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Section I ePortfolio Thinking and Technology

This section includes a series of chapters focusing on the conceptual aspects of electronic portfolio systems and elaborates on how the innovative use of the ePortfolio can advance teaching and learning. Authors present their views of the current and potential uses for such systems in an effort to define the “big picture” for practical applications of ePortfolios. Chapters are written by conceptual thinkers, including academic leaders such as provosts within the higher education institutions, administrators within departments of education responsible for K-12 education, and experts in countries where ePortfolio usage is promoted by government. The section finally explores the technological aspects of the ePortfolio framework surrounding how the ePortfolio system as a new application software can be designed, built, and developed to operate either within an existing learning management system or as an independent enterprise systems, and authors discuss topics such as technical standards and functional interoperability among such systems.

Chapter I

Instructional Roles of Electronic Portfolios / <i>Greg Sherman</i>	1
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This chapter presents an overview of 11 different ways in which electronic portfolios can support the teaching and learning process. Too often, discussion about the general instructional nature of electronic portfolios is reduced to two distinct roles: portfolios as a means of assessing specific student performance, and portfolios as a showcase for outstanding student accomplishments. This chapter summarizes how electronic portfolios can contribute to the design and implementation of effective instruction in many ways by assuming a variety of roles that go beyond a traditional approach to portfolio use in the classroom. These roles include artifact creation as meaningful context, goal-setting, practice with a purpose, examples and non-examples, assessment, reflection, communication, instructor planning and management tool, learner organization tool, interdisciplinary teaching and learning, and historical records/stories as role models. Examples of portfolio requirements and assessment strategies from a higher education teacher preparation program are used to illustrate these different roles.

Chapter II

ePortfolios: Beyond Assessment / <i>Teresa Acosta and Youmei Liu</i>	15
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This chapter focuses on how ePortfolios: (1) shift the locus of control from instructor to student, (2) change curriculum design, and (3) develop social capital. ePortfolios are not only tools for assessing learning and teaching, but more importantly they promote reform of the traditional educational system, bridge the divide between the academy and society, and develop social capital for the best interest of the global community. This chapter will concentrate on the process of learning portfolio and the potential it has in its modern form, the ePortfolio.

Chapter III

The Learning Landscape: A Conceptual Framework for ePortfolios / <i>David Tosh, Ben Werdmuller, Helen L. Chen, Tracy Penny Light, and Jeff Haywood</i>	24
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Adoption of ePortfolio tools in higher education has been implemented in individual courses, departments, schools, and across institutions to demonstrate evidence of more authentic student work, show student progress over time, and represent collections of best work. New technologies have enhanced the learning affordances of ePortfolios to include its usefulness as a tool to support integration, synthesis, and re-use of formal and informal learning experiences. The challenge for educators is to develop new pedagogical approaches to encourage students to recognize and extend the value of ePortfolio software beyond simple course applications and outside the context of their undergraduate education. This chapter describes the Learning Landscape model, a conceptual framework which promotes a view of “learning” that supersedes the rigid structure of degree outlines and requirements by taking advantage of a variety of technologies to incorporate overlapping experiences through social networking among faculty, mentors, peers, and employers and resources.

Chapter IV

ePortfolios: Constructing Meaning Across Time, Space, and Curriculum / <i>Colleen Carmean and Alice Christie</i>	33
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This chapter explores research on ePortfolios from the perspective of defining, evaluating, and demonstrating value to enduring learning. It makes a case for the public/private container and the value to the learner of digital artifact creation, self-reflection, and presentation. It explores the use and challenges of ePortfolios in instruction and makes a case for the ePortfolio as an effective tool for knowledge creation. Finally, the authors examine the question of assessment in implementation of an enterprise ePortfolio: the value of learner assessment, peer and public assessment, and the need for institutional assessment of the ePortfolio.

