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Fostering Counseling Students' Career Information Literacy Through a Comprehensive Career Web Site

Carlos P. Zalaquett & Debra S. Osborn

Abstract

Counseling students need to become knowledgeable about existing online career development tools to provide effective career development services today. The authors describe the characteristics of a Web site developed to foster career information literacy among students taking graduate career courses and examine its academic usefulness. Student evaluations suggest that the Web site is useful in promoting career information literacy and knowledge. Students who used the Web site showed a significant gain in perceived self-knowledge as well as in actual knowledge of career information. Ways of using the career Web site to improve students' knowledge of online career resources are explored.

Career development is a major component of most master's degree programs in counseling. To effectively help individuals with career decisions, counselors need to be aware of and comfortable with on-line career development tools and career information. Today, career counseling students must be able to access career information from a variety of sources, analyze and evaluate this information, and integrate it to construct a knowledge base from which to make informed decisions. Current ways of delivering career information, which include computer- and online-based systems such as the O*NET (onetcenter.org) and the online *Occupational Outlook Handbook* (Murray, 2003; Stevens & Lundberg, 1998), create a need for counselor educators to train students to acquire technical competencies, learn how to use technology effectively, and become career information literate. In this article, we describe a Web site that has been developed to foster career information literacy, review its academic usefulness, and discuss ways in which it can be used in career courses.

Creating a Comprehensive Career Web Site to Foster Career Information Literacy

The need to help students continually advance their computer literacy, competencies, and knowledge led the Association for Counselor Education and Supervision (ACES) and the National Career Development Association (NCDA) to promote the use of computers and the Internet in career guidance and counseling (ACES/NCDA, 2000, p. 11). Both organizations asserted that technology should be used in various ways to teach students how to evaluate and use information systems in career counseling (p. 8). "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (American Library Association, 1989, ¶ 3).

Traditional research papers (e.g., based on printed books and articles) and traditional library skills (e.g., use of a library's catalogs and indexes of printed documents) are therefore not

sufficient to achieve information literacy. To describe the required knowledge base of students at the completion of their counseling education program, the ACES (1999) Technology Interest Network developed the *Technical Competencies for Counselor Education Students: Recommended Guidelines for Program Development*. Included among these competencies are the ability to use technology to develop Web pages, group presentations, letters, and reports; to use e-mail; to help clients search for information about careers, employment opportunities, and educational and training opportunities via the Internet; and to evaluate the quality of Internet information. These objectives have also been endorsed by the American Counseling Association (Kuo & Srebalus, 2003), and the NCDA (1997) stated that “it is mandatory that the career counseling profession gain experience with this medium and evaluate its effectiveness through targeted research” (Need for Research and Review section).

The Internet and its subsystem, the World Wide Web, have contributed substantially to the dissemination of career information (Karper, Robinson, & Casado, 2005; Kuo & Srebalus, 2003). Google searches conducted by the authors in January 2006 using *career* and *U.S.*, as well as *university career center* and *U.S.*, produced 1,100,000,000 links and 82,700 links, respectively, to career-related Web pages in the United States. The rapid increase in the number and availability of career Internet-based Web sites has been accompanied by a diversification of ways to use the Internet (Gati, Kleiman, Saka, & Zakai, 2002; Kuo & Srebalus, 2003; Sampson, 1999). Most sites that present career information also provide self-assessment tools and recommendations for résumé writing and interviews (Hohenshill & Brott, 2002). Internet-based career information has also been embraced by academic programs in counseling (Karper et al., 2005), especially among those specializing in career counseling (Clark & Stone, 2002; Kuo & Srebalus, 2003).

For these reasons, the authors created a comprehensive career Web site at a large public university (Osborn & Zalaquett, 2003). We believed that the Web site could be an academically useful tool by providing students with current career information, exposure to online career development resources (e.g., career search engines), and additional course assignments (e.g., conducting Web site searches, evaluating career Web sites).

The Career Resources Page

The Career Resource Web Page (CRWP; <http://careerresource.coedu.usf.edu>) is an instructor-created Web site that provides organized career information. The overall purpose of the Web site, consistent with the American Counseling Association (2005), ACES (1999), National Board for Certified Counselors (2005), and NCDA (1997) guidelines, is to provide a venue for the exploration, learning, and research of online career resources. The resources on the CRWP were selected because they cover career aspects such as self-assessment, occupational characteristics, job descriptions, résumé writing, interviewing techniques, and how to search for available jobs—all of which are critical components in the development of career information literacy. The CRWP contains an index page with links to four main Web pages that link to information regarding (a) self-assessment, (b) career searches, (c) career information, and (d) job preparation. The Self-Assessment section contains descriptions and links to Web sites that offer various types of assessments on the areas of values, interests, and abilities. Examples of Web sites include Self-Directed Search, The Career Key, and O*NET.

