

Developing an E-Portfolio Program: Providing a Comprehensive Tool for Student Development, Reflection, and Integration

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Student portfolio development is an area of interest and activity on many campuses. This article describes an 8-year effort by leaders in student and academic affairs at a large research university to implement an e-portfolio. Initiated in response to a suggestion by the university president, the 5-year development process has led to the creation of a system now used by over 25,000 students. The e-portfolio program features activities that enable students to learn about and document nine general skills related to life/career development, which can then be shared with employers, faculty, and other referred users. This provides a framework for students to reflect upon and integrate their full learning experiences. Outcomes of an evaluation process are briefly described, followed by a review of e-portfolio program accomplishments, ongoing work, and future possibilities.

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Portfolio systems in higher education originate from different offices or departments and have many different purposes (American Association of Higher Education's Portfolio Clearinghouse, 2004). Colleges and universities are developing student portfolios, faculty portfolios, and institutional portfolios (Cambridge, Kahn, Tomkins, & Yancey, 2001). College students have used portfolios for many years. We most often hear of students using them in artistic or communications fields (e.g., a portfolio of photographs, drawings, or publications), but they are being used increasingly in other fields as well. Teachers may use a portfolio to show examples of lesson plans, lectures, or a statement of teaching philosophy. Job seekers have adopted portfolios to show samples of their work to potential employers and to document accomplishments included on the résumé. Denzine (2001) called upon professionals in the student affairs field to recognize the potential of portfolios for stimulating ongoing professional development of members and suggested strategies for implementing portfolio programs for all staff. Herdlein (2004) later noted that portfolios might be used in student affairs graduate programs to demonstrate competencies and evaluate learning outcomes obtained in practica and assistantships.

Portfolios are increasingly appearing in electronic formats because of advances in technology related to computers and the Internet. Young (2002) reported that "e-portfolios" could be the next big thing in campus computing as more and more institutions are encouraging, even requiring, students to create portfolios to highlight their academic work and reflect upon their campus experiences. Young further noted that e-portfolios may breathe new life into the academic advising process by helping students conceptualize how discrete activities relate to the development of life/career skills.

The purpose of this article is to describe the 7-year development of an online student career portfolio system at a large research university. Top administrators in our university, especially those in student affairs, led this effort. We share this story to inform the profession and others interested in developing a similar system who might benefit from our experience.

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Background and History

The Career Portfolio Program (CPP; Lumsden, Garis, Reardon, Unger, & Arkin, 2001) described in this article is a student portfolio system, owned and maintained by each student who controls access to his/her information. It is an online tool for identifying students' learning experiences that lead to the development of their desired skills, a collection point for students' accomplishments and skill documentation, and a potential marketing tool to be used when students seek further education or employment.

The CPP was under development for 5 years before its launch in April 2002, and it required sustained effort by many departments and individuals across the campus. A key to success in developing this program was the high-level administrative support (e.g., the university president initiated the work), including leadership by those in student affairs. In response to this leadership, the career center, through its portfolio task force, also made a concerted effort to involve other offices and groups. This seven-member task force, composed of career center directors and coordinators most involved with the portfolio project, presented the concept and an early portfolio prototype to university deans, faculty, and student affairs leaders. The development of the system also required significant effort and commitment from all units of the career center and the university technology office. This partnership, led by student affairs, provided for the creation of a program with university-wide application, integrating technology with existing student databases.

Another key to the successful development of the CPP was the involvement of employers who identified eight general, transferable skills (i.e., communication, creativity, critical thinking, leadership, life management, social responsibility, teamwork, and technical/scientific) needed to succeed in the workplace. The portfolio task force added a ninth skill area, research/project development, at the urging of the university president to reflect the importance of research at the university. In addition, the career center asked employers for feedback to determine if employing organizations would find an online career portfolio system "useful" in their recruiting efforts. These results revealed that employers validated the idea of an online portfolio sys-

tem and agreed that access to information about students' employability skills would be useful.

