

Usability Evaluation of a Website Designed to Guide and Support Best Practices for Online Teachers

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Abstract: Instructional and technical support is important for university faculty who teach online classes. A website was developed to provide instruction and resources for faculty who either teach or plan to teach online. The purpose of this study was to evaluate the content and organization of the site through a formative usability evaluation. Usability participants navigated the site to complete five scenarios that the target audience might encounter. Feedback was largely positive, but recommendations for improving the content and organization of the site are discussed, and are apply to other entities that support online teachers.

Introduction

An abundance of resources exist on the web regarding online teaching, yet these sites frequently leave much to be desired in terms of content and/or design. Online teaching has been in place long enough that researchers can cite specific and consistent lists of principles and best practices in online education. To name a few, Paloff and Pratt (2007) stress the importance of a sense of community in online classes. Ragan (2005) echoes this sentiment and adds the need for having clearly defined expectations for both teacher and student, to which other researchers agree (Graham, C., Cagiltay, K., Lim, B.-R., Craner, J. & Duffy, T.M., 2001). Synchronous time should be used judiciously (Van Duzer, 2002).

There is not so much disagreement about what constitutes a good online course as there is a lack of cohesion between the disparate lists. For the novice as well as the experienced online teacher, searching the web for information about how to start or improve an online course can be overwhelming. Even if a site does have good content, the user may not be able to see past poor navigation and design. A website was created for university faculty who teach or plan to teach online. The purpose of this study was to evaluate the content and organization of the site through a formative usability evaluation.

Background

The Western Association of Schools and Colleges (WASC) provides the accreditation standards by which the University of Hawaii (UH) complies. WASC adopted the “Guidelines for the Evaluation of Distance Education (On-line Learning)” which indicate that professional development opportunities should be provided to prepare faculty to successfully teach in the online medium, and that adequate technical support is also

available to online teachers (Council of Regional Accrediting Commissions [C-RAC], 2009). Technology & Distance Programs (TDP) provides this kind of technical and instructional support to over 200 faculty in the College of Education (COE) at UH.

In order to evaluate TDP services, two surveys were given within COE, one for current COE faculty and the other for recent COE graduates. The surveys asked faculty and students about their experience with COE programs and classes, what was working and what could be improved. A qualitative analysis of the data revealed a gap between online teaching best practices and what students were experiencing in online classes. It should be noted that the majority of responses were positive and satisfactory within the College. This paper addresses one specific area for improvement: support for online teaching.

Students reported feeling alone in their online classes, and complained that synchronous time could be better spent. Faculty thought they could be doing a better job at teaching online, and they also felt their students had technical knowledge and skills that they themselves were lacking and needed. Faculty feedback is supported by the literature which has identified several principles of effective online teaching. Those unique as well as overlapping principles have been compiled below in Table 1.

Table 1

Principles of Effective Online Classes

Description	Implementation Examples	Citations
Course material, activities and assessments align with objectives.	Use the discussion board for brief posts when you are not seeking in-depth knowledge by students.	(Bloom, 1956; Gagne, 2005)
There is judicious use of synchronous time by instructor.	Limit synchronous meetings. Record lectures for individual viewing. Require oral participation in synchronous classes.	(Van Duzer, 2002)
A sense of community is present.	Provide prompt feedback. Use icebreakers, group discussion and group work to help students engage in the content and with each other.	(Graham, et al., 2001; LaRose, 2000; Paloff & Pratt, 2007; Vesely, Bloom & Sherlock, 2007)
Learning styles and UDL (Universal Design for Learning) guidelines are applied to the course.	Allow students to submit work in a variety of formats instead of always through text. Use a variety of content: text, pictures and video.	(Center for Applied Special Technology, 2008; Graham, et al., 2001; Van Duzer, 2002)
There are clearly-defined expectations.	Provide good models of prior student work.	(Ragan, 2005; Van Duzer, 2002)
Course is consistent and content is well-organized.	Make assignments due on the same day each week.	(Ragan, 2005; Van Duzer, 2002)
Student-centered learning is the focus, as opposed to instructor being seen as keeper of all knowledge.	Let students answer each other and comment on each other's discussion posts instead of the instructor.	(Paloff & Pratt, 2007)
Time-management strategies are used.	Record and re-use content from one semester to the next.	(Ragan, 2005)
Teachers and students know how to get help.	Provide students with the number for technical support.	(C-RAC, 2009)

TDP teaches a one-credit, face-to-face course entitled Skills for Distance Students. This course is technical in nature, and prepares students who are embarking in an online degree program. Based on the survey data mentioned above and the format of Skills for Distance Students, TDP adapted that course to create a two-day professional development workshop offered to departments within COE called Skills for Distance Instructors. The two days of the workshop are held one week apart.

