Usability testing to improve a teaching website for graduate counselor education students

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Improving a Counselor Education Web Site through Usability Testing:

The *Bibliotherapy Education Project* ©

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Abstract

Technology proficiency expectations have proliferated in counselor education. Yet, limited information in the counseling literature details how to effectively evaluate or refine online resources from a design/utility standpoint. This description of a small-scale usability study demonstrates a cost-effective strategy for improving counselor education Web sites. Counselor education students completed specific tasks related to the target Web site’s purpose and functionality. Error and completion rates were tracked. Process comments were recorded. Combined qualitative and quantitative results clearly indicated what worked and what did not, allowing the Web site designers to prioritize needed changes in content organization, format/graphics, and workflow.
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Certification and accreditation guidelines in the counseling profession mandate the integration of technology into educational and practice settings (American Counseling Association, ACA, 2005; Council for Accreditation of Counseling and Related Educational Programs, CACREP, 2009). As Internet use increases among the general population, counselors must be able to comfortably and competently incorporate Web-based resources as adjuncts to counseling and to effectively guide clients in the appropriate use of online mental health and career development information (Greene, Lawson, & Getz, 2005; Zalaquett & Osborn, 2007).

Online counseling-related resources and services have proliferated, with many being created by university counseling centers, professional organizations, and individual practitioners (Gilles-Thomas, 2003; Kalb, 2001; Perez, 2006; Sampson et al., 2003).

In counselor education, the growing utilization of distance approaches to professional preparation and development makes it only logical that curriculum and other teaching resources be made available via the Internet. Clark and Stone (2002) pointed out that online assignments can provide pedagogical value at several levels for traditional (i.e., on campus) counselor education programs as well. Quinn, Hohenshil, and Fortune (2002) asserted that “All of the core curriculum areas required by CACREP are being affected by the use of technology” (Discussion section, ¶ 9). Several authors have recommended approaches for integrating technology into counselor education curriculum (Baggerly, 2002; Clark & Stone, 2002).

In their survey of current practitioners, Greene, Lawson, and Getz (2005) discovered that, although counselors generally acknowledge the impact of the Internet on their clients and on the counseling profession, few of them actively use or include discussion of online tools and
resources within their practices. Experts estimated that over 90% of common counselor tasks, in all aspects of their work, would involve some kind of computer related technology by 2008 (Cabaniss, 2002). It is widely recognized that an essential role of counselor educators is to help prepare future professionals by incorporating Internet-based assignments throughout the curriculum, and by building critical evaluation skills to help choose and use the best resources (Gale & McKee, 2002; Osborn & Zalaquett, 2005; Zalaquett & Osborn, 2007). In a review of multicultural counseling Web sites, Maddux, Torres-Rivera, Smaby, and Cummings (2005) found that the number of poor quality sites was a function of the dramatic increase in available information related to multicultural counseling. The same is likely true for online resources representing other aspects of counseling and mental health. Thus the ability to “separate the wheat from the chaff” by critically evaluating Web resources is a crucial skill set for emerging counseling professionals.

Several studies have identified the observation of users interacting with a Web site and soliciting feedback from these users (both essential components of usability testing) as key steps in the design and assessment of online resources. For example, Sampson et al. recommended conducting “usability testing (observation) during Web site development to make appropriate adjustments” in the design process (Table 1). Perez (2006) employed surveys and a collaborative “development problem solving methodology” in the design of their counseling center Web site. Barratt (2001) outlined an informal process of assessing user-computer interactions as one means of evaluating student services Web sites. Zalaquett and Osborn (2007) informally noted that the users of their career information site reported that it was easy to use, as evidenced by comments about straightforward navigation, a “consistent look,” and logically sequenced content – all key aspects of good usability. Finally, Ciavarelli (2003) emphasized that usability testing is critical in
the overall assessment of the quality of online instruction. In spite of this clear emphasis on technology in counselor education and practice, and the acknowledged value of usability testing as a design and assessment approach, no studies were found that actually employed formal usability testing to design, evaluate or refine counseling-related or counselor education Web sites.

