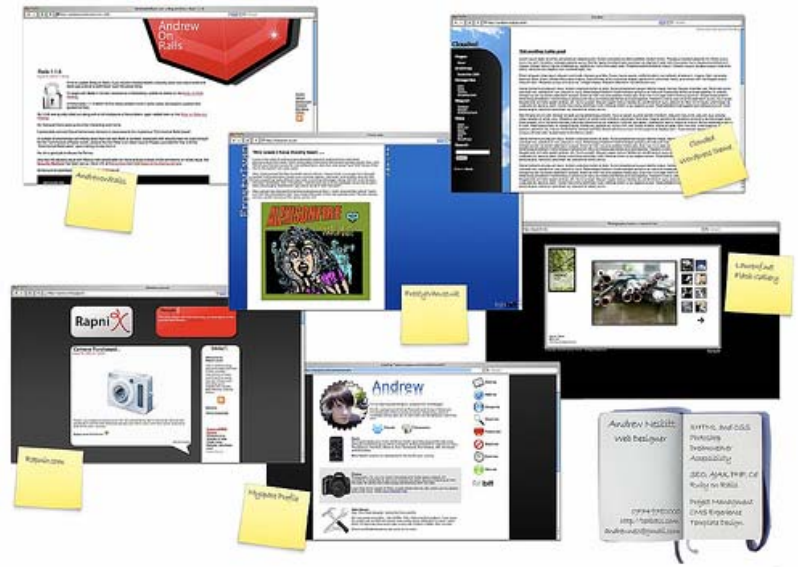
Electronic Portfolio
Implementation Committee (ePIC)

Recommendations and Next Steps for Implementation of Electronic Portfolios in Medical Education



September 2007

University of California, San Francisco
School of Medicine

Table of contents:

EXECUTIVE SUMMARY 3

About this Report 3

Need for Change 3

The Vision 3

The Definition 4

Adding Value & Integrating into the Curriculum 4

Key Findings 5

1. Portfolios will require a shift in culture 5
2. Implementation will be a complex multi-year process 5
3. There are many stakeholders in an electronic portfolio system 5
4. Pilot projects will be a vital next step 6
5. Portfolios will require robust, longitudinal advising and mentoring 6
6. Portfolios should assist medical students in the career planning and decision-making process 6

SUCCESSFUL OUTCOMES 7

Educational 7

Technical 8

STAKEHOLDERS 9

Educational 9

Technical 10

ROLE IN LEARNER EVALUATION & ASSESSMENT 11

Evaluation Standards 11

COMPONENTS & FEATURES 12

Educational Standards 12

Criteria for Evaluation of an Electronic Portfolio System 13

IMPLEMENTATION 15

Implementation Standards 15

Pilot Projects & Technologies **15**
Structure & Support for Pilots 15
Potential Technologies to Support Pilots 16

Guiding Coalition **17**
Director of Student Assessment 17
Director of Program Assessment 18
Educational Standards Working Group 18
Advisory College Mentors 18
Career Advisors 18
GME Curriculum Committee 18
Resources & Staffing 18

CONCLUSIONS & NEXT STEPS **19**

Next Steps **19**

APPENDIX **21**

Electronic Portfolio Implementation Committee **21**
About 21
Charge 21
Membership 22

Summary of Electronic Portfolio Literature **23**
Background 23
Purpose 23
Summary 23
Conclusions 26

Portfolio Application Selection and Evaluation Criteria **28**

Portfolio Examples along the Medical Education Continuum **36**
Mock Porfolio 36
ACGME Residency Portfolio 42
Fellowship Individual Development Plan Example 44

Executive Summary

About this Report

This report summarizes the work of the Electronic Portfolio Implementation Committee (ePIC) during the 2006-2007 academic year. The ePIC committee was tasked with creating educational, technical and strategic recommendations on the implementation of an electronic portfolio system in the UCSF School of Medicine undergraduate medical student curriculum. (See the appendix for the committee's complete charge and description.) While the charge was specific to undergraduate medical education, every effort was made to consider graduate and continuing medical education needs.

This report is intended to inform faculty, staff and students in the School of Medicine on current initiatives and proposed next steps for electronic portfolios in medical education.

Need for Change

Today, being a physician requires the physician to take ownership of her personal and professional growth, actively continuing her education and developing skills for lifelong learning. At all levels of medical education, expectations are increasing from both the public and the profession of medicine for the learner to actively document, communicate, engage and certify competency-based achievement. Furthermore, active, learner-centered systems are replacing passive, top-down assessment mechanisms. Together these forces are creating a need for the School of Medicine to examine current medical educational experiences and ensure that systems are in place to meet these needs.

The Vision

The portfolio allows a learner to collect and present evidence of strengths and mastery of competencies to augment the current modes of academic assessment.

The portfolio supports an interactive process with robust advising that engages a learner in self-reflective, individualized development as a professional.

The learner, with the mentor's advice, selects the best examples as proof of achievement of competency.

