

*PORTFOLIOS AT THE CROSSROADS:  
THE IMPACT OF EMERGING TECHNOLOGIES AND HIGH-STAKES ASSESSMENT*  
A book proposal by Helen Barrett and Joanne Carney

Abstract

Once primarily a device for presenting artistic or career-related work, portfolios have now become a common method for documenting and assessing knowledge in a wide variety of fields—but especially in education. In higher education, portfolios have become the norm in teacher education programs: Salzman, et al. (2002) report that almost 90% of schools, colleges, and departments of education use portfolios to evaluate candidates. Besides their use for preservice teachers, portfolios are used for inservice teacher professional development and the certification of exemplary teachers by school districts, states, and national organizations. Students in P-12 schools also compile portfolios of their work.

Many of these portfolio programs have now become high-stakes assessments—determining whether new teachers are to be granted certification, P-12 students have met standards for graduation, or institutions will be accredited or funded.

Portfolios have had numerous proponents who cite strong theoretical support for their use by teachers and students (i.e., Shulman, 1987, 1992, 1998; Wiggins, 1989, Yancey, 1992). Yet empirical evidence to document the effects of portfolios is sparse. At the same time, new Web and multimedia technologies are radically changing the nature of portfolios. Once predominantly paper text, portfolios are now most likely to be digital products presented via the computer—*electronic* portfolios.

Electronic portfolios are riding a wave of popularity. With relatively ubiquitous access to the Internet and proliferation of multimedia technologies, these new forms for developing and publishing portfolios have brought both exciting and disturbing changes to the process. The very definition of “portfolio” seems to be taking on new dimensions. Whereas physical versions of portfolios took on predictable forms, electronic versions are published on the Internet, on local area networks, CD-ROM, DVD, and in other formats yet to be imagined. The contents of electronic portfolios can now include digital audio, video, and animations; these artifacts can be tied together in a hyperlinked format that allows instant navigation between standards, goals, outcomes, reflections and pieces of work.

We discern two major technological directions for electronic portfolio development; individuals and institutions are now confronted with the need to make decisions about which of these to choose: (1) generic software tools found on desktop computers and published in a variety of formats, or (2) customized (or commercial) systems that are accessible only over a local area or wide area network (Gibson & Barrett, 2003). These online storage systems are often accompanied by a data management system that allows aggregation of portfolio data. Often, what some institutions call electronic portfolios might more realistically be called assessment management systems.

There are many reasons to develop a portfolio: learning, assessment, marketing/employment (Wolf, 1999; Hartnell-Young & Morriss, (1999). However, the integration of information technology, plus new accountability requirements on schools and colleges has, in many cases, narrowed the focus of electronic portfolios to become online assessment management systems. (Barrett, 2004). The implementation of portfolios using emerging technologies is changing the very nature of the portfolio concept. Thus, the title, “Portfolios at the Crossroads.” Will learners experience the power of the portfolio process as a learning tool, or will the institutional adoption of electronic portfolios to meet high stakes accountability mandates supplant the needs of learners? Will we lose the power of the portfolio as a story of learning to the use of the portfolio as a way to check off a long list of standards? Or will the power of the technology help learners tell the story of their learning in ways not possible on paper?

The current literature on assessment differentiates assessment of learning from assessment for learning (Stiggins, 2002; Davies & LeMahieu, 2003; LeMahieu, 2004). Portfolios are seen as a panacea for both of these assessment needs, without consideration for the decisions and dilemmas involved with these diverse purposes. The commercial marketplace has produced technological products that are being sold to administrators based on institutions’ short-term accountability mandates, often without regard to the lifelong learning needs of students. This book will provide a selective review of the literature on portfolios, issues of using portfolios for both types of assessment, the implementation and assessment of electronic portfolios, and practical suggestions for classroom-based research and evaluation.

This book is a guide for all those who seek to make wise decisions about electronic portfolios. We seek to help teachers, administrators, policymakers, software designers—recognize their assumptions about the nature of portfolios, consider the implications of their portfolio decisions, and confront the dilemmas associated with their choices about portfolio purpose, audience, technology, and the use of the device for high-stakes assessment.

This book will look at how these new technologies and accountability mandates have impacted the portfolio development process. The first section will explore the definitions of “portfolio” as well as “electronic portfolio.” Included will be the competing theories and paradigms that are driving the implementation of electronic portfolios, primarily in education. Another counterpoint to the assessment/accountability viewpoint will be a discussion of “portfolio as story” and a viewpoint across the lifespan, from early childhood to post-retirement years. The authors will also tie the development of electronic portfolios into the prevailing theories of learning in education today.

