2013 Library Instruction Program Assessment Report: Tutorials Usability Study

This year, CSU Stanislaus library assessment focused on a suite of tutorials that teach the concepts of information literacy and the process of research: *Research Process 101*. The five tutorials are divided into ten modules on the range of information literacy skills: narrowing a research topic to keywords, learning about different kinds of sources, learning how to use library tools to find resources, evaluating Web information, and citing sources to avoid plagiarism. The main intent in creating them was to augment librarian bibliographic instruction sessions or offer online courses a replacement for those in-person sessions. Additionally, the tutorials can form the basis of an online one-credit information literacy course should one be needed, or faculty can direct students to them to support an assignment, or students may serve themselves from the library homepage to find answers to their questions just in time. After their completion in 2012, the next step was to get feedback from targeted users to incorporate their valuable perspective into the improvement cycle. User feedback is important especially to online instruction to determine its effectiveness.

Therefore, with the help of a Faculty Development Grant, a usability study was conducted to inform improvements to the tutorials and suggest how they would best be employed.

Research Questions

- Did students learn? Measure the tutorials' effectiveness by a pre- and post-test.
- How could the tutorials be more effective in terms of relevance, engagement, clarity, length, etc.?
- Where/How should the tutorials be employed?

Methods

A multi-method approach yielding both qualitative and quantitative data was used to address these three questions. A convenience sample of 20 freshmen and transfers was paid to undertake the study. To assess the extent to which students learn from the tutorials, the ProjectSAILS information literacy pre- and post-tests were used. In this design, scores on this pre-test served as baseline data of respondent knowledge of information literacy concepts and skills prior to

completing the tutorials. Then respondents completed one tutorial per week over a five-week period, after which a post-test was administered directly after they completed the fifth module.

In addition, to gain feedback on tutorial effectiveness and design, as well as student learning styles and preferences, an identical survey was administered after each tutorial, with questions asking about that tutorial's effectiveness, design, and engagement. Also, a general survey was administered after all five tutorials were completed that asked questions about the overall design and usefulness of tutorials as a whole. Finally, students participated in focus groups in which they had more opportunities to give feedback and elaborate on their survey answers, especially in response to each other. In these survey and focus group responses, researchers were looking for consensus on design issues as well as suggestions for how best to employ tutorials based on student preferences.

Results and Analysis

Most students did improve their scores from pre- to post-test, affirming that most students learned, though some did not increase their score. However, as a measure of learning through the tutorials, this instrument has validity issues. A larger sample, more incentive to take the test seriously, and a locally designed test would improve validity. See Figure 1.
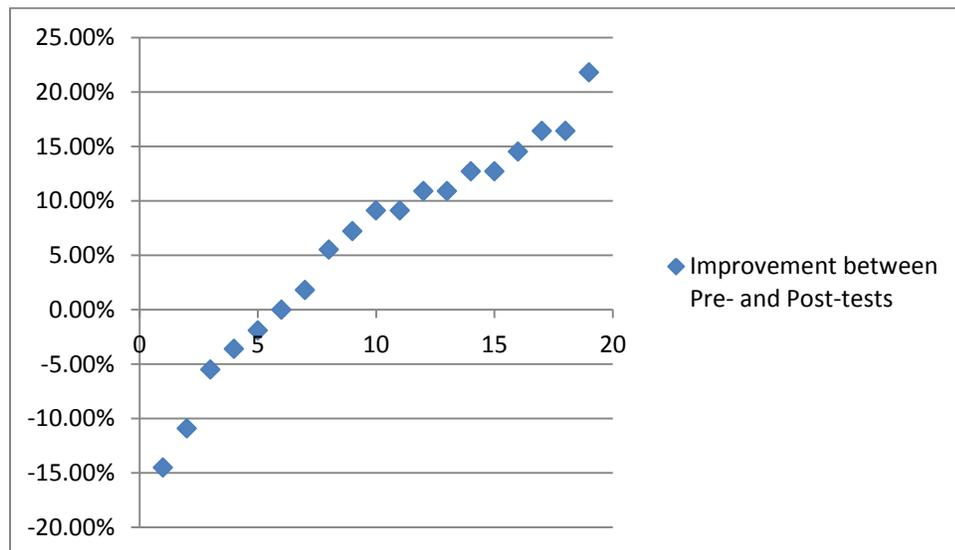

Figure 1: Individual improvement between Pre- and Post-test scores by student arranged from least to most improvement (*n*=19).

