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Best Practices for Online Video Tutorials: A study of student preferences and understanding

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BEST PRACTICES FOR ONLINE VIDEO TUTORIALS IN ACADEMIC LIBRARIES

A Study of Student Preferences and Understanding

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ABSTRACT

In order to develop best practices for online video library tutorials, this research study used an interview-based research method to investigate usability, findability, and instructional effectiveness. The findings document student learner preferences and are the basis for guidelines for future tutorial development.

INTRODUCTION

In Fall 2007, the University of Illinois library began creating 2- to 3-minute long instructional videos covering a wide array of basic search and retrieval tasks. Scripts were purposely kept as brief as possible, with the goal of quickly and efficiently meeting the needs of the information-seeking student. Topics included locating a book in the online catalog, requesting materials through interlibrary loan, finding journal articles by topic, locating multimedia materials, and depositing research into the institutional repository. (A full list of tutorials can be viewed at: <http://www.library.illinois.edu/learn/ondemand/index.html>.) These videos are intended to fill a perceived need in cases in which students start their research outside the library but still need assistance beginning library and research tasks. Students may find the video tutorials on their own through the library website, or they may be directed to the tutorials through the Ask-a-Librarian chat/IM/text service. Not meant to address critical thinking skills, these brief tutorials meet students at their point of need when facing a specific library-related research task.

The videos were created using a software combination of Camtasia™ (<http://www.techsmith.com/camtasia.asp>) and Audacity® (<http://audacity.sourceforge.net/>). Although there are several software packages that create screen captures for video, the combination of Camtasia for video editing and Audacity for audio editing met the needs of the library in a financially feasible way. The technology learning curve is not too steep for most librarians, and after becoming familiar with the process, a 2-minute video can be created (from script to final product) in 4 to 6 hours. In general, scripts are written in a two-column format, with images described in one column and

the word-for-word script in the other column. Once the script is prepared, the visual component is created, the audio recorded and edited, and the video produced.

Video tutorials were created to guide students through specific and discrete tasks, as opposed to teaching more complicated skills such as refining search strategies and other critical thinking skills that may be best addressed in the classroom or in a synchronous online environment. Longer web-based tutorials, such as oft-mentioned TILT (<http://tilt.lib.utsystem.edu/>), have been developed by libraries to replace in-person, classroom instruction or to provide very basic instruction while librarians meet the instructional needs of an increasing number of students (Fowler and Dupuis, 2000). Dewald (1999) examined 19 similar library tutorials for their effectiveness, noting that Web-based library tutorials should mirror the best practices of in-person instruction. Librarians have come a long way since the early days of tutorial development in which sound and photos not only took a long time to load on a computer but also took up valuable server space.

In contrast, the brief University of Illinois video tutorials were developed to meet an immediate information need to help students continue their research, whether they are working in the library or elsewhere. Given that undergraduate and graduate students enter the academy with a wide variety of library-related proficiencies, adding point-of-need instructional videos may increase the likelihood that students would succeed in their hunt for library materials and complement the course-integrated instruction programs offered by the library. As Holman (2000) posits, "If librarians are to teach patrons critical thinking skills and evaluation strategies, they may not have the

time or the energy to also teach users the more basic skills of locating materials” (p. X). Recognizing that most students begin their research on the Internet, brief video tutorials can do the “grunt work” of teaching the basic technical skills of using information retrieval systems.

Online video tutorials offer several benefits. The video tutorials provide asynchronous library assistance, and students can view them on own time at any hour of the day, even when the Ask-a-Librarian service is not available. The videos can be viewed as many times as necessary; and, unlike a librarian at the reference desk asked the same question repeatedly, the voice in the video never acquires an air of exhaustion when repeating basic information. This may be particularly helpful for students who wish to learn independently, rather than asking for directions. Closed captioning features can assist students who may be non-native English speakers or who have auditory disabilities. The video tutorials can facilitate a teachable moment, and chat sites and email can recommend them to students to answer basic reference questions. Tutorials can also be embedded in library web-based pathfinders to provide quick instructions on using library tools and services. Videos can potentially be embedded at the point of need within the online catalog or other databases to provide instructions on specific tasks. And finally, videos engage visual and auditory learners, students who learn best through observation and listening, respectively.