The purpose of this article is to describe the Bibliotherapy Education Project © (BEP) Web site and to report findings of an initial usability test of this site. The Web site was developed to support a teaching module on bibliotherapy (the therapeutic use of literature), one of a suite of creative counseling interventions. Usability testing is a cost-effective method for achieving valid and valuable feedback on the design and refinement of Web-based resources (Krug, 2007; Nielsen, 2002). The ability to effectively evaluate and use online educational resources is now considered an essential skill in counseling and, therefore, in counselor education (Greene, Lawson, & Getz, 2005). Our description of the BEP Web site and its initial usability test can serve to encourage counselors and counselor educators to take a more rigorous and informed approach to building or evaluating Web sites relevant to their professional practice.

Usability Testing in Web Site Development

In a broad sense, usability testing of any product should determine whether the target user can achieve the intended purpose for the product efficiently and effectively (Krug, 2006). When evaluating Web sites, usability testing involves observing the human-computer interaction in a controlled setting, with the primary goal being to determine the site’s clarity of purpose for the user and ease of navigation. Although the user reacts to the text, images, and other information on the Web site, usability testing is not intended to ascertain the accuracy of that information. Accuracy of content should certainly be a key consideration when a user evaluates any source of
information; however, this is not the focus when assessing usability. For example, a Web site might (inadvertently) report inaccurate statistics about the occurrence of an event. However, if a user could clearly identify the site’s purpose and easily locate information sought (accurate or not), the Web site would still be “usable.” Again, the purpose of usability testing is to determine how a Web site’s design promotes ease of use and clarity of purpose (Goto & Cotler, 2002; Krug, 2006; Nielsen, 2000; Nielsen & Loranger, 2006). This is done by asking one user at a time to interact with a Web site and “either (a) figure out what it is, or (b) try to use it to do a typical task” (Krug, 2006, p. 133).

Hornbaek (2006) suggested that most usability studies examine at least three aspects of human-computer interaction: effectiveness, efficiency, and/or satisfaction. Typical goals of usability testing include measuring the time to complete tasks, accuracy of user response, overall success, and user satisfaction (U.S. Department of Health and Human Services, n.d.). Data may be gathered through various methods including direct observation, Web tracking software, questionnaires, interviews, and audio and/or video recording. The typical outcome is a set of recommendations intended to improve a Web site’s clarity of purpose and ease of use.

Optimally, usability testing is carried out before a Web site is launched and then periodically throughout the design and implementation process (Krug, 2006; Nielsen, 2002). Kim, Brock, Orkand, and Astion (2001) described usability testing as an iterative process, where user feedback influences modifications which are then retested. Krug pointed out that the initial usability test would uncover major usability issues such as a user not being able to find a link to important information or having difficulty finding the subsequent step in a process. Once these initial problems are fixed, different issues, previously overshadowed by the larger problems, may emerge in successive tests. Hence, testing early and often is more valuable than testing
extensively. Nielsen, arguably one of the world’s leading researchers in usability testing, mathematically demonstrated that a single user will reveal a third of the design issues, and five users will reliably uncover 80% of the usability problems. He stated that “Elaborate usability tests are a waste of resources. The best results come from testing no more than 5 users and running as many small tests as you can afford” (Nielsen, 2000, ¶ 1).

Background of the Bibliotherapy Education Project © Web Site

The Bibliotherapy Education Project © (BEP) formally began in 1999 as a teaching collaboration between two faculty members, one from the Libraries program and one from the Counselor Education program at Oregon State University (OSU). Our teaching collaboration evolved into a research partnership based on shared experiences, values, and ideas. We believed that an informed and skillful use of imaginative literature (i.e., fictional as opposed to self-help or factual materials) could provide a powerful addition to a counselor’s toolkit for creative counseling and we were both committed to preparing graduate counseling students for competent and ethical practice of bibliotherapy.