The second section will explore the decisions and dilemmas faced by individuals and institutions adopting electronic portfolios. In addition to an in-depth discussion of the two directions in electronic portfolio development, there will be a chapter on the dilemmas faced by individuals and institutions implementing these new tools. Another part of this section is an in-depth discussion of the legal and psychometric issues of “portfolio as test,” as high stakes assessment, specifically in teacher education. There will be a discussion of the decision factors to help individuals or institutions decide which purpose and approach works best for them.

The third section will contain a collection of case studies of implementation and summaries of some of the limited relevant research that has been conducted. Interesting case studies presented at recent education conferences will be included, as well as perspectives from across the globe.

A final section will include the authors' conclusions, analysis and synthesis of the state of electronic portfolio development in 2004. The "Crossroads" or decision points will be addressed in depth, addressing the core values that made paper-based portfolios a powerful tool in learning, and the impact that emerging technologies are having on the methodology. This section will provide practical suggestions for managing the decisions, implementation and evaluation of electronic portfolios in Secondary Schools or Higher Education.

The Appendix will describe some of the tools and technologies being used to develop electronic portfolios.

Some of the chapters will need negotiation with journals that originally published the work. Some chapters will be written specifically for this work.

## Project Proposal

### **Need:**

*Why this project is being developed. Why people need help on the topic at this time. How the topic is of increasing rather than passing or declining importance.*

Portfolios have now become a common method for developing, documenting and assessing knowledge in a wide variety of fields. Many portfolios have now become high-stakes assessments—determining whether new teachers are to be granted certification, P-12 students have met standards for graduation, or institutions will be accredited or funded. At the same time, new Web and multimedia technologies are radically changing the nature of portfolios. Once predominantly paper text, portfolios are now most likely to be digital products presented via the computer—*electronic* portfolios.

Electronic portfolios are now riding a wave of popularity, bringing both exciting and disturbing changes to the process. These emerging technologies show signs of changing the very nature of the portfolio concept. The commercial marketplace has produced technological products that are being sold to administrators based on institutions' short-term accountability mandates, often without regard to the lifelong learning needs of students. Will learners experience the power of the portfolio process as a learning tool, or will the institutional adoption of electronic portfolios to meet high stakes accountability mandates supplant the needs of learners? Will we lose the power of the portfolio as a story of learning to the use of the portfolio as a way to check off a long list of standards? Or will the power of the technology help learners tell the story of their learning in ways not possible on paper?

### **Purpose:**

*What the work is designed to accomplish. How it meets the need identified.*

This book is intended a guide for all those who seek to make wise decisions about electronic portfolios. It will help teachers, administrators, policymakers, software designers, and measurement specialists recognize their assumptions about the nature of portfolios, consider the implications of their portfolio decisions, and confront the dilemmas associated with their choices about portfolio purpose, audience, technology, and the use of the device for high-stakes assessment.

### **Contribution:**

*What new information is offered. Ways the work adds to current knowledge and practice.*

This book by leaders in the field of electronic portfolios incisively raises the issues facing those who seek to use portfolios for learning and assessment. It brings together seminal writings, provocative new articles, theoretical pieces, unpublished research, and implementation reports on a host of electronic portfolio programs.

### **Intended Audiences:**

Primary audience: P-12 and higher education administrators, teacher educators. P-12 teachers, policymakers, directors of assessment and evaluation

Secondary audience: software designers

**Uses:**

*What the work will help the audiences to do, understand, improve, carry out...*

*Uses for the practitioner audience:* this book will help teachers, administrators, policymakers, software designers, and measurement specialists understand the nature of the decisions and dilemmas they face in using portfolios for learning and assessment. This knowledge will help them identify purpose and audience, choose appropriate technologies, and balance the demands for accountability with e-portfolio's support of assessment for learning.

*Uses for the academic audiences:* this book will present unpublished research and provocative theoretical arguments that will contribute significantly to discourse in the fields of assessment and learning.

**Knowledge Base**

*The research or experience base for the information in the project*

*Special studies or previous work relevant to the project*

Helen Barrett has published a web site on Electronic Portfolios since 1994 (<http://electronicportfolios.org>), recently adding an Expert Showcase on Electronic Portfolios to the Apple Learning Interchange website. For the last three years, she has traveled extensively for the International Society for Technology in Education, meeting with more than 50 Teacher Education programs throughout the U.S., assisting them with the decisions they are making about implementing electronic portfolios. She is sought internationally as a keynote speaker on electronic portfolios in education. Her publications have appeared in journals nationally and internationally.