Online video tutorials, one must admit, have drawbacks as well. These include the necessity of updating videos as database interfaces and library procedures change. Ensuring that librarians are aware of the location and content of video tutorials can also pose a challenge, particularly in a large,

decentralized library system, such as the one at the University of Illinois. Finally, two questions about online video tutorials initiated this study: Are students finding these instructional videos? And, are students able to perform a specific task after watching a brief video?

LITERATURE REVIEW

This observational study draws inspiration from a nexus of three lines of research: instructional effectiveness, usability testing, and the conceptual framework of being “in the flow” (Dempsey, 2005).

As the line blurs between students who approach the Internet as distance learners and students who prefer online learning, libraries are expanding their instructional reach and effectiveness through the creation of online tutorials. Silver and Nickel (2005) remind us that “librarians that design and administer instruction programs must learn how to best use the classroom and online technologies available to ensure that they complement, not compete with each other” (p. 395). In addition, many, if not most, institutions are seeing a significant increase in distance learning programs. As asserted by the Association for College and Research Libraries (ACRL) Standards for Distance Learning Library Services, the Access Entitlement Principle states that professional standards and guidelines be put in place including “a library user instruction program designed to instill independent and effective information literacy skills while specifically meeting the learner support needs of the distance learning community” (Association for College and Research Libraries, 2008, p. X). Finding a balance between online and classroom learning is an ongoing dilemma for instruction librarians.

Online tutorials vary in their instructional

design as well as their target audience, navigation and design, instructional depth, and user accountability (Holliday, Ericksen, Fagerheim, Morrison & Shrode, 2006). With resources stretched thin, many libraries have turned to computer-assisted instruction as a way to meet increasing instructional demands. Silver and Nickel (2006) state that “online tutorials seem like an obvious solution to meet the growing need for instruction to users in a time when resources are shrinking” (p. 389). Several studies have examined the effectiveness of computer-assisted instruction, comparing learning outcomes and self-efficacy levels between more traditional classroom instruction and online learning modules (Holman, 2000; Beile & Boote, 2004; Reece, 2005; Silver & Nickel, 2005). According to Beile and Boote (2004), “Library instruction delivered via Web-based tutorials supported students as effectively as face-to-face instruction, thus appearing to meet the need for off-campus instruction to information resources” (p. 67). Silver and Nickel (2005) also point out that confidence levels rose significantly among students using online instruction and that more students preferred online learning, evidenced by their selection of online instruction over a classroom learning option. As technology problems with online instruction continue to be resolved and students who are entering the academy have extensive experience with digital technology, students may increasingly choose the flexibility of an online tutorial (Holman, 2000). If this holds true for in-depth, interactive tutorials, would students be receptive to shorter videos that address single tasks? Holman suggests, “Librarians may also want to use the tutorial approach for a general overview of resources and then focus on a subject- or field-specific set of resources for each particular class” (p. 59).

In addition to the learning outcomes and content addressed by in-depth tutorials, there is the underlying question of tutorial *findability* and usefulness. In other words, if librarians build instructional videos, will students not only find them as needed but will they learn and apply specific skills to the task at hand? As noted by Bury and Oud (2005), many studies have addressed usability of library websites, but the authors acknowledge “their usefulness [of application to online tutorials] was limited because of the difference in context” (p. 58). The usability study at Wilfrid Laurier University libraries was performed on a five-module tutorial designed by librarians for first-year students and embedded into the institutional course management system (Bury & Oud, 2005). The researchers focused on navigation, design, layout and presentation of information, interactivity, use of language, content, and assessment of self-test exercises. The findings of the study led to a significant redesign of the tutorial, capitalizing on the “creative ideas [that] surfaced from participating testers” (p. X). As in Bury and Oud’s study, the Wilfrid Laurier University study was designed to elicit from students assessment on the content as well as the *findability* and usability of the videos.