Initial work to guide students in the evaluation of books and other written materials for use within counseling contexts began in 1997. We then conducted in 1999 an extensive review of counseling, mental health, library, and education literature, and also solicited clinician input to develop a more formalized set of questions. Categories for evaluation incorporated subject, format, age appropriateness, quality of illustrations, developmental level, and diversity representation (e.g., characters representing different ethnic groups or of varying abilities). The resulting tool provided a structure for evaluating any type of written material, for example a picture book on anger management such as No David (Shannon, 1998) or a young adult novel that addressed the situational issue of divorce, such as Sahara Special (Codell, 2003). Originally
created as a paper and pencil form, the Bibliotherapy Evaluation Tool © (BET) underwent multiple revisions based on feedback from counseling students, faculty, and practicing counselors over the next several years. The BET is now part of the BEP Web site and evaluations created using the BET populate the searchable database found on the BEP Web site. The tool is available to those who register to become an evaluator for the BEP Web site.

As part of a bibliotherapy teaching module taught every year in a Counseling Theories and Techniques class, graduate students were guided through the book evaluation process. We decided to create a database of the students’ book evaluations; ideally, each subsequent group of graduate counseling students in the teaching module would continue to evaluate books and add them to the database, creating an ever growing resource for use by future students. A Web-accessible database seemed the next logical step to make these book evaluations available, and reaching this goal is well underway. To date, over 400 book titles and over 2,000 evaluations are contained within the database. Although the evaluation tool and accompanying Web site are ultimately intended to provide useful information regarding bibliotherapy with all ages, the majority of evaluations and resources are focused on children’s and young adult literature.

Although competent technology users, we do not have backgrounds in technology development, and we were therefore challenged by the process of developing the Web site to support the evaluation tool and database. We obtained two small teaching improvement grants to hire the necessary expertise and to move the project forward. By 2003, the project had evolved into a multi-faceted Web site: http://www.library.unlv.edu/faculty/research/bibliotherapy/. This surprisingly complex undertaking of developing and launching the Web site, detailed elsewhere (see McMillen, 2005), eventually involved students and interns from computer science, graphic
design, library science, education, and counseling, as well as the legal counsel from the university and the state attorney general’s office.

The BEP Web site has three main functions. First, it is designed to teach counselors about the practice of bibliotherapy, generally defined as the use of books in therapeutic contexts. A second important goal is to build a database of evaluated materials (e.g., books, poetry, and stories) that will be widely accessible to those interested in using bibliotherapy. Third, the site provides additional resources related to bibliotherapy; these include links to book recommendation sites, article and book citations, conference presentations, teaching materials, and related research.

The BEP Web site was designed and has served primarily as a teaching resource. Greater explanation of its use in graduate counselor education curriculum is therefore warranted. In the bibliotherapy teaching module, students are introduced to the topic of bibliotherapy, its history, the various modes of implementation, the psychotherapeutic mechanisms, ethics and cautions for use, and the research supporting effectiveness. This is done through a combination of a PowerPoint presentation (linked on the Web site) along with a demonstration of the online evaluation tool. Links to assigned reading and other informational resources, housed on the Web site, are also highlighted. Students are assigned to use the BET to complete two additional book evaluations and submit them to the BEP Web site database. The assessment of the bibliotherapy teaching module, using a pre- and post-test addressing students’ knowledge about bibliotherapy and their comfort using bibliotherapy as a therapeutic intervention, has been described in an earlier work (Pehrsson & McMillen, 2005). In the context of the bibliotherapy teaching module, the BEP Web site has continued to serve as a valuable information and teaching resource for graduate courses in Theories and Techniques of Counseling, taught regularly as core curriculum.
The resources on the Web site lend themselves to incorporating the topic of bibliotherapy into a variety of other counseling-related coursework such as multicultural counseling, social justice, child and adolescent techniques, and creative arts in counseling. Once the BEP Web site was created and the database made available, access was no longer limited to students at the developing institution. In one month alone (February 2008), Web site tracking statistics show the site was accessed by users in 39 countries outside the United States. As of February 2009, those who have registered to be evaluators for the site come from 45 states and 23 countries outside the United States. We have been contacted by faculty in other counseling programs, and permission has been granted to use the Web site and evaluation tool; student evaluations from these classes, as well as individual evaluators, are reviewed by one of us before being added to the database.