Chapter V

Perspectives on a Visual Map-Based Electronic Portfolio System / <i>Paul Kim</i>	44
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This chapter introduces portfolio system design perspectives that incorporate concept mapping and the map-based user interface. It also presents a prototype of a portfolio system that has been developed based on the discussed perspectives, along with its capacities and the lessons learned in the design and pilot-testing processes. The author argues that a concept map-based design can enhance a portfolio system, and a concept map as a visual aid can be an efficient user interface for students to better organize, present, archive, and retrieve multimedia contents. This chapter will help educators understand the benefits of incorporating the

principles of concept mapping in the design of portfolio systems, and how the system capacities may support constructivist learning environments and qualitative assessment strategies linked to curriculum standards.

Chapter VI

ePortfolio Thinking: A Provost Perspective / *Ronald J. Henry*..... 54

This chapter introduces an electronic portfolio (ePortfolio) that includes student work, student reflection, and faculty comments as a means of capturing student progress through a program of study. It argues that with an ePortfolio, a student could record progress through a program of study and then graduate on demonstrated mastery of learning outcomes rather than on credits earned and hours in class. Alternatively, it could contain evidence of mastery of a particular literacy or skill that might give a student a credential that is more than a course but less than a degree. Further, an ePortfolio has the potential to enhance advising and admissions practices for students transferring from one institution to another. Once in an institution, an ePortfolio has the potential to be linked to a student tracking system, where advisers could be automatically alerted about student progress on development towards program learning outcomes and could intervene as necessary.

Chapter VII

The Promise of the Student Electronic Portfolio: A Provost's Perspective / *William M. Plater* 62

The development and pervasive adoption of student electronic portfolios have the potential to transform higher education at both the institutional and national sector levels. While much depends on the continued expansion of the ePortfolio's technological capabilities, its transformative power derives from allowing students, faculty, and institutions to actually do what heretofore they have only imagined: enable each student to have a personally managed, meaningful, coherent, integrated lifelong record of learning that demonstrates competence, transcends educational levels, and is portable across institutions of learning—formal and informal. The ePortfolio is lifelong learning co-owned and co-managed by the individual student.

Chapter VIII

ePortfolios as Learning Construction Zones: Provost's Perspective / *Kathleen O'Brien*..... 74

ePortfolios can be more than storage devices of the learner's best work when faculty develop a curriculum that integrates them across each student's academic career. This chapter describes how one version of an ePortfolio, designed using faculty-held learning principles and assumptions, helps students explore and extend their learning in a developmental manner. It also describes how a provost sees the ePortfolio system fulfilling an often neglected CAO responsibility: improving the educational effectiveness of faculty. The author also outlines other educational goals that can be met with a developmental ePortfolio system. Finally, the author comments on the downside of using such a system, but suggests that the benefits outweigh the deficits.

Chapter IX

Enhancing Self-Regulation and Goal Orientation with ePortfolios / *Jessica L. Blackburn and Milton D. Hakel* 83

This chapter reviews the self-regulatory learning and goal orientation literatures. Findings from these literatures are used to make specific recommendations for the effective design and use of electronic

portfolios in order to increase academic learning. Specifically, the authors recommend that electronic portfolios provide the means for students to set learning goals, monitor and regulate their progress toward these goals, as well as develop their self-assessment skills. Additionally, they suggest that these goals be focused on learning objectives rather than performance objectives.

Chapter X

Mining for Meaning: Teaching Students How to Reflect / Bonnie Riedinger 90

This chapter examines the challenges and benefits of using reflection in ePortfolios, and reviews strategies for teaching and encouraging deep reflection. It includes a brief history of the use of reflection in portfolios, summaries of the main types of reflection, and general approaches for the development of student reflection. Barriers to successful reflection, such as inexperienced students and faculty, student fear and distrust of reflection, formulaic responses, and time constraints will be examined, and solutions will be proposed. The effects of the ePortfolio on reflection and the possibilities offered by technological advances and new software also will be reviewed. The chapter argues that faculty must carefully construct reflection learning objectives if they expect meaningful summative or formative assessment to take place. The author hopes that the discussion of prompts, scaffolding, cycling, and other mining techniques will help instructors transform reflection theory into practice.