The methodology used by this paper’s authors was similar to a usability study performed at the University of Arizona. That study included a thoughtful set of steps: develop real-life scenarios that require users to perform specific tasks, write a script for consistency between testers, provide compensation for the testers’ time, choose volunteers from the general student population, set up a quiet place in which to conduct the testing, and ask testers to think out loud as they perform the tasks (Dickstein & Mills, 2000). Krug (2006) recommends using a screen recorder during

tests in order to capture the testers' movements. In addition, use of an audio-recording program frees the focus of the researcher from note-taking while simultaneously recording the testers' thought process to be transcribed at a later date. Nielsen (2000) asserts that it is only necessary to test five users, unless a site will be used by several user groups. Ultimately, "As you add more and more users, you learn less and less because you will keep seeing the same things again and again" (Nielsen, 2000, p. X).

Effective and comprehensive library instruction encompasses learning opportunities embedded where library users are working. Lorcan Dempsey reminds librarians to "get in the flow" through two avenues: (1) The library needs to be in the user environment and not expect the users to find their way to the library environment. (2) Integration of library resources should not be seen as an end in itself but as a means to better integration with the user environment, with workflow (Dempsey, 2005). Placing library resources and services so they are naturally encountered at the point of need makes them more likely to be of value to users. Online tutorials can be effectively placed "in the flow" of library users.

METHODOLOGY

Although usability testing of websites and online catalogs is conducted with some regularity at academic libraries, very little has been published regarding assessing online library tutorials for usability and instructional effectiveness. Web usability testing practices and standards, however, can be adapted and applied to testing web-based tutorials. Bury and Oud's study (2005) of the usability of an online tutorial at Wilfrid Laurier University libraries in

combination with the seminal usability texts by Nielsen (2000) and Krug (2006) shaped the testing conducted for this study at University of Illinois. For the purposes of this study, the authors examined not only the usability of brief instructional videos but also investigated whether watching a video tutorial enabled a student to complete the task described in the tutorial.

Study subjects were solicited via printed fliers posted in the library, around campus, via web announcements on the library's homepage (<http://www.library.illinois.edu>), and on the Undergraduate Library's blog. Participants scheduled a 45-minute meeting with an investigator and received a \$15.00 gift certificate to the university bookstore in return for their participation.

To ensure demographic variety, the researchers enlisted 15 students participants. Participants self-reported their class rank, how often they use the library, and what types of research they did the past semester. Table 1 shows the class rank. The researchers reviewed participant comments about how often they use the library and what types of research they had done to ensure that no interviewee was particularly unusual as compared to the data collected in the library's more comprehensive user surveys (<http://www.library.illinois.edu/assessment/libsurv.html>).

TABLE 1 — PARTICIPANT CLASS RANK DEMOGRAPHICS

Class Rank	Number of Participants
Freshman	5
Sophomore	5
Junior	3
Senior	1
Graduate Student	1

Investigators met one-on-one with participants. The investigator interviewed the student's about their library experience and asked each student to complete an unfamiliar, library-related task (e.g., request an article photocopy through interlibrary loan or deposit an item in the institutional repository), an approach referred to by Krug (2006) as “key task testing” (p. X). Students were instructed to think aloud about what they were doing and why as they attempted to complete the task. Screen movements and audio were recorded with Camtasia software. After attempting to complete the task, students viewed an online video tutorial about the task they just attempted then offered general impressions and specific feedback about the instructional video. If students were at first unable to complete the task, they returned to the task after viewing the video to see if the tutorial had prepared them to complete the necessary action. All but one of the students was able to complete the task after viewing the video.