Joanne Carney's dissertation research is one of very few rigorous empirical studies of electronic portfolios done to date. As a PT3 director for Mercyhurst College she designed and inaugurated an electronic portfolio system using generic tools. In her present position at Western Washington University she is currently a member of the Woodring College of Education Portfolio Work Group and is leading an effort to research the electronic portfolio being inaugurated by the Elementary Education Department.

**Title Possibilities**

- Portfolios at the Crossroads: The Impact of Emerging Technologies and High Stakes Accountability
- The Power of Electronic Portfolios: Confronting the Dilemmas of Emerging Technologies and High Stakes Assessment

**Length**

Number of double-spaced, typewritten pages  
unknown

**Outline of Contents and Chapter-by-Chapter Descriptions****Sample Chapters**

See pages that follow.

**Format:**

Multi-chapter book

**Related and Competing Works** *(and why they are not adequate to meet the need identified, how work will differ or be superior):*

There are currently no books focused on the decisions and dilemmas of portfolios (paper or electronic). This book is exceptional for two reasons: first, because of the authors' extensive experience with e-portfolio implementation and research; and, second due to the manner in which this book combines theoretical discussion with practical guidance for e-portfolio decision-makers.

**Potential Text Adoption:**

unknown

**Timetable:**

Major components available now; complete manuscript presented within six months of contract.

**Other Publishers****Background Information on Authors:**

**Helen Barrett, Ph.D.** is on the faculty of the College of Education at the University of Alaska Anchorage and has been researching electronic portfolios since 1991, publishing a website on Technology and Alternative Assessment since 1995 (<http://electronicportfolios.com>). Dr. Barrett has been involved in Educational Technology and Staff Development in Alaska since 1983, first as Staff Development Coordinator with the Fairbanks School District and now with the University of Alaska Anchorage. She was in charge of Educational Technology programs for the School of Education and initiated the development of UAA's New Media Center for campus-wide faculty development.

As the Assessment Coordinator for the International Society for Technology in Education's National Educational Technology Standards for Teachers (ISTE NETS•T) Project, she has been developing strategies and resources to assess teacher technology competence. She also served as Vice President for Assessment and E-Folios for the Society for Information Technology and Teacher Education (SITE). Through the Educause/NLII/AAHE Community of Practice, she is providing leadership to define pedagogical specifications for online portfolio systems.

Over the last five years, Dr. Barrett has written several successful federal technology grants, the most recent through ISTE to support technology and assessment in teacher education programs throughout the United States, providing training and technical assistance on using electronic portfolios to assess achievement of teaching standards. She is on loan to ISTE on a full time basis for the duration of this PT3 Catalyst Grant (2001-2004).

Dr. Barrett's presentations at numerous regional and national conferences have explored the emerging field of technology and alternative assessment and her authoritative articles have appeared in books, journals and proceedings published by ISTE, AACE, AAHE, and WCCE. She recently produced a multimedia CD-ROM-based Electronic Portfolio Handbook. Her research about electronic portfolios began with a study of K-12 student e-portfolios for the Alaska Department of Education in the early 90s. In the mid-90s, her research focus changed to electronic teacher portfolios, and she is currently exploring both high school graduation portfolios and family involvement in e-portfolio development in early childhood education. This newest research focuses on how schools can meet the Parent Involvement goal of NCLB through the collaborative development of electronic portfolios to communicate authentic student learning related to standards, goals or outcomes.

**Joanne Carney, Ph.D.** is an Assistant Professor of Instructional Technology and Elementary Education at Western Washington University. She holds a doctorate in Educational Communications and Technology from the University of Washington, where she did dissertation research on electronic and traditional portfolios as tools for teacher knowledge representation and reflective thinking. Other research includes studies of the reading of digital media, design of teacher professional development, integration of technology into pedagogy, and the structuring of learning communities. She is currently an evaluator for the NO LIMIT! Project, a standards-based reform initiative designed to improve middle school mathematics teaching through the use of technology.

Prior to taking her position at Western Washington University, Dr. Carney was a faculty member at Mercyhurst College, where for two years she was a director of *Links to the Future*, a PT3 project. Dr. Carney also directed Mercyhurst's Innovative Teachers' Program, a professional development initiative sponsored by Microsoft/AACTE.