Philosophy and Purpose

Four philosophical principles were incorporated into the design and development of the CPP. These grew out of a desire to link the various constituencies of the university (e.g., faculty, students, parents, public officials, employers, contributors, citizens) into a common purpose that furthered the core teaching/learning mission of the undergraduate program. First, CPP sought to create a system that enabled students to develop and pursue a personal, strategic career vision. Second, CPP sought to help the university produce graduates needed in a global economy characterized by lean production, information technology, and alternative ways of working. Third, CPP focused on the employers of college graduates who valued evidence that students were ready to make effective contributions in the contemporary workplace. Fourth, CPP was based on the idea that career-planning services are a boundary spanning function linking education and employment, providing for connections between education, work, and community organizations. It was seen as having the potential to provide a developmental, comprehensive, learner-centered emphasis for educational and career-planning services at the university.

Design Considerations

Based on the results of the early research, surveys, and development work, 13 design considerations for the CPP were developed by the portfolio task force. Examples included being student-centered and based on learning activities throughout the undergraduate years, enabling students to select and pursue learning activities within and outside of their formal curricula that would enhance the likelihood of their achieving personal and professional goals, and involving many different offices and programs in the university (e.g., service learning, academic advising, student recruiting, student activities and organizations, preprofessional training programs).

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Goals

After reaching a consensus on the general characteristics and scope of the proposed CPP, the portfolio task force specified four program goals. The university would seek to develop (1) a comprehensive system for helping students connect learning opportunities with employer needs; (2) a program for helping students integrate curricular and co-curricular experiences (e.g., academic/career advising, courses, and service learning); (3) an innovative Internet-based system to promote student learning, career preparation, and employment; and (4) a high-visibility program to positively support student recruitment and retention.

With respect to student learner outcomes, it was determined that as a result of using the CPP students would be able to (1) develop strategic planning skills that prepare them for the job campaign, (2) be aware of the importance of identifying and developing general workforce skills, (3) identify learning opportunities that foster workforce skills, and (4) know how to communicate and market workforce skills to potential employers.

Description and Use

Program Description

The home page of the CPP provides users with three selection options: (1) First Time User: Start Here, (2) FSU Students: Enter Portfolio, and (3) Referred User: View Portfolio. A preview of the CPP is shown at <http://www.career.fsu.edu/portfolio/index.html>.

1. First Time User: Start Here

This selection provides an overview of the system and is designed to motivate students to use the program. A 10-step “tour” also provides information about the nine career and life skills and the five experience categories through which students may develop their skills. The experience categories are courses, jobs/internships, service/volunteer work, memberships/activities, and interests/life experiences. Because this system is online, it can be previewed almost anywhere at anytime. The first-time user tour and descriptions of the general career/life skills are at <http://portfolio.fsu.edu>.

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2. FSU Students: Enter Portfolio

This second selection requires the user to log in through the university's secure Web portal and takes the user to this main menu, where students have options to build, manage, or learn in relation to their career portfolio.

Build

In this section, students can begin building their skills matrix, profile, résumé, references, and artifacts. Each of these provides an option for an additional tour if students want more information. There are 5 methods students can use to build their career portfolio.

1. Skills Matrix

The skills matrix is the heart of this online CPP (see Figure 1). Students build their portfolio by documenting the experiences that have contributed to the development of any of the nine skills areas or another skill area of the student's choice. Each "cell" within the matrix contains data entry screens that provide a framework for entering information about personal skill development. Through the skills matrix, students can import information from all the courses on their academic transcript as well as the service experience on their service transcript directly into the data-entry screens. In this way, CPP is integrated with many different academic support services of the university. Students can work with academic advisors in selecting coursework that will help them develop a particular skill.

An important component of this portfolio-building process is that students are asked to reflect upon their experiences. They are encouraged to describe specifically how a particular experience led to the development of a career and life skill. This reflective process is important because it helps prepare students to market their skills to potential employers or admissions committees.