From the surveys, researchers synthesized the qualitative (free text) and quantitative (Likert) data, looking for themes that pointed to improvements (the second research question). See Table 1 for individual tutorial survey Likert results and figure 2 for general survey Likert results.

	Tutorial 1: Topic to Keywords	Tutorial 2: Types of information	Tutorial 3: Library Research	Tutorial 4: Web Research	Tutorial 5: Plagiarism & Citing	Question Mean
Useful?	5.00	4.95	4.70	4.80	4.95	4.88
Understanding?	4.90	4.90	4.90	4.60	4.70	4.80
Relevant?	5.00	4.90	4.75	4.65	4.95	4.85
Engaging?	4.05	4.35	4.25	4.35	4.50	4.30
Interactive?	4.35	4.60	4.35	3.95	4.65	4.38
Content Clear?	4.80	4.90	4.70	4.90	4.85	4.83
Right Detail level?	4.60	4.80	4.45	4.80	4.80	4.69
Right Length?	4.70	4.85	3.80	4.65	4.55	4.51
Easy to Recall?	4.30	4.65	4.20	4.65	4.40	4.44
Quiz Helpful?	4.75	4.75	4.65	4.75	4.90	4.76
Right Lang. Level?	5.00	5.00	4.90	4.90	5.00	4.96
Right Speed?	4.30	4.60	4.40	4.55	4.40	4.45
Tutorial Mean	4.65	4.77	4.50	4.63	4.72	

Table 1. Tutorial survey Likert question mean scores (scale of 1-5: 1=disagree, 5=agree) (*n*=20).
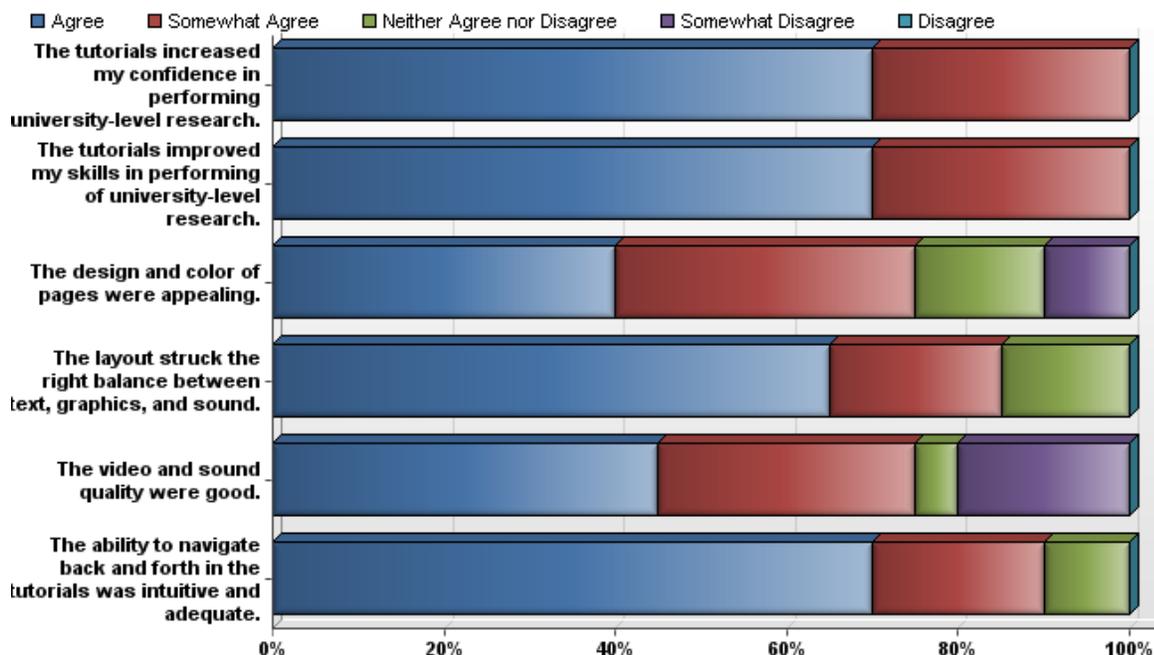
Figure 3: General survey Likert questions

Survey qualitative responses were amplified in focus groups, and both were incorporated into this analysis. Students felt the tutorials were useful, relevant, engaging, interactive, well-paced, clear, and improved their understanding. Students said they would use them again and recommend them to a friend. However, responses led to several improvements. First, sound quality was uneven, causing students to turn up volume in some sections. Part of the problem was solved by synchronizing sound on several of the slides and re-recording others with better sound/voice quality. This will increase engagement. Second, students commented that it was difficult to recall content for quiz questions at the end of the tutorial. Therefore, quiz questions were moved nearer to the tutorial content, rather than the end of the tutorial, to increase active learning and recall. Also some quiz questions were confusing and some quizzes were longer than necessary, so those were revised. Finally, some demonstrations were re-recorded to reflect changes in the library homepage.