Carney has also collaborated with K-12 teachers and school districts on many other projects relating to technology, effective instructional methods, and assessment. She herself has extensive teaching experience in different educational settings: for more than 15 years she taught English and literature in grades 6 through 10. She first began using portfolio assessment extensively in her secondary classroom after her participation in the Northwest Pennsylvania Writing Project in 1990. Carney also taught technical communication and electronic portfolio design at the University of Washington before becoming a teacher educator.

Dr. Carney has given presentations on electronic portfolios at many national conferences, including AERA, SITE, NECC, and AAHE. Her experience with assessment and evaluation includes work with portfolios and standards-based assessment as a member of the Pennsylvania leadership team for the New Standards Project from 1992 to 1994. She is currently the Assistant Vice-President for Assessment and E-Folios for the Society for Information Technology and Teacher Education (SITE).

Dr. Carney has published several articles on electronic portfolios; her article, "Integrating Technology into Constructivist Classrooms: An Examination of One Model for Teacher Development," was published in the *Journal of Computing in Teacher Education*, and in 1998 received an award for research from ISTE's SIG for Teacher Educators.

## Tentative Table of Contents

### Preface - Our developmental journeys with e-portfolios: 1990 to the present

- Helen Barrett
  - My experiences with e-portfolios at UAA, including my own e-portfolio
  - My PT3 grant experiences at UAA and ISTE
  - Family Portfolios, elementary & early childhood portfolios
  - Digital Storytelling
  - International Perspectives (Singapore, Europe, Canada)
  - The changes I've seen in the field since 1991
- Joanne Carney
  - K-12 teacher – NW PA Writing Project + 11 computers in my classroom – using computers to create a learner-centered classroom
  - New Standards Project
  - Graduate Program TA and Dissertation
  - Teacher Ed Faculty – PT3 grant at Mercyhurst plus now at WWU

### PART 1: DEFINITIONS – VISION, ASSUMPTIONS AND PARADIGMS

#### Chapter 1—What Is a Portfolio? (HB)

- Definitions (including metaphors <http://electronicportfolios.org/metaphors.html> )
- Multiple purposes and audiences and contexts (most of this content is online at: <http://electronicportfolios.org/portfolios/encyclopediaentry.htm>
- History of portfolios in education

Theories, Assumptions and Paradigms (most of this section is online at

- <http://electronicportfolios.org/systems/paradigms.html>
- Behaviorism & Constructivism (portfolio as worksheet/portfolio as exploration/project)
- Hermeneutics & Psychometrics (portfolio as story vs. portfolio as test)

#### Chapter 2—What Is an E-Portfolio? (HB)

- Definitions and history of electronic portfolios
- Portfolios vs. assessment management systems
- Common tools vs. systems
- Most of this chapter is online at <http://electronicportfolios.org/systems/concerns.html>

#### Chapter 3 – Paulson & Paulson – Portfolios: Stories of Knowing -- ERIC ED377209

**Abstract:** Portfolios are useful in developing a personal set of rules for good communication and for reflecting on one's performance over time. As a purposeful, interrelated collection of student work the portfolio shows student efforts, progress, and self-reflection. The article uses storytelling as a metaphor to show what portfolios are and what they can do. The Cognitive Model for Assessing Portfolios is described which takes into account the three dimensions of the portfolio: its stakeholders, activities, and history. Stakeholders are the author, publisher, and audience, and activities are what the student has to think about to make the portfolio tell the story. History recognizes the changes that take place during the endeavor. The historical dimension allows the inference that portfolios are chronicles of knowing. Development of the portfolio is like a journey. One figure illustrates the model. (Contains 11 references.) (SLD)

Note: Paper presented at the Annual Meeting of the Claremont Reading Conference (54th, March 1991).

#### Chapter 4—Electronic Portfolios: Digital Stories of Deep Learning (HB)

- Assessment of and for Learning
- The importance of reflection in portfolios to support learning
- Digital storytelling as reflection on learning
- Learning portfolios and Weblogs [add David Tosh's Learning Landscape? as another chapter here?]
- Most of this chapter is online at <http://electronicportfolios.org/digistory/epstory.html>



## PART II A- DECISIONS AND DILEMMAS – Implications of our technology choices

### Chapter 5—Campfires Around Which We Tell Our Stories: Confronting the Dilemmas of Teacher Portfolios and New Technologies (JC)

"Technology is the campfire around which we tell our stories," says musician and performance artist Laurie Anderson. If that be so, what tales will be shared in the flickering glow of teachers' electronic portfolios? Will web and multimedia technologies be used to help teachers capture their knowledge of practice and share it in ways not possible with older technologies? Or will the audience gathered around electronic portfolios hear few meaningful stories because we have failed to see the dilemmas posed by these new technologies and made the complex decisions necessary to use our tools wisely?