Researchers asked all participants the following scripted questions:

- What are your general impressions of the tutorial? Was it too fast or too slow, too long or too short? Did it have enough information? Too much information?
- Do you think that you, or students like you, would be more likely to use video tutorials like this if they had music or flashier graphics?
- Do you prefer to read instructions or to hear instructions and see a demonstration?

- Would you return to use another tutorial now that you know that the tutorials are available?
- How could this tutorial be more useful?
- Where should tutorials be located or linked? Where would you naturally look for this kind of information?

During the interview sessions, the researcher documented the student's responses and actions. After all the sessions were completed with volunteer participants, the audio recordings were transcribed so that researchers could identify and code themes. While processing the Camtasia audio-video files, one session's data was corrupted; therefore, the final analysis is based on 14 transcripts and 15 sets of notes.

FINDINGS

The findings from the usability study are divided into several categories for consideration and application to other institutions' online instructional materials as emerging best practices. Direct quotes from students are included to provide insight to the users' thought processes.

Length, Pace, and Content

The online video tutorials on the University of Illinois web site are all under three minutes, but many students found the videos too long. Some students mentioned that they would like to skip through some parts of the video to get to the material that was most relevant to them. To accommodate students' varying attention spans, to provide greater navigational ease, and to make skimming the video a possibility, online video tutorials could be broken up into 1-minute (or even

30-second) segments and listed on a table of contents for students to choose the needed segments.

When narrating video tutorials, librarians at the University of Illinois made a conscious effort to speak slowly and clearly. For some students, the pace of the tutorial was too slow. One student said, “The speed would be something more that my parents would need. But as a student, I’d want it to speak a little quicker.” Other students said that the video moved a bit slowly, but they wouldn’t recommend making it any faster. As one student, whose native language is not English, said, “If it would be faster it would be difficult for, especially international students, to be able to understand what the speaker was saying.” This perceptive student made an important point—one speed does not fit all.

Students generally were not interested in the

introductory material that started the video. One student explained, “It took a little while to get to the explanation of how to do it, which is what you’d actually want to know, so I can see getting a little frustrated. You might skip ahead to see when they actually start talking about it.” Another student yawned while watching the 2-minute video, and after viewing the entire video said, “Just tell me where to go, basically, and I can figure out the rest.” Once again, that comment points to the desirability of a video broken into short segments so that students can view just the parts relevant to their information needs. Another important lesson from these comments is the necessity of creating a video in the same way that a newspaper article is written. In journalism this is called the “inverted pyramid” in which the most important information (how to complete the task at hand) comes first and is followed by the contextual information, which the students consistently deemed the



FIGURE 1 — THE ABOVE-PICTURED VIDEO IS 2 MINUTES 33 SECONDS LONG AND HAS A TABLE OF CONTENTS ON THE LEFT THAT LISTS THE TOPICS ADDRESSED IN THE VIDEO.

less important information. This way, the viewer immediately gets what she needs and then may choose to leave the tutorial.

Look and Feel

The tutorials shown to students in this study are simple screen captures with voice narration that demonstrate how to complete various research tasks.

Researchers specifically asked study participants if they would be more likely to use library video tutorials with more entertainment value than the ones currently available at the University of Illinois. Many laughed and said, “No.” One student elaborated, “If you try to make it too fancy, it just gets a little ridiculous. Then people might just watch it to laugh at it. . . If you’re just wanting an explanation of how something works, I don’t think it has to be too flashy.” Another said, “I think you’re going to use them [the tutorials] if you need them. I’m not going to sit here and watch them if I don’t need to look up an article. So, I think just getting the information out is more important than adding bells and whistles.” Although brief opening and closing music and attractive, professional-looking graphics can help to get and keep students’ attention, students view library tutorials in a utilitarian light and want to get the necessary information and move forward with the information-seeking process. Library staff clearly need not spend time and resources creating elaborate or entertaining video tutorials.

