Amanda Nichols Hess

The MAGIC of Web Tutorials: How One Library (Re)Focused its Delivery of Online Learning Objects on Users

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Abstract

Oakland University (OU) Libraries undertook an assessment of how to leverage its resources to make online tutorials more focused on users' needs. A multi-part assessment process reconsidered web tutorials offerings through the lenses of faculty and staff feedback, literature review, and an analysis of other universities' online tutorial offerings. From there, OU's e-Learning and Instructional Technology Librarian developed the MAGIC guidelines (Manageable, Available, Geared at users, Informative, Customizable) to resituate OU Libraries' online tutorials and place users at the center. Putting MAGIC into practice meant integrating web tutorials at points-of-need, identifying and sharing essential information, and engaging students in the learning whenever possible.
Keywords: web tutorials, online learning objects, university libraries, online learning, library services, information literacy

Introduction

Profile of a University: Oakland University

Oakland University (hereafter OU) is a Carnegie-classified doctoral research university in Rochester, Michigan. It has an enrollment of nearly 20,000 students at the graduate and undergraduate levels, and the university's proximity to the automotive industry and flexible educational options have helped it to serve both traditional students and make inroads with non-traditional students. Many OU students work full-time, and a considerable number of students are considered "nontraditional"; 26.6 percent of OU undergraduates are 25 years old or older (Student Profile Fall 2012). The composition of OU's student body has led the university to offer blended and fully online courses as well as blended and fully online programs at the undergraduate and graduate levels. For instance, in the Winter 2013 semester, OU offered 223 class sections (Course Enrollment Summary Winter 2013) and 15 programs (Online Programs 2013) at least partially or completely online.

OU's University Library and Online Learning

OU's University Library serves the institution's student, instructor, and staff populations in part through providing information literacy and research instruction. As the university's online offerings have grown, the University Library has worked to keep pace and stay abreast of current online instructional trends for information literacy instruction. OU's full-time faculty librarians and part-time librarians work with the university's instructors to offer embedded library skills instruction in as many courses as possible; to strengthen these instructional ties, the University Library has recently moved to the liaison librarian format. One way OU's librarians can form and foster meaningful liaison relationships is through developing online learning resources for both instructor and student use to expand their library and research skills.

In the past, the University Library's instructors have looked to provide online learning through self-created online tutorials and learning objects. These resoures have generally focused on instructing students on: library skills (i.e., finding a book); database use (i.e., how to use PsycINFO); and research skills (i.e., how to find scholarly and peer-reviewed articles). OU's librarians have also collaborated on the

development of concept-based learning modules on plagiarism and basic copyright, built in the university's course management system, that include built-in assessment; they have also developed a free-standing, for-credit online course (LIB 250) offered in both fall and winter semesters. Except for these coordinated efforts, though, much of the librarians' work in creating online learning objects for either online *or* face-to-face instructional sessions had been siloed and without an institutional-level plan or any macro-level coordination. This meant there were no standards in format, content, presentation, style, or quality across online learning objects. As the university and the University Library ventured increasingly into online instruction, it became apparent that this needed to change.

While the University Library website offered its users a Tutorials page with all librarian-created online learning objects available (see Figure 1), this web page collated and collected information into categories generated *after* the online learning objects had been created. In fact, the page itself and the categories were developed as a response to somehow organize disparate resources and pieces of information. The groupings did not grow out of user need or use patterns, and had been viewed as a stopgap until a more coordinated, library-wide redesign effort could take place.

Structuring the Redesign

Such an undertaking began in Fall 2012, in coordination between the University Library's Coordinator of Instruction and the eLearning and Instructional Technology Librarian. The central purpose of this initiative was to refocus the University Library's online learning objects on users while making librarians' creation and maintenance of these objects as simple as possible. By focusing on users and making the creation/updating process less daunting, the hope was that these objects could be seamlessly integrated into both online and face-to-face instruction.

