

A Large-Scale Web-Based Electronic Portfolio System: Developing the Purdue Electronic Portfolio (PEP) System

James D. Lehman
Purdue University
1442 Liberal Arts and Education Building
West Lafayette, IN 47907-1442
lehman@purdue.edu

David O'Brien
University of Minnesota
Peik Hall, 159 Pillsbury Dr., S.E.
Minneapolis, MN 55455
dobrien@umn.edu

Joy Seybold
Purdue University
1442 Liberal Arts and Education Building
West Lafayette, IN 47907-1442
jaseybold@aol.com

Abstract: Electronic portfolios offer a powerful tool for students to demonstrate mastery of performance-based standards for teacher education. As one part of P3T3: Purdue Program for Preparing Tomorrow's Teachers to use Technology, Purdue University's School of Education is developing a large-scale, web-based, electronic portfolio system called the Purdue Electronic Portfolio (PEP) system. This customized e-portfolio system relies on a web-based interface to a database in Microsoft's SQL Server hosted on a large server with nearly two terabytes of storage space. The system allows students to store files and create artifacts, which are coherent collections of files coupled to reflective narratives that address specific standards. The system provides templates, which give users flexibility while providing ease-of-use and some flexibility. Completed artifacts are "published" as web pages. Pilot testing with several hundred users in the fall of 2001 suggests it is an effective tool.

Introduction

The national movement toward performance-based standards for teacher education has prompted much interest in the use of portfolios by pre-service teachers to document their knowledge and teaching performance (Barrett, 1999; Read & Cafolla, 1999). Portfolios are purposeful collections of student work that demonstrate effort, progress, and/or achievement (Barrett, 1999; Russell & Butcher, 1999). They are relevant to the student, individualistic, and can show growth and development over time, providing a richer picture of that understanding than can be achieved through more traditional, objective measures. They provide an opportunity for the pre-service teacher to demonstrate and organize his/her understanding of teaching and learning. Of course, they also provide one means by which pre-service teachers can be assessed.

Much of the interest in portfolio development is now focused on the use of electronic portfolios (Barrett, 1999, 2001; Read & Cafolla, 1999). Electronic portfolios offer several advantages compared to their paper-based analogs, including: reduced storage demands, ease of back-up, portability, ability to create links, and development of students' own technology skills (Barrett, 2001). In the context of developing pre-service teachers' own technology skills, electronic portfolios have the potential to help address the shortcomings of teacher preparation with regard to the use of technology that have been noted in a number of national reports (e.g., Moursand & Bielefeldt, 1999).

Purdue Electronic Portfolio System

Purdue University's School of Education is now implementing restructured elementary and secondary teacher education programs. These new programs feature a cohesive set of courses anchored by four strands – technology, diversity, field experience, and portfolio assessment. Purdue's PT3 implementation grant, entitled P3T3: Purdue Program for Preparing Tomorrow's Teachers to use Technology, is helping to support the implementation of these new programs. One P3T3 initiative is the development of a dynamic assessment system that provides pre-service teachers the tools and opportunities to select multiple ways of viewing their evolving teaching practice, reflect on that practice, and use digital representations to meet performance-based assessments. This large-scale customized electronic portfolio system is designed to accommodate the approximately 2300 students in teacher education, and provide for reasonable consistency in how students and faculty deal with portfolios. The Purdue Electronic Portfolio (PEP) system consists of a database developed using Microsoft's SQL Server, a popular web-based database engine. Access to the database is provided through web pages that use Microsoft's Active Server Pages (ASP) technology. This allows for dynamic interaction with the database through a simple-to-use web front end that is familiar to users. The entire system is hosted on an in-house server with nearly two terabytes of storage space, enough to give each user the equivalent of a CD-ROM's worth of personal storage.

Students can use the system to upload files and create artifacts. In our parlance, an artifact is a collection of files that the student assembles in the e-portfolio system to address teaching proficiency. Students may classify artifacts according to three broad locally-developed themes as well as the ten INTASC principles that undergird many teacher preparation standards. To display the artifact, the PEP system features a template system that allows students to integrate a reflective narrative with links to various files that relate to a specific artifact (e.g., a written lesson plan, course assignment guidelines, a digital photo or even video of the lesson being taught). The templates provide flexibility in determining how the artifact will look, while providing consistency and ease-of-use. Once completed, the artifact is "published" as a web page with links to the integrated files. Initial pilot testing of the PEP system began in the fall of 2001 with about 400 students in Block I of the teacher preparation program. Results indicate the system provides the necessary functionality for student portfolio creation. The system may provide a model for other teacher education institutions interested in electronic portfolios. For more information, visit our website at: <http://p3t3.soe.purdue.edu>.

References

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