Video vs. Text

Not surprisingly, some students prefer to read in order to learn, rather than watch and listen. Preference is mostly a matter of learning style, but it is also related to Internet (previous references to the Internet

were capitalized. Does your journal have a convention?)and computer capabilities. One student said that, while she would prefer to watch a short instructional video, she would not be able to view it on her home computer and would look for text-based instruction instead if she were working at home. Use of video versus text may also depend on the complexity of the task. One student said that for more complex tasks, she would like to have text instructions that she could repeatedly turn back to and review easily, while she would likely choose to watch a short video to learn to do a simpler task. This can be easily accommodated by the library by providing multiple formats for users to choose from according to their learning styles or technology capabilities.

Findability

The University of Illinois library video tutorials are currently two clicks away from the library homepage but had not been discovered by any study participants until they were directed to the videos during this study. The navigation to the tutorials is as follows:

- On the university home page (<http://www.library.illinois.edu/>), click on “LEARN to Use the Library” (<http://www.library.illinois.edu/learn/>) under “Get Help” in the left column.
- On the “LEARN to Use the Library” page, click on “Library Video Network” <http://www.library.illinois.edu/learn/ondemand/index.html>.
- Videos are broken down into five categories: Lightning Learn (short instructional videos), LEARN

More about the Library, Research Tutorials, Database Tutorials, and Using Library Tools.

- Click on the title of a video tutorial to view.

Students did not find the videos independently but were directed by the investigator to the videos. Two distinct actions would improve *findability* of the video tutorials.

Most importantly and not surprisingly, video tutorials should be linked at the point of need. One student said, “It wouldn’t occur to me to go to a page *just* for tutorials. But if I were on a page, say, about the main stacks, and a tutorial was linked to the bottom of that, it would be helpful.” This type of “point of need” or “just in time” instruction means meeting a student’s need for information just when she needs it. Video tutorials have the potential to provide point of need instruction, but first librarians must find out where and when students need

help. Another study (Slater, Hinchliffe, Vess, Fulton, and Leon, 2009) ongoing in the library will help identify these point-of-need locations.

Many of the students agreed that locating the tutorials under the “Get Help” heading was useful and intuitive, but the language “Library Video Network” was not helpful. Hence, participants suggested more descriptive titles and also suggested using a video icon next to the titles of instructional pages to signify that a video on the subject is available.

Krug (2006) specifically warns against using “fancy wording” and explains the way that users read on the web: “Web users tend to act like sharks: They have to keep moving, or they’ll die. We just don’t have time to read any more than necessary” (p. 22). If students took more time to read headings, they might realize that the “Library Video Network” would direct them to tutorials on using library tools, but if they are skimming, as Krug says users are likely

The screenshot shows the University of Illinois at Urbana-Champaign Library homepage. At the top, there is a header with the library name and logo. Below the header, there are several navigation menus. On the left, there are links for 'About Us', 'Services', and 'Get Help'. In the center, there is a search bar with the text 'FIND ARTICLES, BOOKS, JOURNALS, WEB PAGES' and a search input field. Below the search bar, there is a section titled 'HOW DO I...' with several links: 'Find a Specific Article', 'Find Articles by Subject', 'Find an Article Not at Illinois', 'Request a Book Not at Illinois', and 'Cite a Source'. To the right of this section, there is a 'QUICK LINKS' section with links to 'Library Catalog', 'Online Research Resources (Databases)', 'Easy Search (Search Assistant)', 'Journal and Article Locator', and 'Online Reference Collection'. At the bottom, there is a 'Browse by Subject' section and a 'Resources For:' section with links for 'Undergraduates', 'Graduate Students', 'Faculty', 'Alumni', 'Visitors', 'Affiliated Organizations', 'Users with Disabilities', 'Distance Learners', and 'Library Staff'.