The Career Searches section provides descriptions and links to Web sites that provide assistance locating jobs. Examples of such Web sites include USAJOBS, Wet Feet, and Monster.com. In addition, this section provides links to Web sites offering specialized searches to assist ethnic minorities, women, individuals with disabilities, and older adults. Examples of

sites include iMinorities.com, Black-Collegian, Native Career Magazine, Saludos.com, and AdvancingWomen.com. The Career Information section presents information and links to Web sites offering salary information, job titles, statistics, handbooks, and dictionaries. Examples include JobGenie, Salary.com, and the *Occupational Outlook Handbook*. This section also includes information about professional organizations such as NCDA. Finally, the Job Preparation section offers information about Web sites developed to help individuals prepare résumés and vitae as well as get ready for job interviews. Also, Web sites offering advice and help in career planning, such as CareerPerfect.com, Career Planning- Suite 101.com, JobWeb, and HeadHunter.net, are included. Because of its potential academic usefulness, the CRWP was one of the educational tools used in the delivery of the master's-level career development course of the counseling education program at the authors' university. The goals of the CRWP are to (a) provide career information, (b) expose students to online career development resources (e.g., career search engines), (c) offer additional course assignments to graduate students enrolled in career counseling courses, and (d) serve as a tool to conduct research. For example, the Web site was used to study how master's-level counseling students perceive career Web sites (Osborn & Zalaquett, 2005).

CRWP-Based Course Assignments

Most of the course assignments involving the CRWP make use of the Big6™ Skills (Eisenberg, 2004) approach, requiring students to get involved in (a) task definition, (b) information-seeking strategies, (c) location and access, (d) use of information, (e) synthesis, and (f) evaluation. The Big6™ Skills approach to information problem solving is one of the best-known and widely used methods of teaching information and technology skills (Eisenberg, 2004; Friesen, 2003; Murray, 2003).

Evaluation of Career-Related Web Sites

The first assignment's objectives are to learn about, visit, analyze, and review randomly assigned Web sites. Students are randomly assigned three Web sites to review within the CRWP. The goal is to raise student awareness of the number of online career resources relevant to self-knowledge, career information, and job searching, as well as to facilitate an in-depth critical analysis of the three career-related sites. Instead of being given direct links to the specific sites, students are given instructions as to where to find the sites within the CRWP. For example, a student might be asked to review The Career Key, which is located in the Self-Assessment section of the CRWP. The rationale is to have students see the number of other sites within the CRWP sections as they look for their specific sites, thus increasing their awareness of the number of potential career sites for use with their clients.

Staying consistent with the Big6™ Skills approach, students identify the information needed to complete the assignment (task definition) and then complete it, search Web sites that provide career information (information-seeking strategies), find and access the sources (location and access) and read the relevant information provided by the sites (use of information), and organize the information provided by the different Web sites (synthesis). Finally, students are involved in evaluating the Web sites and the assignment itself (evaluation). All of these are core functions of information-literate persons (Murray, 2003), and students who need to improve their analytical skills are given additional information to better evaluate career Web sites.

Critical Review of the CRWP

At the end of the semester (after the three Web site reviews in the first assignment are completed), we ask students to evaluate the CRWP on a scale from 1 (*low*) to 10 (*high*) on several topics, including usefulness, what they like the most and the least, and how they might

use the CRWP with future clients. The objectives of this second assignment are to expose students to a wider range of career information and to further their use of their analytical skills.

What Resource(s) Would You Recommend?

The purpose of this third assignment is to have students think about the relevancy of specific career Web sites for specific needs. Students are presented with a case or vignette of a person who needs to find information about current salaries for chemical engineers. A sample vignette is about “Joelle” who has specific questions related to her case: “Joelle is interested in being a chemical engineer in Florida, but she wants to know that she will start off making at least \$57,000. Is this possible? List the online sources you use to determine your answer.” Students are expected to use the CRWP to find Web sites providing this information. A similar assignment is the virtual scavenger hunt where students are given specific problems to solve (such as calculating a cost-of-living change or determining which counseling jobs are available in specific regions of the country), and they use Web sites within the CRWP to find the answers to the problems.

The use of these three assignments raised several questions regarding the academic usefulness of the CRWP. For example, is the CRWP useful for fostering information literacy among the students? Would students demonstrate greater knowledge of career resources (subjective assessment) after using the Web site? Would they demonstrate increments in knowledge (e.g., recall a higher number of career Web sites) of career resources available on the Internet (objective assessment)? And, would they retain any learned information after 3 months (follow-up)?

