I/NCEPR Cohort III - Year Three Report
Framingham State College

Background: Framingham State College is a small public college that primarily offers undergraduate programs in liberal arts along with some professional programs, as well as a limited number of graduate programs. The small campus is located 25 miles west of Boston. Framingham State College was the first state college in Massachusetts to require students to use laptops in class and provide a wireless campus network.

Electronic portfolios were introduced to the FSC community with the freshman class entering fall 2005. Through the Class of 2009 website, the main electronic avenue for communicating with the class, students were encouraged to set up electronic portfolios, or e-portfolios, to begin documenting, assessing and reflecting on their accomplishments in the areas of scholarship, leadership and service. The current freshmen, or the Class of 2012, were also introduced to the e-portfolio at orientation in June 2008 to support the goal of enhancing the undergraduate experience. FSC administrators supported the use of E-portfolios primarily because they believed that e-portfolios serve as visual reminders to students of their academic progress; emphasize the connections between content in different areas of the curriculum; and lead to a richer understanding of how skills and insights developed in co-curricular and service learning activities can relate to the academic component of the college experience. In addition, administrators felt that e-portfolios allow students to communicate their accomplishments as they seek internships, entrance to graduate school and employment opportunities.

In order to expand the e-portfolio program at FSC, administrators recognized the need for faculty buy-in, primarily through the use of course-specific e-portfolios. At the inception of the e-portfolio program, approximately ten to twelve faculty members were using course-specific e-portfolios, and all of those faculty who used them were teaching professionally-oriented courses rather than liberal arts courses. We sought to discover how course-specific e-portfolios could be used in a wide range of courses with the assumption that faculty needed to see how e-portfolios were relevant to their disciplines in order to incorporate them into their existing courses. We hypothesized that an emphasis on the soft skills, such as critical thinking and teamwork skills, would reach faculty across most academic disciplines.

Research Objective: The undergraduate curriculum at FSC requires student development of competencies in cross-curricular skills including communication and interpersonal skills, problem-

solving, critical thinking, leadership, and time management. Three faculty members from three different departments (economics and business administration, sociology, and consumer sciences) and the director of academic technology participated as a four person team in a series of pilot studies over three years to determine if the use of e-portfolio in an undergraduate course can improve students' perceptions of their level of proficiency in cross-curricular skills. Results after two years of pilot study show some correlation between e-portfolio use and perception of improved writing skills. Additionally, review of the first two pilot studies has led to changes to the research design and focus; observations of qualitative results provide interesting hypotheses.

Description of Research Design for Pilot: The three-year research program included three parallel studies, each conducted by a different faculty member. The three studies involved students from different disciplines and used e-portfolios that were limited to one course (two studies), or, in the case of one study, a two-course sequence.

Common Design Elements to Three Studies: The following aspects were common to all three studies:

1. The studies used two groups of undergraduate students completing different sections of the same course; the control group and the experimental group.
2. Changes to students' perceptions were measured by comparing results of pre-test and post-test surveys.
3. The surveys comprised a series of questions asking students to rate their levels of proficiency in certain skills, based upon the cross-curricular skills described in the college's General Education requirements.
4. Students used the same e-portfolio tool and completed surveys online.

All students in the studies produced reflective analyses of the course work, some using the e-portfolio tool and others using journals or other tools. Students in the experimental groups collected their analyses in an e-portfolio comprising separate sections for each cross-curricular skill, and then submitted their reflections by sharing the e-portfolio with the professor. Each study used the same set of cross-curricular skills, as follows:

1. Critical thinking
2. Communication skills (Oral, Written, Listening)
3. Quantitative skills
4. Team skills
5. Independent work skills
6. Valuing diversity
7. Technology skills
8. Use of models
9. Ethical reasoning and behavior

Our hypothesis was that those students using the e-portfolio to organize written work by cross-curricular skill would have increased awareness of these skills at the end of the course compared to the start of the course, and perceive improvement in these skills.

Description of Each Study:
Study A included business students with sophomore standing or higher. Study B included students in the capstone course in the sociology program; students were seniors. Study C included students who were seniors in the consumer science program.

In all three studies, the control group either completed reflections as separate Word documents but did not store them in a portfolio, or the group stored them in a portfolio that did not reference the cross-curricular skills as design or organization components.