The learner uses the portfolio to assist in determining competency relative to benchmarks and as a decision aid in the development of further learning goals.

The Definition

"A portfolio is a purposeful and longitudinal collection of tangible evidence of learner-selected work that exhibits the learner's efforts, progress or achievement. This portfolio features the criteria for selection and judging merit, and includes evidence of learner reflection."

(Adapted from the Committee on Student Assessment's (COSA) portfolio definition from Reckase, 1995)

The definition is supported by the following standards:

- The portfolio is centered on the learner.
- Purposes for the portfolio can include personal reflection, self-directed learning, academic advancement, or application to a program or employer.
- The portfolio is longitudinal, covering the continuum of experience extending, potentially, from pre-matriculation to well into a learner's professional career.
- Reflection is the retrospective analysis of what the contents of the portfolio indicate about learning.

Adding Value & Integrating into the Curriculum

As a recent study on the impact of electronic portfolios by the BECTA group in the United Kingdom determined, "E-portfolios benefit learning most effectively when considered as an integrated part of the educational system, rather than as a discrete entity." Currrently, there are many learning experiences in the curriculum that are not necessarily part of the traditional assessment. For example, students in their first year write a description about their experience in the clinical interlude. While this essay is dicussed in their Foundations small group, it is not used any further in the curriculum. A learner could put this in her portfolio, reflect further on the experience and set some goals for herself about health care systems that emenated from that experience. With feedback from her advisor, she can undertake some activities to meet those goals. She will generate tangible evidence of what she has done and the level of achievement that she has had relative to first-year student benchmarks. This information can then be added to other measures of systems-based practice available in the traditional system.

The ability to exchange information electronically contributes to feasibility of such an approach to learning. An electronic portfolio system can thus increase the value of our educational experience without necessarily adding more work. For this to happen, a portfolio must be integrated into the assessment system. Learners need to understand how the electronic portfolio fits in the curriculum

and how a learner can enhance mentoring and career planning, as well as monitor progress and the acheivment of competency.

The strength of a portfolio is that it captures skills not measured in traditional assessment: critical thinking, self-directed learning and reflection. We envision that a student will use the portfolio to demonstrate achievement of competencies by providing evidence of her growth and development. This process is facilitated by interaction with a mentor who guides a formative process with the learner. In the end the student will strengthen her self-directed and reflective skills while being able to demonstrate competency that compliments what appears in the traditional assessment programs. This process transforms the culture of learning to one that empowers students to take responsibility for their own learning and the subsequent outcomes. It places value on the role of feedback and advisement at a higher level than is present at UCSF.

Key Findings

1. Portfolios will require a shift in culture

The successful use of electronic portfolios in learning and assessment in the School of Medicine will require the establishment and careful nurturing of a culture that supports and values the portfolio as an integral part of the educational experience. The use of electronic portfolios for formative and summative assessments and as a learning tool will require educators to make adjustments to the educational experiences offered in the curriculum. Electronic portfolios cannot simply be overlaid on the existing curriculum and assessment system.

2. Implementation will be a complex multi-year process

The selection of an electronic portfolio system to support and enable the portfolio activities that will be introduced in the curriculum will be a complex and multi-year process. The committee has identified a core set of criteria to guide the evaluation and selection of an electronic portfolio system. However, the implementation and adoption process will require informing the community about portfolios, obtaining active support from the faculty, incorporating opportunities to generate evidence for a portfolio in the curriculum, developing a technology to support the effort and ensuring that students find this a meaningful and informative development and assessment process.

3. There are many stakeholders in an electronic portfolio system

There are numerous educational and technical stakeholders in a potential electronic portfolio system at UCSF and beyond. It will be important to communicate broadly with these groups as implementation of the electronic portfolio gets underway.

4. Pilot projects will be a vital next step

The selection and implementation of pilot projects and technologies will be vital and necessary first steps in implementing an electronic portfolio. The pilot projects will allow for the testing of specific features and functions of a portfolio and will further help to refine the criteria by which we may evaluate a more robust technology-enabled solution, as well as improve upon the educational processes and workflows that will make up the portfolio. Pilot projects will also directly engage members of the educational community in the use of portfolios and, if managed successfully, will help to build consensus and a shared vision for portfolios in the curriculum.

5. Portfolios will require robust, longitudinal advising and mentoring

Portfolios offer the promise of enabling learners and mentors to have rich, substantive conversations about a learner's progress over time. To be successful, the portfolio requires robust and sustained mentorship. Learners and mentors require protected time to meet regularly to use and discuss the portfolio. Mentors and advisors need to be well trained and informed about the portfolio and its purpose. This will require a substantial faculty development effort.

6. Portfolios should assist medical students in the career planning and decision-making process

Graduating medical students continually note the need for more robust career planning and decision-making tools at UCSF. The portfolio should enable and assist medical students in their career planning process and augment existing tools and services provided by UCSF.