In this article I argue that we must recognize the dilemmas of portfolios--those authored with traditional tools as well as with new digital technologies and make careful decisions to address problematic issues. The rapidity with which electronic portfolios are being adopted by colleges of education, school districts, and other agencies gives us special reason to pause, step back, and consider the implications of web and CD technologies. If we fail to recall the purposes for which portfolios were proposed, and instead allow new hardware, software, or evaluation mandates to drive our use of electronic portfolios, we may find they have become "empty containers" (Barrett, 2002c), not the warm, "living history of a teaching and learning life" (Wilcox & Tomei, 1999, p. 5) that proponents had hoped they would become.

Currently online at: <http://electronicportfolios.org/campfires.htm>

### Chapter 6—Directions in Portfolio Development (DG)

This article explores the advantages and trade-offs of two paths to the development of electronic portfolios – using generic tools and using customized systems. The analysis assumes that the goal of electronic portfolios is to stay focused on the quality of work by a learner and the valid alignment of their work to the standards and goals of education. A comparison of the “best of all worlds” scenarios for both approaches shows that the two approaches each have important strengths that need to be weighed during the process of program planning. (Originally published as: Gibson, D. & Barrett, H. (2003). Directions in electronic portfolio development. *Contemporary Issues in Technology and Teacher Education*, [Online serial], 2(4). Available: <http://www.citejournal.org/vol2/iss4/general/article3.cfm>

## PART IIB – DECISIONS AND DILEMMAS – Implications of our assessment choices

### Chapter 7 – Classroom-Based Measurement and Portfolio Assessment – Victor Nolet. Originally published in *Diagnostique* 18(1), 5-26 (1992)

**Abstract:** Portfolio assessment is an integral component of the current movement toward classroom-based performance assessments. A variety of descriptions have been presented in the literature, but little consensus exists regarding the goals or procedures for using portfolio assessment. An empirical basis for using portfolio assessment for a range of instructional decisions is virtually nonexistent. This article presents a conceptual model in which portfolio assessment is viewed as a process of collecting multiple forms of data to support inferences about student performance in a skill or content area that cannot be sampled directly by a single measure. In this respect, portfolio assessment is viewed as analogous to the process of construct validation. The suggested model of portfolio assessment serves as a framework for clarifying the goals of instruction and aligning these goals with classroom-based assessment procedures that support individual referenced decisions. The model also occasions an agenda for research and training.

### Chapter 8—Portfolios, the Pied Piper of Teacher Certification Assessments: Legal and Psychometric Issues (Wilkerson & Lang)

Since about 90% of schools, colleges, and departments of education are currently using portfolios of one form or another as decision-making tools for standards-based decisions regarding certification or licensure (as well as NCATE accreditation), it is appropriate to explore the legal and psychometric aspects of this assessment device. The authors demonstrate that portfolios being used in a high-stakes context are

technically testing devices and therefore need to meet psychometric standards of validity, reliability, fairness, and absence of bias. These standards, along with federal law, form the cornerstone for legal challenges to high-stakes decisions when students are denied a diploma or license based on the results of the assessment. The conclusion includes a list of requirements and caveats for using portfolios for graduation and certification decisions in a standards-based environment that help institutions reduce exposure to potential litigation.

Originally citation: Wilkerson, J.R., & Lang, W.S. (2003, December 3). Portfolios, the Pied Piper of teacher certification assessments: Legal and psychometric issues. *Education Policy Analysis Archives*, 11(45). Retrieved [Date] from <http://epaa.asu.edu/epaa/v11n45/>

## Chapter 9— Paulson & Paulson “The Ins and Outs of Using Portfolios to Assess Performance” ERIC ED334250

**Abstract:** Concerns about using portfolios (collections of student work showing student effort, progress, or achievement in one or more areas) in large-scale assessments are addressed. The products in a portfolio allow the reviewer to make inferences about the process of student learning. Hence, a portfolio should include information about the activities that produced the portfolio and a narrative in which the student describes the learning that took place. Stakeholders in the portfolio review process are identified, and the role of instructional goals and determination of contents of the portfolio are discussed. Standardized input-output assessments that evaluators usually use are viewed as poorly suited to portfolios. The implications of chaos theory for educational measurement and, more specifically, portfolio evaluation is outlined. The use of multiple perspectives and differing criteria in analyzing portfolios are illustrated via a comparison with movie reviewers. The place of reliability and validity assessments in portfolio assessments and the use of generalizability theory are discussed. Two methods that accommodate the diversity required of portfolio assessments are outlined: (1) the Environmental Beauty Estimation Method used by the United States Forest Service, and (2) the Comparative Method used by sociologists in studying comparative political systems. The use of scaling techniques and the importance of holistic as well as analytic judgments are discussed. A 39-item list of references is included. (TJH)