Tutorial 3 was thought by many to be too long, unengaging, and difficult to recall for the quizzes. A couple students pointed out concepts were repeated from previous tutorials. Consisting of three parts with multiple demonstrations, this tutorial was also more challenging for designers to make interactive. It essentially models the research process, so it is more

relevant to students with a research assignment in hand. A follow-up study applying the tutorials to students actually conducting research may reveal more about usefulness and engagement, especially for tutorial 3. The present study sample more closely resembled new students needing an orientation to the library, the majority of which felt that tutorial 3 was too long and detailed. To increase appeal for multiple audiences, tutorial 3 could be shortened and separated into several demonstrations by removing the narrative thread that weaves it together. This would meet students' need for brief help just in time. Thus tutorial 3 content can be packaged differently for different audiences, or learning situations: brief tutorials for students to help themselves from the library homepage, and more substantial curriculum to replace or augment librarian-led instruction. In the latter context, the narrative of a students' research story scaffolds learning, and echoing concepts from previous tutorials reinforces them. To enhance tutorial 3 further for research task support, it may be reconfigured with the tutorial in one window and the student's search activity in a second window, though this would require an html platform rather than Captivate screen-capture.

As the discussion above shows, the answer to the research question of how to improve the tutorials is related to the question of how to offer them. Student preference is an important dimension, though a difficult target to hit. Some students are impatient with lengthy and passive instruction, while others appreciate such detail. Some would review tutorials in a new student orientation, or as ungraded supplements to an assignment, while others would not get around to that unless graded. Some learn from watching videos online, though others need a more hands-on experience. Although online curriculum cannot completely cater to all learning preferences, it can be made more active and engaging, such as through multiple modes (text, sound, graphics) and active elements (activities, quizzes, choices), benefiting all learners.

This study also suggests that librarians offer a variety of tutorials for different learning situations. Employing some of these tutorials as orientations could be effective, while others are more useful with an assignment in hand. Even with an assignment in hand, some may be too long to appeal to students seeking answers on their own from the webpage. One of the lessons learned in this study is that different tutorials meet different learning contexts, rather than a "one size fits all" package convenient for librarians.

Perhaps the best use of the tutorials remains to replace or supplement the one-on-one instruction that librarians conduct for faculty. For this context, department faculty, not just students, should be engaged in the conversation of their use and improvement. Tutorials can be challenging to integrate into courses for a variety of reasons. Students in this present study did not prefer supplemental tutorials to be a graded, which is not surprising given their carefully managed workloads. Faculty also have their own priorities, much as they may acknowledge the importance of information literacy for their course. Librarians can support instruction by inserting supplemental, non-graded tutorials into the instructor's Learning Management System (LMS). Librarians can also negotiate a deeper LMS presence, especially in an online-only course, though scalability can become an issue for librarians. If supplemental tutorials are not graded, assessment can help determine usefulness. If graded, the LMS could automate that, rather than create work for the instructor or librarian.

These tutorials have so far been integrated into the freshman courses of several faculty in English Composition. These early adopters can be tapped to explore assigning the tutorials in conjunction with a librarian-led session (flipping the instruction). Also, more promotion of the tutorials as an option for information literacy instruction from librarians will probably be necessary to expand their use.

Conclusions

Overall results showed that the tutorials do help students learn. They are useful, engaging, increase confidence and give students choices. Several improvements have been implemented based on student suggestions.

There was not always consensus from students on what they prefer, and the differences seemed to hinge not only on learning style but the context in which they are used. These contexts should influence tutorial design and deployment. As more students serve themselves through the library homepage and more classes go online or hybrid, librarians' traditional instruction should change to fit these new learning contexts and appeal to diverse learning styles. Studying students' needs and building relationships with faculty will help librarians serve them in today's instructional environment. For instructional librarians, learning to use online production tools and

maintaining and assessing these digital learning objects is time-consuming, though it improves their support of student research and faculty instruction.

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