

# Electronic portfolios: balancing learning and assessment

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**Abstract** In 2006, our university instituted a requirement that all undergraduates create and submit a digital portfolio as evidence of academic and experiential mastery of academic competencies. The rationale for this ePortfolio Program is to build a mechanism through which core competencies (Written and Oral Communication; Reasoning, Critical Thinking, and Problem Solving; Mathematical, Scientific, and Technological Literacy; Social Science and Cross-Cultural Awareness; Arts and Humanities; and Ethical Judgment) can be both demonstrated and evaluated. Although the ePortfolio was originally implemented as an assessment tool, its broader educational function is to make students' college education more meaningful and to assess the integrity of the educational process.

## Key Ideas

- The introduction of an ePortfolio requirement into the college curriculum brings with it concerns about plagiarism and academic integrity.
- The development of an ePortfolio must add value to the undergraduate experience if the initiative is to be successful.
- Using an ePortfolio as both learning tool and an assessment tool creates a tension that needs to be addressed.

**Discussion Question 1** How can we design and implement an ePortfolio system that serves multiple purposes, for example can an ePortfolio be an assessment tool and a learning tool?

**Discussion Question 2** In what ways does the idea of ownership and publication contribute to the integrity of the student's work?

## Introduction

In 2006, our university instituted a requirement that all undergraduates create and submit a digital portfolio as evidence of academic and experiential mastery of academic competencies. The rationale for this ePortfolio Program is to build a mechanism through which core competencies (Written and Oral Communication; Reasoning, Critical Thinking, and Problem Solving; Mathematical, Scientific, and Technological Literacy; Social Science and Cross-Cultural Awareness; Arts and Humanities; and Ethical Judgment) can be both demonstrated and evaluated. Although the ePortfolio was originally implemented as an assessment tool, its broader educational function is to make students' college education more meaningful and to assess the integrity of the educational process. This paper will explore the following issues:

- The introduction of an ePortfolio requirement into the college curriculum brings with it concerns about plagiarism and academic integrity.
- The development of an ePortfolio must add value to the undergraduate experience if the initiative is to be successful.
- Using an ePortfolio as both learning tool and an assessment tool creates a tension that needs to be addressed.

The purpose of this paper is to examine the electronic Portfolio Program as implemented at our university as a multi-purpose environment in which students learn about themselves as learners, professors learn about their students and the intended and unintended learning that occurs in their classes and the undergraduate program assesses the effectiveness of the core competencies and student's ability to demonstrate them. The study will examine changes in the quality of students' ePortfolios as well as changes in students' perceptions of the ePortfolio Program. In addition, changes in faculty perceptions of the ePortfolio Program, changes in faculty practice, and changes to the undergraduate curriculum will be examined. Questions for discussion include the following:

1. How can we design and implement an ePortfolio system that serves multiple purposes, for example can an ePortfolio be an assessment tool and a learning tool?
2. In what ways does the idea of ownership and publication contribute to the integrity of the student's work?

## Theoretical Framework

The use of electronic portfolios in higher education has increased steadily over the past decade. Not surprisingly, electronic portfolio initiatives in higher education seem to be most commonly focused on a single program area such as education,

architecture or writing. Portfolio initiatives are put in place for a variety of purposes the most common being assessment, but others include learning and reflection and showcasing skills and achievements. These portfolios often have different audiences as well; self, peer, professor, prospective employer. This paper will draw upon research from performance-based assessment and the use of ePortfolios for learning and reflection.

In their research on ePortfolios Zeichner and Wray (2001) identify three different types of portfolios: the learning portfolio, which documents a student's learning over time; the credential portfolio, which is used for registration or certification purposes; and the showcase, portfolio, which students can use when applying for employment positions or graduate school. Abrami and Barrett (2005) have also identified these types of portfolios using slightly different labels: process, showcase and assessment. These variations of an ePortfolio lead some to suggest that an ePortfolio should serve a single purpose (Darling, 2001, Zeichner & Wray, 2001). We argue that the ePortfolio must address multiple purposes and audiences. If a Portfolio does not contribute to a student's learning whether through the reflective statements (in our case rationale statements where a student articulates how a particular piece of evidences addresses a competency) or the opportunity to, as Darling (2001) suggests, "see learning unfolding" they may not provide an accurate assessment of a student's skills and abilities.

## **Eportfolios for Learning**

An ePortfolio Program that has at its core learning and approaches this mission from a student-centered perspective, the program must have a built-in mechanism for feedback. This support mechanism is difficult to implement because as Wade & Yarbrough (1996) point out student feedback and ePortfolio review requires a great deal of time. Researchers agree (Carraccio & Englander, 2004; Ring & Foti, 2006) that reflection on learning is a critical element of the portfolio process. Yet, as researchers (Ring & Foti, 2006; Darling, 2001) have pointed out students are not very good at constructing well thought out reflective statements and scaffolding on this process is essential. The most effective and successful ePortfolio programs provide formative reviews of a student's ePortfolios encouraging reflection and subsequent revision and refinement of the document. It is through this formative review and students' subsequent reflection on that feedback that they begin to identify their learning goals, better understand their strengths and weaknesses, and begin to recognize the value of their ePortfolios. This process has begun to inform the ePortfolio Program thus contributing to a richer assessment of our core competencies.