Skills for Distance Instructors incorporates both the technical skills that the students receive as well as the principles of effective online classes listed in Table 1. The two-day workshop covers a large amount of information that participants will need to refer back to at a later date when they are solving a specific problem. Additionally, the workshop information needs to be available to faculty who are unable to attend the workshop in person. Solving these two problems led to the creation of the website discussed in this study, Resources for Online Teachers.

Description

The website entitled Resources for Online Teachers, created with Google sites for easier editing, can be found at <https://sites.google.com/a/hawaii.edu/online-teaching> (Figure 1). The site was developed to provide instruction and resources for faculty who either teach or plan to teach online. The target audience of the site is professional adults who have an interest in online teaching. The site needs a wide range of appeal, from people with little or no experience teaching online to those who have extensive experience teaching online. It functions as both an online stand-alone resource for online teaching, as well as a supplement to the face-to-face Skills for Distance Instructors workshop. Furthermore, the site is free and open content available as a community service.

Figure 1. Homepage of Resources for Online Teachers



The three main content areas of the site cover planning an online course, teaching and facilitating an online course while it is in session and web 2.0 tools. Regardless of previous online teaching experience, visitors to the site can get concrete suggestions, how-tos and step-by-step instruction about different areas in online teaching. Faculty can learn how to implement the principles of effective online classes discussed previously. In-depth education is provided about how to best use discussion boards, synchronous class time and creating alternatives to lectures. Visitors can learn more about the pedagogy or theory of online teaching, as well as be inspired by exploring the web 2.0 tools, links, or other open content resources to supplement their course.

The site was designed to complement the main COE website at <http://coe.hawaii.edu/>. The COE website is not only designed well with faculty and other stakeholders familiar with its features and services, which can help with stakeholder buy-in. While color schemes and the layout were adopted from this model, Steve Krug's *Don't Make Me Think: A Common Sense Approach to Web Usability* (2005) was consulted as a resource to help create content within the site that was visually engaging, and that also motivated users to explore further.

Methods

A formative usability evaluation, also called a usability test, was conducted on the website to evaluate the content and organization of the site. Three COE faculty members agreed to participate in the usability testing. Participants had been targeted based on their varying levels of online teaching experience and were initially contacted via email. One participant had no experience teaching online, another had some experience teaching online through a hybrid class, and the third participant has spent well over a decade researching about and teaching online.

One-hour appointments were made with each participant for a usability test that would be conducted in their own office. The same laptop was used by each participant since the screen-recording software Camtasia was already installed, and to reduce the amount of variables. Camtasia was used to record the screen and audio during the usability testing for later review. Participants were asked to complete a consent form so that they could be recorded, and then they filled out an information sheet that asked about their prior experience with online teaching.

Much of the usability testing procedures were taken from Steve Krug's well-known usability book *Rocket Surgery Made Easy* (2009) and its accompanying website, as well as other usability tests (Chang, Wong, Cheng & Huang, 2009). Participants were given identical instructions to review website with open, objective responses. Their responses were recorded with Camtasia which captured a video of the screen and each participant's movements with the mouse, as well as the participant and administrator's verbal commentary. Participants were asked what strikes them about the site, whose site it is and who the site seemed to serve.

Five scenarios were created that asked participants to complete certain tasks on the website (Appendix A). Each participant completed the scenarios in a random order. The scenarios were specifically designed to address the needs of the target audience. The five scenarios

related to the perspective of users with different levels of experience with online teaching who needed various types of content within the site. Although Krug (2005) states that “there is no average user” (p. 136), repeating the same scenarios of each participant would highlight obvious and common usability issues.

While the participant navigated the site to complete the scenario, the test administrator asked him or her to think out loud and explain why they chose certain links and buttons, whether what they clicked on was what they expected, and if it satisfied the scenario. After the scenarios were completed, each participant was asked seven more general questions about the content and organization of the site. The administrator made a note of the top three usability concerns that arose during each usability test. The three Camtasia recordings were broken down into a list of all suggestions and usability issues (nearly 100 suggestions in total) that came up during each usability test, and duplicate suggestions were eliminated.