Feedback and Direction from Colleagues

When beginning this refocusing process, librarian feedback was essential to charting the course. Through informal conversations at a feedback session, the eLearning and Instructional Technology librarian was able to clearly understand her colleagues' thoughts on, perceptions of, and frustration with the state of the University Library's current web tutorials and online learning objects. Several important ideas came from these conversations that helped direct the process. First, the consensus among librarians was that the current web tutorials offerings were not user-centered. They existed on a separate page that users had to find, and were disconnected from any library instructional course pages. Specifically, librarians commented that the current structure did not allow them to place online learning objects at students' point of need.

There was also near unanimous agreement that the biggest institutional issue with web tutorials involved the labor and maintenance. Librarians had created the online learning resources with a variety of technology tools, from the very labor-intensive and interactive (i.e.. Adobe Captivate) to the free and quick screencapture (i.e., TechSmith's Jing); these tutorials had one thing in common almost regardless of the format: they were difficult (or, in some cases, impossible) to edit after creation. This was either because the tutorial had been created with tools that did not allow

editing after the fact, or because the content was so rich and dynamic that editing proved daunting, time-consuming, and impractical. Furthermore, in some cases, the tools librarians had previously used to create web tutorials had become obsolete, or a newer version with a different interface or features had become available. This changing technology made it difficult for librarians to maintain their learning objects, and provided no incentive for them to create new resources.

Through these conversations, it became clear that a redesign and refocus process, with scaffolding and structure, would be welcomed.

Literature Review

Before undertaking a redesign process, it was important to consider whether such an endeavor was worthwhile at all. That is, do online learning objects such as web tutorials help students learn, and specifically, help students learn information literacy and library-specific skills? Dewald's (1999) seminal study in the field of online learning objects and library learning still holds true: when coupled with sound instructional pedagogy, the unique affordances of the Internet offers learners unique opportunities**.** Beile and Boote (2004) found that library instruction "delivered via web-based tutorials supported students as effectively as face-to-face instruction" (67), and through their research, they asserted that web tutorials provided a viable option for providing library instruction to online courses. In building on Dewald's original research, Su and Kuo (2010) determined that web tutorials could also be used to enhance and complement in-classroom instruction and not solely to deliver content in a standalone fashion. Silver and Nickel (2005) found that many students actually *preferred* online instruction in library skills, and confidence in library skills rose after using web tutorials.

With this foundation of meaningfulness and usefulness established, the next step involves determining best practices for creating, maintaining, and disseminating web tutorials. These resources, at their core, should be user-centered, and take into account *whom* the users will be. Oud (2009), in discussing the ideas of cognitive load theory and chunking, identified ideas that speak broadly to how both librarians and creators of web tutorials can consider learners and learning. By breaking up information into shorter segments focused on a specific idea or topic, Oud presents a way to consider learners and how they will interpret information, rather than focusing on how we want information delivered. Designers of instructional content should also consider their specific audience, though; college students are often a heterogeneous mixture. In examining the differences between 18-year old college freshmen and 24+-year old freshmen, Gold (2005) demonstrated the importance of considering intended audience. The group of older students, who are considered "adult learners," were found to have a higher level of self-direction but lower levels of technology knowledge than the "traditional" college freshmen. And, in their study of Generation Y (students born after 1980), Willis and Thomas (2006) found that today's traditional college students expect the ability to customize their learning experience. These unique generational facets are important to factor in to web tutorial design.

Considering how learners will access and find the information presented is another component of considering the intended audience. Detlor and Lewis (2006) found that many users found it challenging to find content on library websites;

Bowles-Terry, Hensley, and Hinchcliffe (2010) also cited findability as an issue when students seek tutorials. In Bowles-Terry, Hensley, and Hinchcliffe's work, the web tutorials were available within two clicks of the library's website, but students were unable to find them. Gold (2005) identified a variety of barriers to finding these online learning objects, particularly for adult learners; by embedding or displaying this content in the learning context – an online class page or library resource page, for instance – this barrier can be diminished.