2. Profile

The profile section enables users to present a biographical sketch, or brief introduction to their career portfolio. It is the first page a referred user will see when viewing a student's portfolio, and it allows students to say something about their background and future plans.

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3. Résumé

The résumé section allows students to upload their résumé directly into the career portfolio. Students are encouraged to create their résumé in a generic format that can be used for other purposes; they are able to maintain multiple versions of their résumé in their portfolio.

4. References

This section allows students to enter contact information for people who can serve as references for them.

5. Artifacts

In the artifacts section, students upload samples of their work in a variety of formats. Students may want to include writing samples, *PowerPoint* presentations, research papers, artwork, links to Web sites, or other artifacts that show the scope and quality of their work.

These five subsections of the CPP build section provide a rich variety of methods for students to construct their online portfolio. The

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Figure 1
Skills Matrix

remaining two sections of the CPP main menu, manage and learn, are described next.

Manage

The manage section allows students to personalize up to three versions of their career portfolio. Because students are documenting their skills and experiences for an extended length of time (ideally, from freshman to senior year or throughout a graduate program), they may have a large number of items in their career portfolio. Students can customize each of their portfolios to target specific career objectives. Through the manage section, students also create access keys (passwords) that enable referred users (e.g., employers, admissions committees) to view their portfolio. In addition, students can view their career portfolio through the manage section and send emails with access information directly to people they want to see their portfolio. Students can track the use of access keys to know if and when referred users have accessed their career portfolio.

Learn

The learn section of the main menu allows students to access all of the tours in the CPP, view sample portfolios, and learn about other services the career center offers. Most importantly, students can access “Opportunities for Experience,” where they learn about opportunities on campus and in the community for developing career and life skills. This section includes links to more than 300 campus organizations and Web pages of student-affairs and academic-support offices.

3. Referred User: View Portfolio

The third selection from the home page is called Referred User: View Portfolio. In this section, persons referred by students can access a particular career portfolio and examine the information. Through the referred-user option, students can also obtain consultation and assistance from faculty and others regarding the development of their career portfolios. Thus, many varied university personnel can become an active part of this career-planning intervention if a student desires.

Portfolio Usage

At the end of 2004, the number of CPP student users was 20,953 (this

number may include alumni up to 5 years out and students who left the university). Of these users, 56% were female and 44% were male, almost exactly proportional to the gender distribution of students in fall 2004. Seniors (45%) were the largest users of the system, and they comprised 22% of fall 2004 university enrollment. Juniors were the second largest users (16% and 21%), followed by graduate students (15% and 19%) and sophomores (12% and 15%) of the total number of student users.

Of the 22,007 portfolios in the system (students may have up to three portfolios), 10,519 were active portfolios (they had been accessed in the preceding 365 days), while inactive portfolios (11,488) were those that had not been accessed within the year. Students from 17 colleges or schools and undergraduate studies used the system; and the top five were undergraduate studies (3,671), business (2,280), arts and sciences (2,168), social sciences (1,447), and human sciences (1,177). The most common artifact shown was Word documents (1,816), followed by images (322) and *PowerPoint* presentations (285). Two hundred and forty-seven students (247) provided links to their artifacts, and 2,901 resumes were uploaded.

Impact and Outcomes

In the preceding sections we described the Career Portfolio Program (CPP) and how it was implemented and used by students and staff at the university. In the following sections, we discuss its impact and outcomes with implications for others interested in developing and operating an online portfolio system.

Evaluation

The career center undertook seven activities aimed at evaluating the CPP goals, including a university-wide career portfolio contest and online surveys (students and employers) for portfolio users to complete. Detailed information related to these evaluation activities is available in Reardon, Lumsden, and Meyer (2004).

With respect to program goals, the data indicated that CPP is a comprehensive, Web-based system for helping students identify learning opportunities relevant to the broader workforce skills sought by

employers. Employers continue to indicate acceptance of the CPP and a willingness to use it in making hiring decisions. The visibility of the program was established through refereed state, regional, and national presentations at professional conferences; several publications; and Internet citations. Moreover, the university has submitted applications for three patents related to the CPP.