Chapter XI

ePortfolios: Pathway from Classroom to Career / Eleanor J. Flanigan and Susan Amirian..... 102

This chapter includes three main themes, answering basic questions of “Why,” “Where,” and “How” that are asked when discussing the development of career portfolios during a student’s academic program. The reasons why portfolios in general should be created are discussed primarily in the Rationale section. Following this is a description of ongoing programs at two universities where portfolios are an integral part of the curriculum for students in two diverse departments: Media Communications in a School of Professional Studies, and Management Information Systems in a School of Business. Finally, there is an outline of the portfolio development process with concrete suggestions on the steps to follow, the design process, and modes of distribution.

Chapter XII

Using ePortfolios to Foster Peer Assessment, Critical Thinking, and Collaboration / Heidi J. Stevenson 112

An ePortfolio is frequently seen as a space for electronically compiling and storing student work. After completing assignments, students generally submit their ePortfolio to an instructor, prospective employer, or other assessor. This chapter questions if the typical use of ePortfolios could be modified to create opportunities to encourage students (elementary school through graduate school) to engage in critical thinking, provide feedback to their peers, and/or other opportunities to contribute to the learning process.

Chapter XIII

ePortfolios for Knowledge and Learning / Elizabeth Hartnell-Young 125

In the 21st century, we talk of knowledge as the new currency, and knowledge building as the work to be done in learning organizations. While knowledge building is activity directed outward towards the creation of

knowledge itself, learning is a personal consequence of this process, the aspect that is directed to enhancing individual abilities and dispositions. This chapter considers how ePortfolios can support four aspects of lifelong learning in the knowledge economy: engagement with technology, representations of identity, developing critical multiliteracies, and global and local mobility. It argues that the focus should be on lifelong learners' capacity to create and communicate with digital technologies, rather than on rigid frameworks that reduce ePortfolio development to a series of pre-packaged choices.

Chapter XIV

ePortfolio Decisions and Dilemmas / *David Gibson*..... 135

This chapter combines existing ideas and metaphors from recent portfolio literature into a new framework for thinking about the decisions and dilemmas of ePortfolios. It argues that since the definition of "ePortfolio" covers a spectrum of approaches to the challenge of documenting and assessing student knowledge and skills, the wide array of differing audiences and purposes of assessment leads to many decisions about a portfolio system's mix of content and message ownership, review and validation processes, and expectations about media. In addition, the unique role of technology in the mediation of action and learning adds to the dilemmas inherent in decision making about the system's artifacts. It is hoped that the framework offers a new analytical perspective and a set of questions to guide people in building more effective ePortfolio systems.

Chapter XV

Development Issues for PDP with ePortfolios: Web Services and Skills / *Simon Grant, Adam Marshall, Janet Strivens, and Roger Clark*..... 146

This chapter describes approaches firstly towards a service-oriented architecture for personal development planning (PDP), and secondly towards representing skills for interoperability. We outline a personal information aggregation and distribution service (PIADS) which serves as the key concept within a distributed approach to storing information suitable for ePortfolios and PDP, and using it through Web services. Our skills "meta-framework" is outlined as a long-term practical solution to the challenge of widely diverse descriptions of skills. It uses a published specification and elaborates this to distinguish between conceptual "competency" definitions and operational "educational objective" definitions. If these issues are not addressed, the practical value of ePortfolios for PDP would be limited. Thus the chapter is of particular importance to those planning and designing future ePortfolio systems and services.

Chapter XVI

Using ePortfolios to Enhance Reflective Learning and Development / *Bob Doig, Barbara Illsley, Joseph McLuckie, and Richard Parsons* 158

This chapter argues that it is essential that ePortfolio development is driven by pedagogical considerations, thus ensuring the effective use of these technologies to support learning. Drawing on experience of implementing ePortfolios in an institutional context, the chapter considers how best to meet the needs of learners within a system of effective eLearning support and emphasizes the key role of developing reflective writing skills if the ePortfolio is to be an effective way of learning. Creating and deploying key learning activities that effectively use ePortfolios is now a much greater constraint to the correct use of ePortfolios in learning than the technical design or capabilities of ePortfolio software.