As Oud (2009) identified, how information is presented to students is of paramount importance. At the basic level, chunking information into meaningful and manageable pieces can reduce cognitive load (Detlor & Lewis 2006; Oud 2009; Su & Ko 2010; Bowles-Terry, Hensley & Hinchcliffe 2010). Once information has been properly managed and arranged, using interactivity and feedback mechanisms within a web tutorial helps create learning because it allows students to engage in active, meaningful, and personalized learning (Dewald et al. 2000; Silver & Nickel 2005; Reece 2005). When designing and disseminating web tutorials, librarians can build in such personalization by offering alternate representations, either for learning preferences or for disability-related issues (Bowles-Terry, Hensley & Hinchcliffe 2010; Oud 2009).

Whatever the level of personalization, though, the most effective web tutorials focus on the task at hand rather than looking to provide entertainment value (Gold 2005; Bowles-Terry, Hensley & Hinchcliffe 2010). Students are "not going to sit… and watch [web tutorials] if [they] don't need to look up an article. So… just getting the information out there is more important than adding bells and whistles" (Bowles-Terry, Hensley & Hinchcliffe 2010, 24). Attempts at humor or entertainment, then, are less important than clear instructional objectives and consideration of content.

Of the kinds of resources provided for students, Dewald, Scholz-Crate, Booth, and Levine (2000) found that the standalone web tutorial meant to teach or impart a skill was most common. This was the case for the OU University Library's tutorials offerings as well. While this may not be problematic, active learning and interactivity have been demonstrated to create more meaningful and lasting student learning (Dewald, Scholz-Crate & Levine 2000; Lindsay, Cummings, and Johnson 2006; Riley-Huff 2009; Fernandez & Abadi 2011). So, in refocusing, consideration of including interactivity and engaging students in the "problem" at hand (Macklin 2003) rather than just a point-and-click demonstration was important.

Best Practices: MAGIC Principles

Along with the librarian-generated feedback, this research helped develop OU University Library's web tutorials best practices. Using the acronym MAGIC, or Maintainable, Available, Geared at Users, Informative, and Customizable, the librarians agreed to refocus their creation of web tutorials on students' needs and uses of content. These MAGIC principles help to both guide the evaluation of *current* tutorial offerings and scaffold how future web tutorials would be created.

Maintainable

OU's librarians spoke to the need for a process of tutorial creation and evaluation that was maintainable and manageable for them. First and foremost, this

meant outsourcing as many "tool"-based how-to videos as possible. Many of the tutorials available at the University Library's tutorials page fit into this category, and in fact, many of these resources caused librarians issues with maintainability. When a database interface changed, these resources became out-of-date and fell out of use. A simple decision tree was created to aid librarians in determining when to create content and when to use external content (See Figure 2).

When unique online learning objects *were* to be created, there was agreement by all librarians that they needed to be done in ways that regular, periodic reviews could be conducted. The initial agreed-upon plan for such reviews is twice annually, at the beginning of the fall and winter semesters; the collated list of web tutorials, with creator/owner names, ensures that librarians can be easily reminded to review and refresh the content as needed. By focusing on making online learning objects and web tutorials maintainable, OU's librarians can more easily focus on creating and providing content and instruction online.

Available

For OU's University Library, striving to make online content available to students was also of central importance and highly focused on users. By working to make online learning objects and web tutorials available or accessible to students, the librarians are aiming to embed learning content at students' points of need. This does not mean confining these online learning objects or web tutorials to a single, freestanding "tutorials" page as they had been prior to the redesign. Instead, to make content available, it needed to be accessible via multiple avenues and in the various places where student learning occurs. This will vary by course, but it may mean housing a web tutorial within an online course, or embedding an online learning object within a library course page created for a one-shot instructional session. Or, it may involve uploading to, linking to external resources in, or creating a playlist through the University Library's YouTube channel. It also means providing users a single, unified tutorials page on the library website – but, making content available *outside* of this single, siloed option is important as the University Library works to grow and develop its content.

