

# Adobe ePortfolio

## Using ePortfolios to demonstrate growth and assess learning

Dr. Alan Foley

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The evolving nature of work and the economy in the 21st century requires that students gain a new set of skills, including critical thinking, innovation, and creativity to be successful. When compared to previous jobs, today's opportunities typically come with more responsibilities and require engaging with an increasingly broad audience. In response, companies are looking to hire college graduates in greater proportions than high school graduates. A recent study of over 400 employers across the United States highlights this trend: 28% of employers projected a reduction in their hiring of high school graduates, while 59% indicated an increase in hiring college graduates. Educators at all levels are recognizing both the changing skills and experiences of students—many of whom have been using digital technology most of their lives—and emerging new skills required for success in the 21st century. As a result, teachers in both K-12 and higher education are integrating technology in classrooms in new and innovative ways and are changing pedagogic strategies, emphasizing authentic and problem-based learning strategies.

As authentic and problem-based learning become more widely used, methods for gauging progress and achievement are also evolving. As a component of a standardized test alternative often referred to as a performance assessment, portfolios are increasingly popular tools to gauge student progress, achievement, and development. In addition to their utility as assessment tools, portfolios can support student advising and career preparation as well as professional and certification processes for practicing professionals.

The concept of portfolio assessment is not new. Portfolios have long been showcase tools for artists; however, their use in educational contexts is gaining popularity. While an artist's portfolio might be a representation of past work, assessment portfolios illustrate a student's efforts and achievements in defined areas and can provide insight into learning styles, needs, and tendencies.

Previous efforts at using portfolios to assess ability and performance in large-scale and systematic ways were hampered by a variety of policy, standards, and technology issues. In the early 1990s, a number of states implemented large-scale portfolio assessment initiatives. Arizona, Arkansas, Alaska, Connecticut, Kentucky, New York, and Vermont were among the early states to embrace performance assessment and portfolios. In the United States, different models of alternative assessment including paper-based portfolios, subjective exams, and project-based learning as well as multiple national, state, and local standards have complicated the decision-making process for implementing alternative assessment models.

Attempts to implement large-scale, paper-based portfolio initiatives were hampered by the storage and transportation difficulties paper-based portfolios present. Paper-based portfolios were difficult to duplicate (either for archival or evaluative purposes) and share. Print orientation did not support

the representation of video, animation, or web-based work. Additionally, paper-based portfolios required significant administrative work on the part of the teacher. An analysis of the Vermont Portfolio Program found teachers concerned with the time demands of planning and administering the portfolio process. Moreover, it is harder to ensure that portfolios are accurately recorded and scored; evaluation is more subjective than traditional testing, and reliability and validity can be questionable.

With the increasing integration of technology into K-12 and higher educational contexts, electronic portfolios, or ePortfolios, are a viable tool for formal and informal assessment across disciplines. Broadly, ePortfolios are digital resources that allow for flexible expression in the demonstration of growth using a variety of digital resources. ePortfolios encourage self-evaluation while providing a structure for feedback from students, peers, parents, and administrators. Frazier and Paulson (1992) note that the primary worth of portfolios is that they allow students the opportunity to evaluate their work. At the same time, ePortfolios delivered electronically allow individuals to share their work with a broad audience easily and often. In teacher preparation fields, standards-based teaching portfolios have become a popular method to display and assess teaching development. ePortfolios allow students to combine graphics, video, text, sounds, and other digital artifacts into an organized, portable, and Internet-ready format.

The popularity of performance assessment processes can be evidenced by the range of ePortfolio technologies that have sprung up. There are dozens of companies providing ePortfolio services, and a number of open source portfolio projects have evolved in the last several years. One obvious challenge is that evaluating and choosing a portfolio tool is potentially quite difficult given the range and number of options on the market. Many of these services require subscriptions or an ongoing commitment by an institution to host portfolios. While these challenges seem significant, the continuing evolution of portfolio technologies is making the development and use of ePortfolios easier and cheaper while increasing portability.

### **Global ePortfolio use**

Globally, ePortfolio use tends to be focused on supporting lifelong learning and professional development, while in the United States, more emphasis has been placed on accountability and assessment. Programs include broad ePortfolio initiatives across the educational spectrum (K–16, vocational education, continuing education, and so forth) in parts of Europe and in Canada. The systematic use of ePortfolios is well established in parts of Europe and Australia.

In recent years, there is increased attention on the use of portfolios for assessment purposes. Benefitting from centrally controlled departments or ministries of education rather than the state-centric system in the U.S., these countries have been able to aggressively move forward utilizing alternative forms of assessment like ePortfolios.