Chapter XVII

ePortfolio: Constructing Learning / *Isabelle Marcoul-Burlinson* 168

This chapter examines the concept and the uses of electronic portfolios as pedagogical tools for adult learners, particularly in UK Higher Education, where it is part of the personal development plan (PDP) agenda on lifelong learning and widening participation. Its development relies on an environment that favors the learners' active involvement in the learning process as well as learning outcomes through reflection and collaborative participation. A better understanding of the pedagogical implications of such portfolios and their learning processes is needed and will be discussed in this chapter.

Chapter XVIII

Electronic Portfolio Initiatives: A Flashlight Guide to Planning and Formative Evaluation /
Stephen C. Ehrmann 180

The goal of this chapter is to help the reader learn to use research and evaluative data to select which activities improve an ePortfolio initiative; accelerate the pace at which people within an institution begin to use ePortfolios for those activities; and limit the cost, stress, and risk associated with carrying out those activities, including the ePortfolio infrastructure that supports them.

Chapter XIX

An Overview of Student ePortfolio Functions / *Phil Walz* 194

The possible uses of student ePortfolios are varied, complex, and novel, making it difficult for scholars and professionals alike to capture an overall picture of this new technology. This chapter will address this concern by presenting a very straightforward overview of student ePortfolio functions, according to what have been identified as their five most basic functions: (1) storage, (2) information management, (3) connections, (4) communication, and (5) development. Each of these functions will be clarified with examples of practical applications, grounded in the real needs of undergraduate students at the University of California at Berkeley. Taken together, the functionality of student ePortfolios, if used to its full potential, could transform higher education by placing students at the center of their learning, better prepared to draw connections across subject matters and across the many realms of student life.

Chapter XX

eLearning Tools for ePortfolios / *Uri Shafrir, Masha Etkind, and Jutta Treviranus* 206

This chapter describes eLearning tools that focus the learner's attention on meaning, rather than rote learning of text and rehearsing problem-solving procedures. These tools are the Interactive Concept Discovery Learning Tool and the Meaning Equivalence Reusable Learning Object (MERLO). Results of several evaluative implementations of these novel instructional methodologies, which encourage learners to interact directly with the conceptual content of to-beLearned material, demonstrate their potential to enhance learning outcomes and to provide authentic, credible, evidence-based demonstration of mastery of learning and formative assessments of learning processes and outcomes for inclusion in "learning ePortfolios."

Chapter XXI

Toward a Framework/Data Model: From ePortfolio Thinking to Folio Culture / *Franc Feng* 217

In this exploratory contribution, the author proposes a framework for re-mapping ePortfolio research around an emergent model of engagement with information. Through an anthropological lens, he casts ePortfolio implementation within communities of practice in complex networks of actors, artifacts, and flows. His work surveys extant approaches in the ePortfolio research, identifying gaps in the literature, towards an inclusive framework around a new model reflecting the changing relationship with information, grounding the theorizing in his practice, designing and teaching online graduate courses in Cultural and New Media Studies in Education.

Chapter XXII

Integral ePortfolio Interoperability with the IMS ePortfolio Specification / *Darren Cambridge* 234

Interoperability that enables the distribution and migration of portfolios as integral wholes between venues requires the ability to describe, encode, and transmit the relationships between assets within the portfolio, and its information architecture and visual design in a format that both human and computer audiences can understand. This chapter will discern interoperability challenges fundamental to ePortfolios. It will explain how fundamental issues begin to be addressed by the IMS ePortfolio specification and will consider the challenges that lie ahead as adoption of this specification grows.

Section II ePortfolio Case Studies

Chapters within this section investigate the development of ePortfolio projects, and case studies for such projects are provided along with success rate reports. The section is subdivided progressively into three sections detailing information about ePortfolio systems in various stages of implementation: (1) reports by authors writing of investigative projects or task force findings, (2) accounts of ePortfolio trials using limited implementation, and (3) case studies revealing observations and data after full implementation of an ePortfolio system. The final chapter summarizes a survey of ePortfolio projects.