A searchable interface, and the ability to provide users a place to quickly and easily look for web tutorials, is also a key facet of making web tutorials available. OU's librarians spoke to this issue as a central concern, and their comments echoed what Bowles-Terry, Hensley, and Hinchcliffe (2010) found: students are not browsing the library's web tutorials pages, but are looking for a specific set of resources. Therefore, a long, browsable list of online learning objects is not as useful as a single, prominently displayed search box where users can find and display only the information most pertinent to their needs.

Geared at Users

The idea of gearing and focusing web tutorials offerings on users is, of course, at the core of this refocusing initiative. However, naming and expounding upon this idea is important to ensure it *continues* to be a focus. At the most basic level, it means that librarians must actively consider who the intended users of an online learning object will be *before* creating it or using it in an instructional session. Being aware of students' technology capabilities, access to information, background in library instruction, and other factors can help librarians create more responsive and

user-centered learning resources. From the research, and from librarian feedback, it is also clear that, for OU's University Library, focusing on users meant eliminating the fluff, attempts at humor, and unnecessary components in its online learning objects. Again, as the research and OU's librarians have observed, students are not using the web tutorials as Saturday night entertainment. Instead, these resources are used by learners for specific purposes and not considering either learner or purpose obscures the content delivered.

Gearing content for users also means designing information so it can be best accessed and understood by users. This involves chunking information into manageable, logical pieces, either within a tutorial or into individual, brief learning objects. Many of OU's University Library's web tutorials were guilty of being too lengthy. While well intentioned, these longer tutorials failed to hold users' attention. Instead, by focusing a web tutorial or online learning object on a single skill, concept, or idea, and limiting the time to three minutes in length or less, librarians could target more specific needs and aim to give users only the information they required. Shorter, more focused online learning objects demonstrate consideration of both the learner *and* learning objectives.

Informative

Just as chunking information and making content manageable helps OU's librarians to focus on users, it is also an essential component to making web tutorials and online learning objects informative. Using chunking strategies to break up information reduces users' cognitive load and can enable them to better process information presented. For OU's librarians, this means making a series of 1- to 2-minute long web tutorials rather than a single, 10- to 15-minute long web tutorial. This not only makes updating content more manageable (and the process maintainable), but it ensures that users can customize their learning experience.

Informative web tutorials and online learning objects also include simple, but easily overlooked, features. An estimated running or completion time stated at the outset, for instance, can be helpful to users. A list of learning objectives can clearly illustrate the contents of a web tutorial, and can allow users to determine whether the resource meets their needs. Ensuring that this information is shared with users, either within a web tutorial or online learning resource or on a gateway page, can help make OU's library tutorials more informative for a wide range of users.

Customizable

And finally, OU's University Library's web tutorials and online learning objects need to incorporate customizable features and personalization options to best serve users. Customization will vary by online learning object, both in terms of the affordances of a production format and the intended use/audience. It may include offering the same information in different formats; for instance, a script for a how-to video may be offered for learners who would rather read the text. Or, it might involve designing content that is truly customizable and adaptable in nature, with paths of information available for the beginning, intermediate, and advanced learners. Such features can ensure that online learning objects, which are largely self-directed endeavors, can hone and develop learners' knowledge at their ability level.

Whatever the customization features, the overarching idea of customization involves employing universal design for learning. By using features such as closed captioning or transcripting of videos, the OU librarians can work to make the University Library's online learning objects accessible for all learners.

Putting MAGIC into Practice

With these best practices serving as guidelines, OU's librarians redeveloped and restructured the University Library's tutorials page and tutorials offerings. First, the MAGIC guidelines were used to rethink how web tutorials and online learning objects would be provided to students. At the most basic level, librarians agreed to evaluate and assess the current tutorial offerings to determine what resources could be moved into a new interface, what resources needed to be modified or redesigned, and what resources should be scrapped altogether. The eLearning and Instructional Technology Librarian created an evaluation rubric that gave OU's librarians an assessment tool focused on the MAGIC principles (see Figure 3), and while this resource was used to evaluate existing content, it sets standards for the creation of new content in the future.