The project has been maintained largely through the efforts of a few dedicated individuals in the Library Technology Department, first at OSU and now at the University of Nevada Las Vegas. There has never been sufficient funding for more than small revisions and minor technical problem solving. However, in 2006, we were contacted by a person who had recently earned her Ph.D. in instructional technology and was interested in obtaining a postdoctoral fellowship. Her particular interest was bibliotherapy and she came to OSU for six months to work on the BEP, even though there was no funding for a stipend. With such an eager and knowledgeable volunteer researcher at hand, it seemed an opportune time to undertake an evaluation of the Web site that could guide and focus improvements in design and utility. Still limited by funding constraints, we undertook what Web site consultant Steve Krug (2007) describes as “lost our lease, going-out-of-business-sale usability testing” (Chap. 9).

Method

Population
Participants were recruited from the first-year graduate students enrolled in the CACREP-accredited Counselor Education program at Oregon State University by the librarian researcher, not by the counselor education researcher. Our intent in using this line of communication was to minimize possible student concerns regarding their grades in the counselor education program related to participation decisions. Krug (2007) indicated that participants need not be familiar with the Web site to be viable subjects for usability testing; they do need basic Web navigation skills. We targeted this population because the tool and Web site were originally designed to be part of a learning module in a graduate counseling course, Advanced Theories and Techniques. Also, given the lack of financial resources to compensate participants, these students were the likeliest group to volunteer without financial incentives, simply because they were professionally interested and motivated to learn more about bibliotherapy. After obtaining Institutional Review Board approval, invitations were sent by e-mail and a hard copy distributed to student mailboxes (N=50). The invitation specifically solicited participants who had no prior experience with the BEP or the related Web site.

The first five volunteers were each scheduled for a 90-minute session. Krug (2006, 2007) and Nielsen (2000, 2002) have emphasized that personal observation of a small number of participants is a valid and low cost method of gathering data for usability studies, and that more than five user observations does not provide significant additional information. All participants were female and between the ages of 25 and 55; four identified themselves as Caucasian and one as Native American/Chicana. Additional volunteers were added to a list of alternates; however, all original participants completed the study.

*Procedures*
Testing took place in person in a small conference room at the university library in order to permit direct observation of participants’ interactions with the BEP Web site. The room was furnished with an Internet-enabled laptop computer on which the BEP Web site was set as the default homepage. For each session, the individual participant was greeted by the library researcher and then met the Project’s postdoctoral fellow; these two individuals served as the observer/note takers in the room. Each participant was given an Informed Consent form to read and sign before proceeding any further. The session was introduced following a script adapted from the one available on Krug’s (2007) Web site; the wording emphasized that the focus would be on testing the site, not the participant. Participants were instructed to verbalize their thought process as they addressed a list of tasks. This “think aloud” protocol is common to usability studies and enhances the observational information recorded (Kim et al., 2001; Krug, 2006). Participants were also told that they should approach the Web site as if they were working on their own, that is, the observer/note takers were available to clarify the nature of the tasks; however, they would wait until the end of the session before answering questions about the BEP or Web site. Participants were advised that they would be asked to move to the next task in the list after 10 minutes even if the task was not finished. This was to ensure that each session did not exceed the time limits stipulated in the recruitment materials and informed consent.