Chapter XXIII

How “White Papers” in ePortfolios Document Student’s Learning Skills / *Paul A. Fritz* 248

This chapter describes the “Undergraduate ePortfolio Project” used in the Department of Communication, University of Toledo. The author argues, from a constructivist perspective, that the success of an ePortfolio project lies in its content, not its form. Included are the theoretical underpinnings of this project, the pedagogical design, and the assessment rubrics. The pedagogical section describes how the department revised its writing assignments for the portfolio, offers suggested writing projects, describes the generic assignment sheet used by the department, and offers sample student papers. The assessment section presents specific rubrics for evaluating the practical nature of portfolio writings.

Chapter XXIV

Purpose, Audience, and Engagement in Spelman College's eFolio Project / *Margaret Price* 259

This chapter reports on the pilot phase of a longitudinal study that tracks Spelman College's transition from a paper-based First-Year Writing Portfolio to an electronically based one. It presents data from interviews with students, faculty, and administrators, as well as surveys administered to a pilot section of students composing eFolios. These data indicate that the transition will require a re-evaluation of the First-Year Writing Portfolio's current conception of audience and purpose. Further, they indicate that assigners of eFolios should discuss audience and purpose directly with all stakeholders in the eFolio composition process, including students, administration, and faculty, since these elements may be differently conceptualized by different individuals and/or across different contexts.

Chapter XXV

Developing an ePortfolio for Health Professional Educators: A Case Study / *Mary Lawson, Debbie Kiegaldie, and Brian Jolly* 273

This chapter describes the development and implementation of an ePortfolio to support the Graduate Certificate in Health Professional Education (GCHPE) at Monash University, Australia. The GCHPE addresses the skills and knowledge of teachers working in health, and encourages the development of a professional approach to teaching practice. The ePortfolio was developed primarily to enable the preparation and sharing of reflective tasks and assessment items constructed from the workplace of the course participants, and to facilitate written peer and tutor feedback. The first interprofessional cohort completed the course in 2003. In this chapter, the development process, evaluation methods, and results of the first year of implementation will be summarized. Problems experienced in the development and implementation process are identified along with recommendations for further action.

Chapter XXVI

ePortfolios in Graduate Medical Education / *Jorge G. Ruiz, Maria H. van Zuilen, Alan Katz, Marcos Milanez, and Richard G. Tiberius* 283

Residency education is the period of clinical education that follows graduation from medical school, and prepares physicians for the independent practice of medicine. The Accreditation Council for Graduate Medical Education (ACGME) is an organization responsible for accrediting residency education programs. The ACGME is increasingly emphasizing educational outcomes in the accreditation process. The authors will discuss the experience of GME programs using ePortfolios for both formative and summative evaluation of residents and the integration of ePortfolios as part of institutions' learning management systems. ePortfolios can be especially useful for evaluating and documenting mastery of educational outcomes such as practice-based improvement, use of scientific evidence in patient care, and professional and ethical behaviors that are difficult to evaluate using traditional assessment instruments. The authors also review the literature describing the use of ePortfolios as a tool that is both powerful and reflective, for the assessment of program outcomes by administrators and faculty.

Chapter XXVII

A Flexible Component-Based ePortfolio: Embedding in the Curriculum / *S. J. Cotterill, J. F. Aiton, P. M. Bradley, G. R. Hammond, A. M. McDonald, J. Struthers, and S. Whiten* 292

This chapter provides case studies of embedding the ePortfolio in the curricula of two medical schools in the UK, one of which is outcomes based, while the other uses a series of patient scenarios to inform the teaching of clinical skills within a curriculum that emphasizes the scientific basis of medicine. These case studies describe the implementation, evaluation, and process of embedding the portfolio within the respective curricula. They also illustrate the flexibility of a component-based ePortfolio to serve different pedagogic requirements. Research and evaluation issues are discussed, including an action-research approach with “fine-tuning” of technical features and pedagogy during the evaluation phase.

