designed for higher level courses would highlight higher level concepts related to the analysis and synthesis of information.

Another upcoming project involves an ongoing collaboration between the online learning librarian and the history subject liaison. This series of projects was developed in close collaboration with a professor in the university’s history department. Having faculty involvement with a digital learning object design project can be tremendously helpful in both informing the development of the underlying instructional design and showing other faculty members that collaboration with the library on such projects is a worthwhile endeavor. Like the series of digital learning objects for engineering courses, the online tools produced through this collaboration will be designed for a variety of courses in the discipline. For example, history students are required to write using the Chicago style; the ability to cite sources in this writing style is essential for success as a history student. As such, the project will produce multiple learning modules to help students develop this important skill.

As the university grows, the hope is that the library’s suite of course and subject specific digital learning objects will continue to evolve. While librarians often may not have the ability to teach a face-to-face instruction session in every course, they can take advantage of the opportunities presented by subject specific digital learning objects. Beyond traditional point of need library tutorial videos, subject specific digital learning objects can be tailored and customized to enhance information literacy instruction according to each discipline’s specific needs.

**REFERENCES**