Results

Feedback from the usability testing was clear. Faculty want more interactivity, more information about web 2.0 tools, and clearer, more consistent navigation. A list of the top usability issues can be found in Appendix B.

Each participant wanted more interactivity in the site. Specifically, all three participants wanted the ability to read and make posts about time-saving techniques in online teaching. Users also said that they want a live person to contact for help, whether it is just an email address they can write to, or a form they can fill out for a help request.

Regarding navigation, tabs in the horizontal menu bar need to be renamed and possibly reorganized. The names of some tabs like “Online Teaching Guide” and “21st Century Course Planning” do not instantly resonate with users. One common piece of feedback was that the site seemed to “loop”. Different links on the site take you to the same landing page. This is confusing for users. Users want to feel that a new link, tab or page would lead them to new information not already visited on the site. When this does not occur, users are confused at the breadth of the site.

The faculty participants wanted to add technology that seemed to be missing from the list of web 2.0 tools on the site, such as e-textbooks. The current site mentions web 2.0 and other instructional technologies like recording lectures and creating videos, but felt that specific directions on how to use the technology is only provided for some of these items. Participants not only wanted more technical support on the site for themselves and their students, they want to know the pedagogical value and potential of some of these tools.

Discussion

A formative usability evaluation was the ideal method to evaluate the content and organization of the site. Seventeen items currently fill the list of top usability issues, but only the most pressing problems will attempt to be resolved in this phase of the site’s development in the Krug (2009) spirit of doing “the least we can do” (p. 145). Otherwise, the site is professional, full of excellent content and reaches all levels of online teaching

experience within the target audience. In the future, Google Analytics could be used to track this site's use patterns as a supplement to usability testing.

Although participants said that they wanted a forum to be able to see and share personal experiences, without a larger pool of self-selected participants an active forum is very unlikely (Resnick, Janney, Buis & Richardson, 2010). The idea, however, of people learning from other's experiences was common and needs to be addressed within the site.

Regrettably, one of the main usability problems in the site is the same problem that led TDP to create this one-stop website in the first place: good resources from different locations are not easily culled into one comprehensive site of best practices. For example, the video on the home page requires three clicks to play it *and* retain permission from the copyright owner. While copy/pasting and citing is a way around some of these problems, it is currently considered poor netiquette to do so, and linking directly to the source is acceptable netiquette. Using iframes so that those websites seamlessly open up within the main website is another possibility. These are supplements that enhance the site while the main content has proven to provide a solid source of best practices for online teachers.

Conclusion

More and more university faculty are being asked to teach online. In further development of the site, a third audience will be considered. This audience consists of teachers of courses that are designed by Distance Course Design and Consulting (DCDC), the business arm of TDP. DCDC designs online courses which are then handed over to online teachers. These teachers come from various departments at UH that may or may not have online teaching support. DCDC helps these teachers feel prepared to teach these high-quality online courses and who would also have this Resources for Online Teachers site to supplement and improve their skills.

There is an obvious need for not simply online degree options, but online degree options that are evaluated as effective by both students and administrators. Although many factors affect the success of online programs, Technology & Distance Programs focuses on training College of Education students and faculty on technology and best practices in online teaching so that the technology is transparent and the educational quality of courses continues to be the main focus.

References

- Bloom, B. S. & Krathwohl, D. R. (1956). *Taxonomy of educational objectives: The classification of educational goals, by a committee of college and university examiners. Handbook 1: Cognitive domain*. New York, NY: Longmans.
- Center for Applied Special Technology. (2008). *Universal design for learning guidelines version 1.0*. Wakefield, MA: Author.
- Chang, C. S., Wong, W. T., Cheng Y. C. & Huang, Y. P. (2009). Usability evaluation in an exploratory design-based research approach of convenience store new employee