Ten tasks had been created to address the categories recommended by Krug (2006): “Get it testing,” that is, do they understand the purpose of the site; and “key task testing [which asks] the user to do something, then watching how well they do” (italics added; p.144). Tasks included an initial open-ended question, recommended in Krug’s (2007) online sample script, regarding participant perceptions of the Web site’s purpose and general first impressions. Participants were then asked to locate specific kinds of information and to perform these key tasks:
1. Briefly describe what you think this Web site is about.

2. Locate a book on a subject of interest to you.

3. Locate a book by a favorite children’s or young adult author.

4. Find at least two sources for locating additional books.

5. Describe briefly how this project got started.

6. Register as a reviewer for the Web site.

7. Begin evaluating this book (choice of picture books provided).

8. Find the explanation and definitions for “General Format / Structure” or another evaluation category in the Bibliotherapy Evaluation Tool.

9. Identify the people responsible for the content of this page.

10. Briefly describe at least one research project that has been generated by the Bibliotherapy Education Project.

At the end of each session, participants were informally asked for their final impressions.

Results

The library researcher and the postdoctoral fellow recorded, in writing, all participants’ actions and comments as they worked through the set of 10 tasks. This process allowed the collection of both performance and process measures. Research on usability testing has shown that, when used to inform Web site redesign, performance measures (e.g., error and success rates) are most suitable for improving effectiveness (i.e., reducing the number of errors) whereas process measures (e.g., time to complete and think aloud protocols) improve efficiency (i.e., time taken to complete tasks successfully; Hornbaek, 2006; Kelkar et al., 2005). A likely explanation for this distinction is that “raw performance data [such as error rates]...informs [sic] a designer...
where problems might occur but provides no information about what exactly is happening and why” (italics added; Kelkar et al., 2005, p. 14).

**Time to Complete Task**

Within each testing session, the exact time it took participants to successfully complete a task was not recorded, although this is a process measure employed in some usability tests. In designing the study, the speed with which users completed the task was of minimal interest; rather the focus was on how easily and accurately the participants could identify needed information on the site. We believed this approach was most consistent with the emphasis on evaluating the Web site, rather than participant performance. Introducing a timekeeping aspect runs the risk of increasing participant anxiety about performance. In retrospect this might have added a useful dimension to our evaluation of how easy (or difficult) it was to locate relevant information. Therefore, subsequent usability studies for this Web site will seek to include a more precise yet unobtrusive measure of the time required to complete tasks.

Although participants were informed of the 10-minute limit for each task, this was primarily to keep the length of the session within the timeframe specified in the informed consent. In only one case did a participant approach or actually exceed the 10-minute limit. In that case, the participant was working on Task # 7 (to begin evaluating a book using the online tool) and asked to be allowed to complete the evaluation of the book. The librarian researcher conducting the session agreed to her request, with the understanding that the session might consequently exceed the time limits originally stipulated in the informed consent. The participant was still able to complete all the tasks in less than the designated 90-minute timeframe.

**Completion Rates**
With the exception of Item #1, which asked participants to view the BEP Web site homepage and briefly describe its purpose, all other test items required the participant to locate information or complete a task. A task was considered successfully completed if the participant was able to locate the information or complete the task without intervention from the observer/note takers (Barratt, 2001). Completion rates were computed as the number of participants who successfully completed the task divided by the total number of participants (N=5). Item #2 directed participants to locate a book on a subject of interest. None of the participants successfully located the subject search link without observer/note takers’ assistance, a clear indication of a design problem. For item #4, two participants used other functions on the Web site to locate books in the Web site’s database rather than using a navigational link to outside book recommendation sites, suggesting the task itself was not sufficiently clear.