Chapter XXVIII

Supporting the Portfolio Process with ONNI - The Learning Journal / *Tommi Haapaniemi and Pasi Karvonen* 305

The purpose of this chapter is to describe the use of an electronic learning journal in the portfolio process and the construction of a digital portfolio. The authors discuss the problems that have arisen during the learning and tutoring process of various traditional (paper) learning journals. The problems of traditional learning journals and their tutoring have been the following: (1) low extent of tutoring and evaluation during the process; (2) when the learning journal is the object of external assessment, it is not used as a tool for profound reflection (private vs. public dimensions of the learning journal); and (3) there has been a lack of a user-friendly tools with which to construct a Web-based learning portfolio. In this chapter the authors discuss the basic elements of ONNI–The Learning Journal, as well as how this electronic tool can help in solving the problems mentioned above. ONNI is presently being experimented on at the University of Kuopio, but it will also be developed to become a tool for every Finnish college student and to better support learning from peers as well as lifelong learning.

Chapter XXIX

The ePortfolio: A Learning Tool for Pre-Service Teachers / *Martine Peters, Jacques Chevrier, Raymond LeBlanc, Gilles Fortin, and Judith Malette* 313

The study reported here explored the use of an ePortfolio in teacher education, focusing on its possibilities for development of competencies in technology. The goal was to assess this competency development over a three-month period and to examine pre-service teachers’ perception of the ePortfolio as a learning tool. Results show that pre-service teachers’ competencies with technology increase while working on the ePortfolio and that they respond favorably to the ePortfolio as a learning tool. Pre-service teachers feel that the ePortfolio fosters reflection and the development of organizational skills and self-esteem while giving them better chances of finding employment. Solutions and recommendations about improving the use of an ePortfolio as a learning tool in a teacher education program are proposed.

Chapter XXX

It was Hard Work but It was Worth It: ePortfolios in Teacher Education / *Andrea Bartlett* 327

Student ePortfolios offer both advantages and challenges for teacher educators. The purpose of this case study is to identify benefits that make the effort worthwhile. Two groups of pre-service teachers—one undergraduate and one graduate—created complex ePortfolios under the direction of a non-technology faculty member. Faculty observations and student evaluations revealed ePortfolios enhance students' educational technology learning, reflection, and collaboration. The author concludes, creating ePortfolios was “worth it,” and she provides recommendations for making ePortfolios even more valuable for pre-service teachers, their programs, and the schools in which they will someday teach.

Chapter XXXI

Using ePortfolios to Facilitate Professional Development Among Pre-Service Teachers / *Gail Ring and Sebastian Foti* 340

The purpose of this study was to examine an electronic portfolio project as it was implemented in a teacher education program in a College of Education to determine how these electronic teaching portfolios affect a student's professional development. Much of the recent portfolio research discusses portfolio implementation in an anecdotal manner, focusing on studies undertaken in a single class, or with a small population of pre-service teachers. This study investigated the implementation of an electronic portfolio project throughout a four-year period, collecting data from students enrolled in the Early Childhood, Elementary, and Secondary Education programs. It explored the impact the development of an ePortfolio had on the professional growth of these students.

Chapter XXXII

ePortfolio and Educational Change in Higher Education in the The Netherlands / *M. W. (Wijnand) Aalderink and M. H. C. H. (Marij) Veugelers* 358

This chapter describes the important role that the concept of ePortfolio plays in new pedagogical paradigms in The Netherlands. ePortfolio can be seen both as a consequence of and a stimulus for the movement towards student-centered, competence-based learning in Dutch higher education. The authors present lessons learned in ePortfolio implementation, derived from experience from the past five years in the Low Countries, both in local institutional projects and in large-scale national projects. They then describe the cases of their own universities, being Windesheim University for Professional Education and the University of Amsterdam. The chapter ends with conclusions and future developments in the field of ePortfolio in The Netherlands.

Chapter XXXIII

ePortfolio in the UK: Emerging Practice / *Colin Dalziel, Rachel Challen, and Shane Sutherland* 370

This chapter investigates the emergence of ePortfolio systems in the UK and the drivers for their adoption as part of the national agenda for lifelong learning. Beginning with a historical perspective, the chapter highlights UK initiatives that have led higher education institutions toward providing ePortfolio facilities for

their students, and highlights why ePortfolios are becoming more popular for supporting learners and learning. The authors aim to provide a context for ePortfolios in the UK, discuss the drivers for change, identify some of the issues faced by institutions, and highlight some of the differences in ePortfolio adoption between the UK and other countries.