### **Europe**

The European Portfolio Initiative Coordinating Committee (EPICC) sponsored by the European Institute for E-Learning (EIFEL) is chartered to provide access to ePortfolios to all European citizens by 2010. The initiative is comprehensive and encompasses educational and learning environments from childhood through ongoing adult learning. There is a shift away from the use of paper-based portfolios for assessment and accreditation and a move to put Europe at the forefront of using ePortfolios for continuing professional development purposes beyond the educational environment. EIFEL has also initiated a study on ePortfolio readiness. The findings of the study indicate that France has a growing awareness of ePortfolios, but there is no official policy. As with many educational reforms, the study notes “the potential for the use of ePortfolios in France will only be fully realized in the context of significant changes in the policy and practice of education and personal and professional development in France.”

The United Kingdom has been involved in conducting projects related to ePortfolios since the 1990s, and the British Department for Children, Schools, and Families (DCSF) has mandated that every student has access to a personalized online learning space with the capacity to support an ePortfolio by 2008. Additionally, the Qualifications and Curriculum Authority (QCA), the

governmental agency that develops and maintains national curriculum and assessments, as part of its five-year blueprint for e-assessment proposes that all awarding bodies be able to accept and assess ePortfolios by 2009. Strong national expectations toward the use of ePortfolios across the educational spectrum have led to wide implementation and use of ePortfolios.

The British Educational Communication and Technology Agency (BECTA) is the British agency responsible for the development of the eLearning strategies and technology development for schools and postsecondary institutions. Recently, BECTA commissioned a team of learning sciences researchers from University of Nottingham to investigate the potential of ePortfolios to support learning.

In 2007, a number of researchers from the Learning Sciences Research of the University of Nottingham were commissioned by BECTA to investigate the impact that ePortfolios can have on learning in schools, further education, higher education, and work-based learning. Case studies of eight ePortfolio projects were developed, and the key findings included:

- ePortfolios benefit learning most effectively as an integral component of teaching and learning approaches.
- ePortfolio processes can support both guidance needs and curricular outcomes.
- ePortfolio processes support the learning outcomes of students with a wide range of abilities.
- ePortfolios make progress and attainment more obvious to both teacher and student because viewing and revisiting the repository of work reveals development, achievement, strength, and weaknesses.

### **Australia**

In addition to Europe, Australia has made significant strides in its effort to utilize ePortfolios as alternatives to paper-based assessment. While ePortfolios are increasingly popular in Australia, particularly in higher education, there is no formal government policy on ePortfolios or portfolio assessment.

The sectors in Australia that are showing keen interest in this innovation are the health, teaching, and engineering professions. For example, the University of South Australia is using ePortfolios in its first-year undergraduate law program. An important research initiative in ePortfolio use in Australia is the Australian ePortfolio Project (AeP). The AeP is a research project undertaken by four universities—Queensland University of Technology, the University of Melbourne, the University of New England, and University of Wollongong—to investigate ePortfolio practice in higher education across Australia. Queensland University of Technology (QUT) has also initiated a university-wide student ePortfolio. The ePortfolio was released to all QUT students in 2004.

### **United States**

One area of increasing activity in the use and research of ePortfolios is in teacher education programs. While there are currently no federally mandated ePortfolio initiatives in the United States, there is a growing recognition of the use of ePortfolios; however, most of this work is being done by individual organizations and institutions to meet particular needs. Currently in the U.S., the bulk of ePortfolio development is occurring in higher education with primary emphasis in Education and the Health Sciences. The widespread use of portfolios in teacher education is in large part a result of the 2002 National Council for Accreditation of Teacher Education (NCATE) Standards, which mandated that the technology be integrated across teacher education curricula and placed an increased emphasis on the use of technology in demonstrating achievement of NCATE requirements.

Two of the main organizations spearheading the ePortfolio initiatives in the United States are the EDUCAUSE Learning Initiative (ELI) and the American Association for Higher Education (AAHE). In 2003, ELI (formerly NLII) identified ePortfolios as one of its key tools for transforming higher education. ELI has published a number of articles on the use and implementation of ePortfolios in higher education contexts. AAHE has developed a clearinghouse dedicated to ePortfolio resources.

Perhaps the most advanced ePortfolio state is Minnesota, which has two large-scale ePortfolio projects providing access to ePortfolios across the education spectrum. The Minnesota State Colleges and Universities System (MnSCU) developed the eFolio Minnesota system. It is the vision of these institutions that every resident of Minnesota use eFolio to reach their career and education goals. The eFolio system is the most comprehensive ePortfolio implementation in the United States with over 70,000 users across the state of Minnesota and over 1 million hits a month. In addition to the MnSCU eFolio system, the University of Minnesota has implemented an open-source portfolio system it developed, called ePortfolio, for its approximately 34,000 students.

### **ePortfolios in use**

ePortfolio usage has not evolved to the point where there are single educational organizations using ePortfolios to the extent below, but there are numerous examples of these components in use. Teacher education programs have been using portfolios and ePortfolios to evaluate teacher education candidates for almost a decade in response to NCATE standards. The University of Iowa's ePortfolio project is an excellent example of ePortfolios in use in teacher education. At Virginia Tech University, a campus-wide ePortfolio initiative is being used by a variety of academic programs to assess student learning for either SACS accreditation at the university level, or for program-level accreditation. The Department of English at Virginia Tech is in the second year of a three-year pilot program using ePortfolios. In this pilot, the department is assessing student learning with learning outcomes the faculty developed in the first year of the pilot. The department is also using ePortfolios to advise students in course and program selection, inform long-range departmental planning, and prepare students for post baccalaureate options.