The one “failure” on item #5 came from a participant who verbally indicated a lack of fluency with Web use, and who generally required more time to locate hypertext links on the site than did the other four participants. This participant did find the necessary information after being assured by the observer/note takers that it was available on the Web site, but it was considered a failure due to observer/note taker intervention. On item #7, this same less experienced participant also could not locate the link to initiate the review process. Such an inexperienced user is likely to have some difficulty navigating even the best designed Web site. Both the poorer completion rate and higher number of errors on item #8, however, indicate that links to supplemental information were not visually salient. Because more than one participant exhibited difficulty with task completion, the faults are more likely with the design of the Web site itself.

_Error Rates_
For the purposes of this usability test, error rate was defined as a user going to an incorrect link before completing the task successfully or not completing the task successfully (e.g., not locating a particular piece of information). Hence, an error could occur even if the participant eventually completed the task. Errors were based on actual observed performance rather than on verbalizations of thought processes. Again, with the exception of the first item, the number of errors was tabulated for each task.

The most errors occurred for item #2 (mean = 2.2) which asked participants to locate a book related to a particular subject of interest. An error was counted if they did not choose the link that gave them access to searching the database by subject. This is actually a conservative error rate, because it quickly became apparent that the link to the subject search option was not obvious. For all participants, the librarian researcher eventually pointed participants to the correct navigational link so they could complete the task.

The second highest rate of errors (mean = 1.4) occurred for item #4 which asked participants to “find at least two sources for locating additional books.” Success on this task would mean choosing the link on the navigation menu, “Resources for Books,” which connected to a list of book recommendation sites. The link label was apparently not as clear as we initially believed.

The third significant source of errors (mean = 1.2) was item #7, “Begin evaluating this book…” The participants found screen placement and font size of the links to initiate the book evaluation process were not obvious. Several tasks had a mean error rate of less than one and were easily completed by participants (items #3, #5, #6, #8). On two items (#9 and #10) participants made no errors.

Qualitative Responses
Although no explicit satisfaction or ease of use ratings were included in the study, these dimensions were indirectly evaluated through recording and analysis of participant feedback. Participants who responded to item #1 generally found the purpose of the Web site to be easily determined. Perceptions of ease of use included the unanimously positive comments about the constant navigation bar, which appears on the left side of all screens on the Web site. This result is consistent with the findings in other usability studies that users prefer a constant navigational indicator on all pages of a Web site (Kim et al., 2001).

The “think aloud” comments made by participants during each session, as well as observations of participant behaviors by the observer/note takers during the testing sessions, were analyzed for general themes. Three themes emerged: graphics and visual presentation, organization of textual content, and workflow (i.e., how to move through various Web site processes). Graphics issues included participants’ stated preference for increased text size overall and greater visual salience of active links. Feedback received from several participants suggested that a Web site supporting a creative therapeutic intervention should have more visual “playfulness.” Appearance-wise, we wanted to balance such user perceptions with the overall goal to provide a high quality professional resource. Content concerns were fairly limited, and included a suggestion to separate the guidelines for using bibliotherapy from procedural information on how to evaluate books. Several participants suggested that the site provide information in numbered lists or bulleted format, which would be quicker to read than paragraphs; this issue includes elements of content organization and graphic presentation. Some terminology used in the Web site (e.g., “protagonist”) was unfamiliar to the majority of users and they suggested words that made more sense to them (e.g., “main character”). Workflow problems identified included offering multiple choice points for initiating the book evaluations
(instead of just one path), and the somewhat circuitous process of getting from the user registration form to the book evaluation tool.

**Discussion**

An advantage of any usability testing is that it typically provides valuable information that can help Web site developers improve their product. With greater resources, the amount of information gathered could be increased and refined. Screen capture software is available that records the sequence of mouse clicks and screen shots of user-computer interactions. Specific usability testing software such as Morae™, for example, claims that the product will “Record user interaction with a Web site or application, including desktop activity, audio, camera video and a complete chronicle of system events, all synchronized into a single file” ([http://www.techsmith.com/morae.asp](http://www.techsmith.com/morae.asp)). Other options for capturing and sharing more detailed information would be to videotape sessions for later review or to utilize a testing room that had a one-way mirror, allowing more observers to view the sessions in progress. These procedures understandably raise the requirements for institutional review, data security, and informed consent as well as for additional equipment and resources. Speed of task completion was not our primary concern in the usability testing of the BEP Web site; however, we plan to investigate unobtrusive procedures in future usability testing in order to determine task completion time as another measure of process.