Note: Expanded version of a paper presented at the Joint Annual Meeting of the National Council of Measurement in Education and the National Association of Test Directors (Chicago, IL, April 4-6, 1991).

## PART III: STORIES OF DECISION-MAKING, IMPLEMENTATION AND EVALUATION

### Chapter 10 - My journey with e-portfolios – (HB – to be written as part of final PT3 grant report)

- In-depth experiences with e-portfolios during my PT3 grant
- Assessment & Technology Forum Gallery Walk - Summary for 3 years
- EPAC, OSPI, NLII
- UW—Catalyst (Farally & Lewis)
- Snoqualmie Valley & ESD 113
- Teacher Ed Programs I worked with
- International Perspectives
  - France (Euro-Portfolio Consortium & Eifel)
  - Australia (Elizabeth Hartnell-Young)
  - Wales (Career Wales, Capture Wales)
  - Canada (Kathryn Barker—Future Ed & Lifia)
  - England – Center Recording Achievement

### Chapter 11 - Individual Stories of Decision-Making (JC + HB)

- Western Washington U. Portfolio working group + possible WIKI discussion
- CSU process (final report to deans)
- BYU (SIGTE Journal Spring 2004 plus aftermath) and others...

Chapter 12 - What Do We Know About the Effects and Effectiveness of Portfolios? (JC)  
(this chapter will be a significant revision of the AERA paper online here, to reflect a different audience and continuing development of the author's ideas: <http://it.wce.wvu.edu/carney/Presentations/presentations.html>)

- Lit research review
- Ethnography & Qualitative Research vs. Quantitative (Naturalistic Inquiry vs. Positivistic paradigm)
- Summary of ongoing research (AAHE)
- In the age of NCLB – justifying e-portfolios as assessment for learning
- Evaluation of e-portfolio implementation – rigorous qualitative evaluation (Zeichner & Wray) – document effectiveness for policymakers – action research in classrooms
- Intersections that reveal “gems of insights”
- SITE 2004 presentation– Theoretical knowledge in e-portfolios
- Missouri AERA 2001 study?

Chapter 13 – Coming up Short: Recommendations for Evaluating the Impact of Electronic Portfolio Systems(?) by Bruce Havelock, RMC Research Corporation.

- Personal Learning Planner Evaluation Study

#### PART IV. PUTTING THEORY INTO PRACTICE

Chapter 14 – Assessing learning with electronic portfolios (student, teacher candidate, professional development) (HB)

- Carol Derham's dissertation – teacher ed
- Alverno example
- Secondary school example – Mt. Edgecumb – Todd Bergman
- Looking at rubrics, checklists

Chapter 15—To *E* or not to *E* (HB)

- “Most paper-based portfolios today begin electronically, so making the shift to a different publishing environment is an incremental transition.”
- How to choose an approach and design an e-portfolio process
- Design considerations for software developers
- What to look for in an online system (CSU Discourse brainstorm checklist reprint? – contact Lou Zweier)
- Matching your needs and available tools (DePaul University example from AACTE 2004)
- FuturEd Consumer Guide and how it was created (with Kathryn Chang Barker)
- Excerpt from my common tools article (Learning & Leading with Technology, April 2000)
- NLII/IMS Standards under development
- Technologies that engage learners – impact on intrinsic motivation
- Designing Staff Development to implement e-portfolios in secondary schools and higher ed
- Making the best of a portfolio mandate (B.C. example)

Chapter 16 – The Crossroads - Finding a balance in the whole process (JC)

- How to make good decisions about portfolio implementation to help you meet your portfolio goals.
- How to deal with the dilemmas identified in the literature.
- How to balance the needs of the individual vs. the needs of the institution
- How to recognize how technologies afford and constrain the portfolio process.
- Addressing multiple audiences and purposes... and lots more

#### APPENDIX

Software tools (w/screenshots) (HB)

- Commercial tools
- Home-grown