With respect to learner outcome goals, data regarding the CPP were obtained from students participating in a career portfolio contest in fall 2003, and an average of 88% strongly agreed or agreed with positive statements related to the learner outcome goals. In addition to the contest, an electronic survey of students completing portfolios as part of course assignments was conducted. An average of 80% of student survey respondents agreed or strongly agreed with the positive statements related to the learner outcome goals for the CPP. It was concluded that a positive impact on CPP program and learner outcome goals has been achieved.

Accomplishments

In developing and operating the CPP, several outcomes were achieved. The conceptual foundation and philosophical bases of the CPP appear to be sound and valuable. The CPP has been embraced by a wide array of divergent groups within and outside of the university, both in student affairs and academic affairs, which is an unprecedented endorsement of the concept of “career preparation” in this Carnegie Research I institution. The identification of and consensus about nine core, generic career-related skills across divergent university constituencies is another noteworthy accomplishment. For the first time, there was agreement about the value of general career/life skills needed by university students entering the workforce. The development of a consensus within the university community about these career/life skills, including faculty from across the campus in professional schools and liberal arts areas and advising staff from varied offices, was an important early accomplishment of the CPP. While a few “liberal arts” faculty were uncomfortable in identifying skill outcomes of a college education, the prevailing consensus was that these skills were highly compatible with a liberal arts education and should be at the core of this online portfolio. The career center succeeded in developing and launching a systems level intervention at the university to promote

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career development among students that is constantly available. The skills matrix embedded in the CPP, which enables students to identify learning activities related to nine general skills (plus a 10th skill of a student's choice) and then enter accomplishments and outcomes, appears to be one of the most unique and noteworthy features of the program.

By May 2005, 25,038 students out of 38,886 (64%) currently enrolled had initiated some level of contact with the CPP. The CPP represents an 8-year sustained commitment by the university administration, particularly the division of student affairs, the administrative information systems unit, and the career center, to a single program. Because internal funding has supported almost all of CPP development and evaluation, the project focused primarily on the university's student services and goals. The career center has maintained ownership and sustained initiatives over the 8 years of CPP operations. Moreover, the university has now established procedures for licensure and purchase of this career portfolio by other interested organizations.

Ongoing Work

Accomplishments notwithstanding, the CPP continues to challenge the staff to improve the implementation and operation of the program. When the CPP was initially conceptualized in 1997, the state-of-the art in computer technology and the Internet was very different than in 2005. Constant and rapid changes in technology provide continuous pressure to update a technology-based program such as the CPP. In recent university accreditation activities, the CPP was identified as an essential component in enabling the university to implement a new leadership development initiative, which is a joint effort by the divisions of student and academic affairs. Finally, there is an ongoing need to help employers and faculty reviewing applicants for jobs or graduate school to learn how to use portfolios in making decisions for hiring or admissions, respectively. Although employers indicate a commitment to use portfolios, the actual use of portfolios in the recruitment process appears to be limited.

To make CPP more visible at the university, other offices and program staff in both student and academic services offices need to become proficient in delivering information presentations on the CPP. Further

research needs to be done on employer and graduate school usage and reactions to the CPP. Do students who complete the CPP perform better in job interviews than students who do not? How are portfolios being used in graduate school admissions?

Future Possibilities

Even though it is a very complex career treatment or intervention, the CPP would benefit from theory-based research. For example, do students with low self-efficacy develop online career portfolios? Are certain personality types more likely to successfully undertake the portfolio development process? There are indications that portfolios will become an important component of future university accreditation reviews. Research is needed to examine the extent to which an e-portfolio helps students conceptualize strategies for acquiring and documenting general skills from available educational experiences within and outside of the formal curriculum. This may have to do with the degree to which the quality of reflective thinking, or positive metacognitions, contributes to exemplary portfolio development. There would appear to be abundant opportunities for student affairs staff and teaching faculty to use an e-portfolio program as a method to promote student development and learning.

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