## **Eportfolio for assessment**

The use of ePortfolios for assessment has changed the nature of the ePortfolio discussion. The increased use of ePortfolios as an assessment tool has contributed to tensions among ePortfolio community. Recently, there has been a tendency to use portfolios in accountability driven assessment systems (as in many countries, e.g. England with teacher standards, the USA with state licensing of teachers and Australia with outcome-based education) to determine standards of performance or competency levels in these settings (Darling-Hammond, 2000; Cochran-Smith & Fries, 2002). The portfolio in these cases is issued for bureaucratic use and has mandated requirements (Smith and Tillema, 2003). These issues suggest a disconnect between assessment criteria and program as well as a tension between the measurement of standards and capturing development and reflection (Smith and Tillema, 2003). As Zeichner & Wray, (2001) point out there is also a tension between a student-centered ePortfolio and an overly prescribed ePortfolio approach which may cause students to resent the ePortfolio thus contributing to a lack of ownership or buy-in on the part of students. Darling (2001) adds that a lack of examples exacerbates this problem contributing to confusion and frustration on the part of students.

## **ePortfolios and Academic Integrity**

The introduction of an ePortfolio requirement into the college curriculum brings with it concerns about plagiarism and academic integrity. Because of the lack of research available on ePortfolio development and student cheating we look to research on cheating in distance education. While the common perception is that the use of computers increases the opportunities for cheating, Carnevale (1999) suggests that cheating and plagiarism are equally problematic in both types of classes (online or face-to-face). Others suggest as bandwidth (rate of data transfer) decreases, cheating increases (George and Carlson, 1999). Put simply, the more "perceived distance" between the student and teacher the more likely cheating will occur. Cizek (1999) identified methods of recognizing, responding to, and preventing cheating in traditional assessments (face-to-face). One of these methods is the application of pedagogical solutions to the problem such as making the assessment a learning experience where students discuss or justify what they have written in a short answer type assessment.

## **Methods**

A mixed-method design was used to address the research questions. This approach works well for this particular type of study because it draws from the strengths and

minimizes the weaknesses of both (Johnson & Onwuegbuzie, 2004). The students' electronic portfolios were examined, interviews conducted, and field notes reviewed as they pertained to the questions under study. The portfolios were examined frequently to understand how the portfolios evolved. In addition, students and faculty were surveyed yearly regarding their perceptions of the ePortfolio Program. Table 1 below outlines the details of the research design, including the research questions, research methods, data collection instruments, and timeline.

## **Description of the Site**

Participants in this study included undergraduate students and faculty at a large southern university. All students enrolled in this university are required to develop an electronic portfolio to demonstrate core competencies. The portfolios of all students were examined while participation in face-to-face interviews and online surveys was voluntary. All student data was kept confidential and each student assigned a code to protect their anonymity.

## **Results**

Table 1 describes the details of the research design, including the research questions, research methods, data collection instruments, and timeline.

**Table 1: Research Methods Timeline**

RESEARCH QUESTIONS	RESEARCH METHOD	DATA COLLECTION INSTRUMENTS	WHEN	DESIRED OUTCOMES
How have students' ePortfolios changed as a result of formative peer feedback?	Trained student reviewers provide feedback to peers regarding the relationship of the evidence in the ePortfolio to the selected -core competency.	Review of all student ePortfolio and changes made to the ePortfolio as a result of peer feedback Student surveys	Yearly  Mid & Post	Students revise and enhance their ePortfolios Students' rationale statements improve Students' ePortfolios improve over time
How have students' perceptions of the ePortfolio Program changed as a result of peer feedback?		Student surveys Student Focus Groups	Mid & Post Ongoing	Students recognize the value of the ePortfolio Program as a mechanism through which to enhance their undergraduate education
How has the ePortfolio Program changed as a result of the faculty summer assessment program?	22 faculty reviewers participate in a week-long assessment of ePortfolios and student artifacts	Faculty Surveys Faculty Interviews Notes and documentation gathered during the assessment week	Yearly	Changes are made to improve the ePortfolio Program based on the feedback from faculty assessors
How have faculty perceptions of the ePortfolio Program changed as a result of their participation in the summer assessment program?	Faculty review student work documented in their ePortfolios	Faculty Surveys Faculty Interviews Notes and documentation gathered during the assessment week	Yearly	Faculty recognize the value of the ePortfolio Program as a mechanism through which to enhance undergraduate teaching and learning
How has the undergraduate curriculum changed as a result the faculty summer assessment program?	Faculty review student work documented in their ePortfolios	End of Assessment reports and recommendations from participants	Yearly	Changes are made to the Core Undergraduate Curriculum.

## Conclusions

It is our goal to use the ePortfolio for, as Heritage (2007) suggests: assessment as a moving picture -- a video stream rather than a periodic snapshot. If assessment is used to inform effective instruction, then that assessment is quickly rendered out of date. Student learning will have progressed and will need to be assessed again so that instruction can be planned to extend the students' new growth.

Overcoming the uncertainties and barriers inhibiting the success of this implementation will continue to take time and patience and will demand training and ongoing support. Professors, students, and administrators agree that ongoing training is essential if the Program is to become fully adopted. Project sustainability is dependent upon students, professors, and our administration viewing portfolio development as a continuous process.

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