The following department is a hypothetical department combining aspects of ePortfolio usage found across K–12 and higher education.

### **Scenario**

An academic department has started using ePortfolios for a number of uses across the department and through learners' professional development. The department's use of ePortfolios has been driven by both professional standards from its accrediting organization (for example, NCATE, ABET, IEEE, or AACSB), and by institutional standards emerging from the university's new plan on improving learning outcomes and increasing retention rates. Additionally, the department hopes to respond to changes in the needs and preferences of their students. (A popular trend in discourses surrounding teaching and learning with technology labels young, technology literate students as "Net Gen Learners" or "Digital Natives" and their teachers as "digital immigrants.") At the same time, the department seeks to develop those students' critical technology literacy skills. By integrating ePortfolios across the academic and profession continuum, the department hopes to develop student and faculty technology skills and digital literacy skills.

### **Admissions to professional and graduate programs**

First-year and pre-major students work with their advisors in learning what ePortfolios are and what resources are available to them as they begin to develop their ePortfolio. As part of the admissions process to the professional/certification sequence of courses in the department, or to be admitted as a major (the upper-level courses) the department uses the ePortfolios that pre-major students have developed. The ePortfolios are also useful for advisors who use them to help guide students toward classes and potential internship ideas.

In a similar fashion, ePortfolios are used by the department in determining admissions to the graduate program. Each semester, departmental faculty review the portfolio work of applicants to the masters and doctoral programs.

### **Advising**

After admission to the degree, the ePortfolio becomes a powerful tool for advisors to assess student progress and identify learning needs. Students are able to share works-in-progress with advisors, and advisors are able to see what work students are doing in the context of their degree requirements and career plans. Students are also able to use the ePortfolios when they apply for internships in their third year. The ePortfolio allows students to demonstrate their

achievements, as well as become a repository for demonstrating applied skills and knowledge in the internship. The student is also able to showcase letters of recommendation and support from the internship site. The faculty member supervising the student's internship relies on the ePortfolio for documentation of the student's efforts and achievements in the internship and evaluates the student's internship experience. Students place materials in their ePortfolios to demonstrate programmatic and degree requirements as well as professional competencies.

### **Job search**

As they complete their studies, students use their ePortfolios to showcase work and demonstrate skills to prospective employers. Because of the easy customizability of the ePortfolio, students are able to present tailored views of their achievements and experiences to prospective employers. In addition to writing letters of application crafted for each potential job, students are able to present portfolios highlighting relevant background and experience.

### **Professional development**

Because the professional organization has laid out standards, graduates of the program are able to use their portfolios to support their continuing education in the field. Often former students take graduate courses in the department as part of their continuing education, and their ePortfolios help them document their ongoing professional growth.

### **Departmental processes**

In addition to their utility across the learning continuum with students, ePortfolios also play an important role in the administration and management of the department. Faculty use ePortfolios for tenure and promotion processes. Faculty seeking tenure use their ePortfolios as repositories of their academic and professional achievements in the years leading up to their tenure review. Junior faculty use their ePortfolios to collect their published articles, links to course websites and innovative course materials, reviews of books and other publications, presentations from national and international conferences, teaching evaluations, reports from committee service, letters of support, and other professional reviews. When the materials are needed for review, the ePortfolio can be made available to both the departmental tenure committee and selected external reviewers. Because the ePortfolio has been developed over the course of several years, creating an appropriate tenure review portfolio takes very little time.

Additionally, the department is able to use ePortfolios for accreditation processes as well. Because students are using ePortfolios to collect and present their academic products and profession experiences, collecting demonstration artifacts for accrediting bodies is much simpler. Similarly, the faculty's use of ePortfolios provides access to faculty work, research expertise, and professional engagement critical for accreditation review.

### **Summary**

ePortfolios are an important response to trends changing the nature of learning. Increasingly, ePortfolios are removing the logistical challenges of performance assessment that derailed large-scale projects in the past by incorporating digital media as it becomes an increasingly important part of assessing student learning.

### **About the author**

Dr. Alan Foley is associate professor of instructional design, development, and evaluation at Syracuse University. Dr. Foley's teaching areas include assistive technologies, instructional and learning space design, and web accessibility and usability. His research interests lie at the intersection of user experience, disability, identity, and eLearning technologies. He is currently working on accessibility and usability in educational technologies and the development of learning environments that ensure access for all learners. Dr. Foley was previously on the faculty at North Carolina State University. He received his Ph.D. from the University of Wisconsin-Madison in Educational Communications Technology.



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