Next, OU's librarians focused on the content's *availability*. In the interest of making information more available and streamlined, the librarians agreed to use a facet of the University Library's course page creation tool, SubjectsPlus, to host all tutorials. Because SubjectsPlus allows for HTML code, some of the more advanced online learning objects created in Adobe Captivate would have to be redesigned and reconfigured in other ways to bring in the information. Other resources, such as videos housed in YouTube or static web pages, could be more easily brought into SubjectsPlus using simple HTML or the WYSIWYG editing interface.

Hosting all web tutorials in SubjectsPlus also made it easy to pull the data into a freestanding web tutorials page on the library website (see Figure 4). While this might not represent the ideal avenue for user access, this page is an important resource to maintain as the OU librarians work to integrate online learning resources into other tools (e.g. library course pages, online courses in Moodle). This redesigned tutorials page offers a much-simplified interface. Its four features are: a search box, for quick navigation; links to featured tutorials, the University Library's most commonly used resources; links to collections of tutorials grouped by subject area, such as Finding Quality Sources; and a dynamic word cloud that pulls data from tutorials' titles, descriptions, and keywords. Limiting the page to these essential features allowed the important information to be featured prominently and not obscured by other content, and it helped the librarians to continue to focus on the user.

Using SubjectsPlus allowed the University Library to integrate a key feature into the new freestanding tutorials page: a search box. This option was of the utmost importance to OU's librarians because it allowed users to more quickly find online learning objects than a scroll-through list. An informal survey of Michigan's other public universities' library tutorial offerings demonstrated that only three of twelve offered users a search option, so the integration of a search box represented an area in which OU's University Library could exhibit leadership. SubjectsPlus also enabled more seamless integration of library web tutorials into librarian-created course pages, which are created in the same resource. Here, then, the online learning

objects could also become more integrated with student learning rather than only existing in a disconnected and separate space.

Once these decisions had been made, the librarians agreed on basic naming conventions and initial important collections of web tutorials. SubjectsPlus offered librarians the feature of including keywords for each web tutorial created, so the librarians worked to identify and standardize several important words and create guidelines for future keywords. This standardization helps the librarians as they upload and share content, but it also helps users by providing a common vocabulary across web tutorials (see Figure 5). Also, in the University Library's previous tutorials page, tutorials had been forced into groupings and collections. In order to better consider the "big ideas" or central concepts of library information literacy instruction, OU's librarians agreed on seven basic collections: Avoiding Plagiarism, Citing Sources, Finding Full Text, Finding Quality Sources, Improving Your Search, Using Databases, and Using RefWorks (see Figure 6). While these collections are not meant to be exhaustive, they offer a jumping-off point for librarians interested in creating collections of resources while also offering users similar and related content grouped together.

Looking to the Future: Next Steps

While the OU University Library made considerable progress in how it offers and integrates its web tutorials, this project is still in its infancy. The best practices and new user interface are based on professional feedback, literature in the field, and a survey of similar institutions' offerings, but research must be done to assess how OU's students use and respond to this new structure. User focus groups and web page usage data can help to inform what *is* working about the new web tutorials page as well as what *isn't* working. Also, as OU's University Library continues to develop its online presence and works to integrate into students' e-learning experiences, how to accommodate and design online learning objects for mobile platforms is also significant. As the University Library's tutorials develop, maximizing web tutorials for smartphones and tutorials is an area for future development and exploration. And, of course, the OU librarians need to continue the development by continuing to create and develop online learning objects and web tutorials for their liaison areas. But, regardless of the direction of future tutorials efforts, the MAGIC principles can help librarians continue to develop and offer high-quality online content to OU's students, and can help shape the University Library's presence in online learning.

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