Evaluation of the CRWP

Three groups of the graduate students who were enrolled in a master’s- level career

development course participated in evaluating the CRWP. The second author taught each of the courses, which were delivered over three consecutive semesters. All of the students enrolled in each semester volunteered to participate ($N = 83$). Eleven (13.3%) were men, and 72 (86.7%) were women. The students reported an average level of Internet skills overall.

Students were asked to use the CRWP to complete an assignment presented between the 1st and 2nd week of face-to-face classes. (The class was a hybrid, with a blend of face-to-face contact and online teaching.) The time span between the first and second face-to-face classes was 3 weeks. No other assignments requiring the use of the CRWP were given for the remaining duration of the course. Students revisiting the CRWP did so voluntarily.

All of the students completed a baseline measure assessing their Internet skills (low, medium, high), familiarity with career Web sites (listing career Web sites they already knew), and whether or not the site was active. Students also supplied demographic information. Prior to completing the first assignment, the average score on a 0 (*not familiar*) to 5 (*very familiar*) Likert scale of familiarity with career-related Web sites was .3 (range = .09 to .44). The average score after participating in the assignment was 1.5 (range = .66 to 2.6). Most students (81%) reported increased familiarity with career resources in each of the four areas studied (self-assessment, career searches, career information, and job preparation) after completing the assignment. Self-reported degree of familiarity increased 3 or more times from pre- to post-assessment. Repeated measures analyses of variance (ANOVAs) for each of the four areas studied were significant ($p < .05$), indicating increases in familiarity over time.

The number of career-related Web sites that students were able to report also saw significant changes over time. Prior to the first assignment, students were only able to report an average of one career-related Web site. This was an unexpectedly low average considering the

number of media-based advertisements promoting career-related Web sites. Following the assignment, students reported an average of 3.9 career-related Web sites. Students were able to name more specific career sites in all four areas after using the CRWP. Repeated ANOVAs for each of these areas were significant ($p < .05$).

Most of the students reported becoming more aware of the vast technologically supported information available on the Internet in the areas of self-assessment, career searches, career information, and job preparation after completing the first assignment. In addition, we compared male and female students' responses because, despite recent evidence suggesting that the gender gap in Internet use is rapidly diminishing (Weiser, 2000), there is still evidence of potential differences (Fallows, 2005). There were no significant gender differences (all $ps > .05$). For example, the overall mean rating of the CRWP (1 = low, 10 = high) was 7.9 ($SD = 1.95$), with women providing ratings similar to men (female mean = 7.9; male mean = 7.5; ANOVA, $F(1, 66) = .434$; $p > .5$).

Assessing Knowledge Over Time After Use of the CRWP

On the basis of our consistent findings in two semesters, we decided to increase the number of CRWP evaluation surveys given to students as a way to evaluate changes in knowledge about career-related sites over time. The last cohort of students taking the career development course ($N = 30$) was given three surveys, presented at intervals of 1½ months over that semester. These surveys assessed the number of Internet career Web sites students could recall at the beginning, middle, and end of the semester.

Students were asked to assess their knowledge of each of the four main areas of the program. After the first assessment, students were asked to use the CRWP between the 1st and 2nd week of class (exactly as students in the first two semesters had done). Again, the objective

of the assignment was to learn about career Web sites. No other assignments requiring the use of the CRWP were given for the remainder of the course. Students revisiting the CRWP after the 2nd week did so voluntarily. The students were asked to perform a follow-up evaluation of the CRWP and their perceived knowledge of career-related sites at mid-semester and on the last night of class. The analysis of the assessments revealed that students not only retained the learned information over 3 months but also reported increasing amounts of self-perceived knowledge across the four areas analyzed during that time. In addition, the total number of specific sites this group could report grew from 31 to 102 to 157 over the three surveyed times. Repeated ANOVAs for each of the four areas studied over time were significant ($p < .05$).

Finally, our computer-based counter showed a total of 3,874 hits during the time we conducted the evaluation. The number of hits per Web page was as follows: index page = 987, self-assessment = 695, career searches = 1,016, career information = 719, and job preparation = 457. The number of hits exceeded those required in the course. An analysis of the data revealed that 60% of these hits occurred after all the students had completed their participation in their career course.

Discussion

Information regarding gains in students' knowledge after using Internet-based career programs is limited (Osborn & Zalaquett, 2005; Zalaquett & Sullivan, 1998). Some of the issues that may prevent researchers from conducting studies in this area are the technical and practical challenges that the Internet presents for conducting experimental studies. Computer resources are not always available for maintaining records of program use or to implement online surveys or questionnaires (Osborn & Zalaquett, 2005).