- training e-Learning material. *Pervasive Computing (JCPC), 2009 Joint Conferences*, 687 – 692. doi: 10.1109/JCPC.2009.5420096
- Council of Regional Accrediting Commissions. (2009) *Guidelines for the Evaluation of Distance Education (On-line Learning)*. Retrieved from www.wascsenior.org/
- Gagne, R. M., Wager, W. W., Golas, K. C. & Keller, J. M. (2005). Defining performance objectives. In *Principles of Instructional Design* (pp. 132 – 150). Belmont, CA: Wadsworth.
- Graham, C., Cagiltay, K., Lim, B.-R., Craner, J. & Duffy, T. M. (2001). Seven principles of effective teaching: A practical lens for evaluating online courses. *The Technology Source*. Retrieved from <http://ts.mivu.org/default.asp?show=article&id=839>
- Krug, S. (2005). *Don't make me think: A common sense guide to web usability* (2nd ed.). Berkeley, CA: New Riders Press.
- Krug, S. (2009) *Rocket surgery made easy: The do-it-yourself guide to finding and fixing usability problems*. Berkeley, CA: New Riders Press.
- LaRose, R. & Whitten, P. (2000) Re-thinking instructional immediacy for web courses: A social cognitive exploration. *Communication Education*, 49(4), 320 – 338. doi: 10.1080/03634520009379221
- Paloff, R. M. & Pratt, K. (2007). *Building online learning communities* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Ragan, L. (2005). 10 principles of effective online teaching: Best practices in distance education. Christopher Hill, Ed. *Distance Education Report*. Madison, WI: Magna.
- Resnick, P.J., Janney, A.W., Buis, L.R. & Richardson, C.R. (2010). Adding an online community to an internet-mediated walking program. Part 2: Strategies for encouraging community participation. *Journal of Medical Internet Research*, 12(4). Retrieved from <http://www.jmir.org/2010/4/e72/>
- Van Duzer, J. (2002) Instructional design tips for online learning. Retrieved from www.csuchico.edu/celt/roi
- Vesely, P., Bloom, L., & Sherlock, J. (2007). Key elements of building online community: Comparing faculty and student perceptions. *MERLOT Journal of Online Learning and Teaching*, 3(3). Retrieved from <http://jolt.merlot.org/vol3no3/vesely.pdf>

Appendix A: Scenarios

Number	Title	Scenario
1	Improve your online teaching	You have taught online in the past and you like teaching online. Things are going good but you think it could be better. Show me on this website where you could go to get more instruction or new ideas about how to improve your online teaching experience?
2	Facilitate an existing course	You are going to teach an already-existing online course where the content has been standardized by the department, and is provided for you. You still have to create a syllabus and teach the course. Show me on this website where you would go to get help with planning how the course will run when the content is already provided.
3	Teach your first online course	You have never taught online. Show me where you would go on this site to get help with setting up and teaching your very first online class.
4	Improve your online teaching	Last semester you taught an online course that did not go very well. Students said that they felt alone in the course. On top of that, you spent hours working, but don't feel like enough real learning occurred in that class. Show me on this site where you could go to get advice about how to address these problems so next semester goes better.
5	Locate tech support	Your students are having trouble signing in to Elluminate (a virtual classroom where your class can meet together online), and you need some help with the gradebook in Laulima. Show me on this site where you would go to get help for your students with Elluminate, and where you would go to get help with Laulima for yourself.

Appendix B: Top Usability Issues

1. Flesh out the FAQ
2. Remove Best Practices since it functions as a “Quick Links”. The redundancy is confusing.
3. Add a drop-down menu to the Online Teaching Guide and consider changing the name – it’s not clear to users what it is
4. Change the name of 21st Century Course Planning, or consider eliminating the tab and putting that information on the home page and titling it 21st C...
5. Add a commenting ability on the ideas page for time-saving strategies or that other place where teachers were hoping to find personal examples
6. Close the big space on the home page
7. Make it more apparent that they can contact TDP for help with any of this. Perhaps a request sheet?
8. Put how long the videos are, status bar if possible
9. Make sure none of the pages are under “Best Practices” because it’s kind of confusing in terms of navigation
10. Possibly change the video image on the home page to gray instead of red so it doesn’t stand out so much. Make the links bigger on the home page. Make it clear where I want them to focus on.
11. Add tech support’s contact info to the Elluminate page
12. Create a landing page or hover info for each major tab, explaining what they can get from that section
13. Change the tab color for the horizontal menu to be that light green when you’re on the page, not just when you’re looking at it
14. All links need to open the same way (sometimes it’s w/in the same tab, sometimes new tab)
15. Video page to be put up
16. On the Building Community page, add a link to something like “Learn How to create a video like this”
17. Check all links to make sure they work