Although participants appeared to represent somewhat varying skill levels for navigating the Internet, they were consistent in the problems they identified. Previous experience using the BEP Web site as a teaching tool in a graduate counseling curriculum had obscured some of the problems revealed in our usability testing. Krug (2006) humorously compared usability testing to hosting out of town guests:
Inevitably, as you make the tourist rounds with them, you see things about your home town that you usually don’t notice because you’re so used to them. And at the same time, you realize that a lot of things that you take for granted aren’t obvious to everybody. (p. 134)

To illustrate this point, when teaching graduate counseling students about bibliotherapy as a therapeutic intervention and about using the Bibliotherapy Evaluation Tool to help inform their selection of therapeutic materials, we typically walk students through the registration and evaluation processes on the BEP Web site. The problems with linking to the evaluation tool, encountered by the usability testing participants who were encountering the site on their own, had never surfaced in these direct teaching contexts. Given the expanding use of the BEP Web site beyond the academic institution where it was developed, it has become increasingly important to determine how well this site works when there is no facilitator to mediate the learning, processes, and tools. Sampson and colleagues (2003) emphasized that Web site design issues are especially critical in the self-help arena.

Several of the issues identified by participants in our usability testing revolved around not being able to “see” links to additional information or next process steps. The usability study by Kim et al. (2001) similarly found that “subtle visual cues are likely to go undetected when an interface demands that a user recognize embedded text [and] navigational features…” (p. 603). They recommend enlarging or otherwise enhancing the visibility of text, through distinct and consistent colors for certain types of navigation or content themes.

Usability experts suggest that all significant problems in any given usability study are typically identified by the first three participants (Krug, 2007; Nielsen, 2000). Consistent with such usability research, the issues that emerged in our study – content organization, graphics and
workflow – were all identified by the first three participants, thus supporting the legitimacy of this small-scale approach. Although unique and helpful comments were offered by all five participants, testing only three likely would have provided sufficient information to make a first round of refinements. As Krug noted, once the most obvious problems are addressed, new issues will surface, that simply would not have been found in initial usability tests. Because funding was limited, we reviewed and prioritized the problems identified by the volunteer participants. Several of these issues have already been addressed, such as changing terminology to more closely match user expectations and reformatting information from paragraphs to bulleted lists. Further changes included creating additional web pages and some programming changes to simplify and clarify workflow. Long-range plans are to enlist the services of a graphics consultant to make the Web site more visually appealing.

Implications and Future Directions

One of the major implications of the work described here is that valuable information, which can improve the functionality of Web sites designed to support counselor education, can be obtained from small-scale and low-cost usability tests. Obviously the earlier that such usability tests are implemented in the design and development process, the easier it is to modify problematic aspects of a site. Even the most informal usability tests with a handful of individuals who are not involved in site development can offer insights into what works and what does not work. Our next step is to conduct another round of usability tests to identify additional issues beyond those of initial Web site design.

As the focus of and access to the BEP Web site expands beyond counselors to other groups of helpers, future directions for development will include redesigning the site to address specialized users’ needs. This might include creating specific pages and customized tools within
the site for different groups (Sampson et al., 2003). Feedback from presentation attendees at conferences as well as from students in teacher education classes suggests that public librarians and teachers would be interested in learning more about the effective and ethical uses of non-clinical (i.e., developmental) bibliotherapy. Librarians can also potentially use the database to assist counselors and other mental health practitioners in their communities in locating appropriate books for clinical bibliotherapy use with their clients.
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