Despite the extraordinary proliferation of Web sites housing information on career and

related issues, few systematic efforts have been made to investigate their use and impact (McCarthy, Moller, & Beard, 2003; Osborn & Zalaquett, 2005; Sampson & Lumsden, 2000). Most studies conducted on Internet-based career information sites focus on the perceived usefulness of their content and how much students like them rather than on the sites' usefulness to foster information literacy. In addition, because some graduate students lack basic research and information competence skills (Rockman, 2003), using an online tool such as the CRWP may be a useful way to increase students' computer literacy.

Our assessment of student use of the CRWP over three consecutive semesters suggests that it is an effective tool for promoting career information literacy among graduate students. The CRWP appears to teach information literacy skills to students because it stimulates interest in specific subject areas within a career path and helps students distinguish between different types of career-planning resources. The activities included in the CRWP-based assignments are similar to those in the Big6™ Skills approach because they require accessing, evaluating, analyzing, and synthesizing information. Such competencies, integral to information literacy, are also essential building blocks of lifelong learning and excellent performance for professionals in the field of counseling. Future evaluations should examine students' ability to critically evaluate the Web's career information resources. In addition, graduate students accessed the CRWP more times than expected based on the course assignment. The finding that about 60% of the hits occurred after the three groups completed their semester course supports this. One of our students wrote to us after graduating and requested information regarding the Web address of "that website I learned about in your class."

Students' gains in knowledge about Internet-based career resources were demonstrated over time across all four of the CRWP's sections. Several students indicated that, before using

this Web site, they were unaware of the enormous number of the Internet's available career exploration and career guidance resources. Similar findings addressing students' lack of awareness of Internet resources have been reported in the research literature (Edwards, Portman, & Bethea, 2002; McCarthy et al., 2003). The majority of the graduate students indicated that they liked the CRWP Web site and found it easy to use. They rated the CRWP highly and reported that they would recommend it to others. Several of our students indicated that the Web site was "easy to navigate" and "provides a consistent look," that "the contents are organized in a logical sequence," and that their "friends would enjoy being able to find so much career information at one site without having to search the whole web." Our assessment of the CRWP is limited by the size and location of our sample. Future studies could assess the effect of using the CRWP in a larger sample of participants enrolled in career counseling courses at counselor education programs throughout the United States.

Implications and Recommendations for Counselor Training

Information literacy is a critical issue for educators, administrators, and workers in the 21st century (Rockman, 2003). The complex world of today contains an abundance of information sources. According to Rockman, "Those individuals who are knowledgeable about finding, evaluating, comparing, selecting, analyzing, integrating, managing, and conveying information to others effectively and efficiently are held in high esteem. These are the students, workers, and citizens who are most successful at solving problems, providing solutions, and producing new ideas and directions for the future" (p. 612).

Information literacy skills are too important to students' future success to be ignored. The explosive growth of available information pertaining to every aspect of career guidance makes it necessary to assist counseling students in general, and career counseling students in particular, to

achieve career information literacy.

The use of the CRWP as a pedagogical tool in an academic setting could serve to further develop critical thinking skills, sharpen problem-solving skills, provide exposure to the elements of scientific inquiry, and enhance awareness of the field of career counseling in students. These broad goals may be accomplished by using the CRWP in a variety of course-related activities, which may include:

- the use of the CRWP Web site alone as a direct extension of class-room activities such as studies on careers and career searches as well as on self-assessment;
- the use of the CRWP Web site in combination with a variety of course materials, including brochures, audiovisual aids, and additional follow-up activities such as the development of Web site evaluations;
- the use of the CRWP Web site in combination with advanced activities such as assignments requiring data collection, storage, and analysis; communication with career specialists through the Internet; and development of independent research projects; and
- the enhancement of the existing CRWP Web site based on student suggestions or the development of original career Web sites based on the information students obtained during lectures and their independent research projects.

Because its users remain anonymous and can access it 24 hours a day, the CRWP may serve as an indicator of areas of interest for students (Zalaquett & Sullivan, 1998). For example, our students have visited the Career Searches section (1,016 hits) more frequently than the Job Preparation section (457 hits). In addition to its academic applications, the CRWP (or a similar Web site) may also serve professional and vocational purposes such as providing information for

professional counselors and researchers beyond course boundaries (e.g., professionals can use it to assist their clients or to look for jobs). Those benefiting from using the Web site may be able to improve career counselor education by providing current information on professions, job characteristics and locations, career options, and application process and recruitment to clients, as well as by linking counseling students with resources and career specialists nationally and globally.

As counselor educators, we originally intended to create a Web site that would educate students to use Internet technology effectively and to improve their knowledge of Internet-based career resources, thus enhancing their level of career information literacy and knowledge. After evaluating the CRWP as a pedagogical tool for three semesters, we believe the Web site is academically useful because it furthers the infusion of information competence and thinking skills into the learning outcomes of career counseling courses, resulting in positive gains in students' knowledge.

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