Results of Pilot Studies: Comparisons of the before and after surveys for both groups was problematic for several reasons. First, although all students completed the reflections and/or e-portfolio as course requirements, a low number completed before and after surveys that could be matched for comparison. Second, the results were inconclusive; the surveys indicated that awareness and estimates of competency had changed from the start to the end of the course, but there was no clear pattern in which types of skills changed or even in the direction of the change. The results possibly indicate a change in the standards students use to evaluate their competencies. However, in reviewing the e-portfolios, faculty noticed several qualitative differences in the reflections between the two groups, which can be summarized as (1) awareness of audience and (2) awareness of context.

Observations: When students create reflection documents without the e-portfolio, they often include personal comments, such as expressing frustrations with team members, for example, or problems with emotional relationships. Few, if any, include these types of comments in reflections stored in an e-portfolio. This shift seems to reflect a change in the perception of audience; whereas students seem to perceive the reflections as comparable to a personal journal or diary, inwardly directed, reflections stored in the e-portfolio are outwardly directed.

In addition to a more formal tone and content, the use of e-portfolio led to an increased awareness of context, consistent with the outward focus. Without the e-portfolio structure, student reflections presume familiarity with context, providing their thoughts and reactions, but little background information or related material. When students store reflections in an e-portfolio, they are more likely to include images and other information related to the exercise or content.

These observations led to a change in the survey instrument from a pre- and post-test using a Likert scale to one survey using open-ended questions designed to identify qualitative differences arising from the e-portfolios.

Results of Qualitative Studies:

Study A (Business students): Student comments in the qualitative surveys confirm an increased awareness of audience, which led to a concern for presentation. The potentially public nature of the e-portfolio caused students to intend to be more careful about grammar and formatting, as well as using images and color to keep the reader's interest. Some students wanted their portfolios to engage the reader by being concise, well-organized and "exciting"; one student expressed a desire to make the content "interactive." The surveys also confirmed an increased awareness of context; surprisingly, this aspect was cited as important both for the student creating the e-portfolio and for the reader. A few students noted that the e-portfolio was a valuable study tool because it organized major course concepts in one repository and was available online. Several students stated that they used the e-portfolio to assess their strengths and weaknesses in the course. One student stated that although the

assignments alone were responsible for improvements in cross-curricular skills, the e-portfolio "made me notice them".

Study B (Sociology students): These data were only recently collected (early February 2009), so data analysis is in the preliminary stages. Students in two sections of the Research Methods sequence completed qualitative surveys related to the course-specific e-portfolio. For all of the students in both sections, this was the first experience that they had with e-portfolios. Many students reported that the e-portfolio experience made them reflect more on what they were learning in the course. One student stated, "The e-Portfolio helped me to think critically by thinking about thinking critically. At first I did not think my critical thinking skills were very sharp, although using e-Portfolio and writing about critical thinking really helped me realize and become aware of the ways in which I do critically think about issues and certain things." Students also reported that they became more aware of areas for improvement and more intentional about seeking strategies to improve their skills.

Not all of the feedback on e-portfolios was positive. Some students felt that e-portfolios involved "too much busywork" and were "useless." Others stated that the technology related to the Blackboard e-portfolio utility was cumbersome and did not allow for sufficient creativity. A minority of students voiced this view of the e-portfolio experience.

Progression of e-portfolio use on campus:

At Framingham State College, e-portfolios were first implemented by Student Affairs to increase student awareness of three components to campus life: academic, service and leadership. Faculty were encouraged to use e-portfolios on a course basis and some faculty have used the e-portfolio to create teaching portfolios for personnel actions such as application for tenure or promotion. In addition, the MBA program now requires students to compile a summative e-portfolio which will be used, inter alia, to assess the program as a whole. The first set of student e-portfolios will be reviewed this year.

With the exception of the MBA program, student use of e-portfolios remains fairly low. Not surprisingly, students are unlikely to create an e-portfolio without a clear definition of the audience and purpose for the e-portfolio. Faculty are unlikely to use the e-portfolio at the course level if that is the only time the

tool is used, because considerable time is needed to allow students to become comfortable with the technology. This is true even when the e-portfolio tool is associated with a course management system with which students are familiar.

Implications for future study:

Student use of e-portfolio could be increased if students can use the e-portfolio beyond one course. Although some students commented on the value of e-portfolio as a learning tool, their comments also suggest that they are very aware of the reader when creating their e-portfolio. Further study might examine the significance of interaction or response from faculty has in setting student awareness or assessment of their cross-curricular skills.