FIGURE 2 — ON THE LIBRARY HOME PAGE, THERE ARE LINKS TO “HOW DO I . . .” PAGES. THESE PAGES HAVE VIDEO TUTORIAL COUNTERPARTS THAT COULD BE DESIGNATED BY A SMALL TV ICON.

to do, they may skim over that heading without realizing that it may be useful.

Interest in Using Video Tutorials

None of the study participants were previously aware that video tutorials were available on the library website, and several said that they would probably not be interested in using a video tutorial to learn how to use the library. Those who were not interested in using the tutorials said that they would most likely seek help from a librarian via chat, email, or telephone before spending their time looking for online help because they believed that asking for help would be quicker and easier than finding instructional materials on their own. This finding underscores the importance of ensuring that library staff are aware of the videos and incorporating referrals to them in the Ask-a-Librarian service because some of the detailed processes covered in the tutorials are difficult to explain in a virtual reference exchange.

EMERGING BEST PRACTICES

Based on this usability study, the authors recommend a set of best practices for creating library video tutorials that narrators and tutorial designers do the following:

Pace: Speak slightly more slowly than when they do in regular conversation. Some students will find this speed too slow, but they will adapt. Include captions to meet web accessibility standards for students who are viewing the video without audio and for non-native English speakers whose comprehension is improved when they can both read and listen to instructions.

Length: Keep videos short and to the point. Consider breaking videos into 1-minute or 30-second segments with a table of contents

for quick and easy navigation.

Content: Start the video with the most important and most desirable information, usually the “how to.” Then, once that is explained, provide context and more information on the subject. Give the basics first so that users can navigate away from the video once their vital information needs are met.

Look and Feel: Students do not turn to library video tutorials for entertainment, but for information and instruction. Music can be used to capture students’ attention at the beginning, and graphics should be clean and professional-looking; but most students prefer a simple, straight-forward, informational video.

Video vs. Text: Depending on learning style preference, Internet connection, and complexity of the task at hand, students may choose to view an instructional video tutorial or they may prefer to read instructions on a static, text-based webpage. If possible, tutorial designers should make information available in multiple formats with links to those pages to suit students’ learning styles and information needs. Captioning will also assist with accessibility.

Findability: Link video tutorials at the point of need and use language that students are looking for and understand.

Interest in Using Video Tutorials: Tutorials may not be students’ first choice for getting help and finding information. Many prefer to ask a librarian. When time and resources are limited, investing in instructional video tutorials may not be worthwhile for all institutions; however, for self-directed and distance learners, they can be useful tools and can also be pushed out

via email or chat reference to guide students through research processes in a concise and engaging way.

CONCLUSION

As with any assessment, in addition to sharing the findings in the literature, these findings are now guiding our library's online video tutorial revision and continued development. In addition to editing the existing video, the best practices identified will be incorporated into the internal guidelines for developing video tutorials. That students were not aware of the availability of the tutorials is a concern, and efforts will be made to work with the website advisory committee to better integrate the tutorials throughout the library's website as well as to collaborate with the virtual reference training coordinators to encourage referrals to the tutorials at teachable moments during a chat reference session. Incorporating the videos into the institution's digital repository may also assist with findability and raised awareness of their availability. Finally, for those times when the Ask-a-Librarian service is not available, a more prominent link to the tutorials might provide an alternate form of assistance for patrons with basic questions.

Future research on online video tutorials is needed as this study only begins to lay out the best practices related to instructional effectiveness. Such a study would be akin to that conducted by Lindsay, Cummings, Johnson, and Scales (2007) for more traditional web-based tools. Such a large scale study with students who do not know how to complete certain tasks, which are taught through video tutorials followed by performance-based assessments, would give great insight into how well videos can be used to teach and whether their

effectiveness is restricted to students with particular learning styles and/or specific content, for example, procedural, rather than conceptual.

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