Chapter XXXIV

Tracking Capability Using Web-Based ePortfolios in UK Schools / *Will Wharfe and Karim Derrick* 378

MAPS, the Managed Assessment Portfolio System (see <http://www.maps-ict.com>), is a Web-based ePortfolio system that was developed to help both teachers and learners, initially with a focus of helping to raise standards in the teaching and learning of information and communications technology in the UK. MAPS has since developed into a system covering all stages and subjects of school education, and is now being used in further education contexts. This chapter plots the progress of MAPS from an initial sketch idea to its present form: supporting over 57,000 student portfolios. The authors then draw out a number of lessons learned from such extensive use. The chapter finishes with a look at forthcoming ePortfolio issues and consideration of the requirements of lifelong learning ePortfolios.

Chapter XXXV

Implementing Electronic Portfolios at Bowling Green State University / *Milton D. Hakel, Mark H. Gromko, and Jessica L. Blackburn*..... 388

This chapter outlines the implementation of electronic portfolio technology as part of a university initiative to improve learning. The implementation of electronic portfolios, via Epsilen Software, is discussed in terms of key features deemed necessary by Bowling Green State University's assessment committee. One of the key features of the software is the matrix. This matrix is discussed in terms of its use for documenting student learning on the university's learning outcomes. Reactions from current users are also provided. The chapter concludes by providing the current status of electronic portfolio usage at the university and a discussion of future plans for the software.

Chapter XXXVI

Twisting the Kaleidoscope: Making Sense of ePortfolios / *Roberta Devlin-Scherer, Joseph Martinelli, and Nancy Sardone*..... 398

This exploratory study examines if student perceptions and ePortfolio products match faculty beliefs that ePortfolios are influential learning experiences. Multiple methods of data collection (survey about values and uses of ePortfolios, and content analysis of the quality of ePortfolios) are used to triangulate the results. Student ePortfolios are reviewed for level of difficulty, uniqueness, design, and depth of reflection. Multiple raters help ensure reliability. Bivariate analysis as descriptive statistics is used to determine if any relationship exists between ePortfolio rubric score and academic credits earned in computer technology courses. This research aims to inform the development process of ePortfolios across university campuses, and suggests that the investment of time and resources in this authentic assessment process is yielding some valuable results.

Chapter XXXVII

Creating a Strategy for the Implementation of the QUT ePortfolio / *David Emmett, Wendy Harper, and Kim Hauville*

410

This chapter introduces the Queensland University of Technology (QUT) ePortfolio project as an example of a successful collaboration and integration strategy within a higher education context. Following extensive piloting and testing, the portfolio was released to all students and staff late in 2004, and by May 2005 in excess of 10,000 portfolios had been commenced. This chapter will present insights into this project which reveal some key collaboration and integration strategy decisions that were taken by both the university and the portfolio design team. In order to support these insights, preliminary student, academic, and employer feedback is provided based on research carried out from 2003 to 2005. The authors hope that this chapter will provide insights that will enable other institutions to enjoy similar success.

Chapter XXXVIII

The Art of ePortfolios: Insights from the Creative Arts Experience / *Steve Dillon and Andrew Brown*

420

This chapter examines the creative production context as a vehicle to reveal the issues, problems, and complexities that may be encountered when working with ePortfolios. We utilize metaphors from the creative arts as tools to provide new perspectives and insights that may not otherwise occur in other disciplines to provide a unique critique of the performativity of ePortfolios. Through reference to case studies drawn from drama, dance, music, new media, and the visual arts, the authors' research has problematized ePortfolios from the teacher, student, institutional, and pedagogical perspectives. They identify the issues and propose approaches to resolving them, and illustrate how these ideas derive from creative arts knowledge and outline how they are transferable to other disciplines using ePortfolios based on rich media forms of presentation. In conclusion, they examine the performing arts as temporal art forms attuned to the unfolding of a narrative and examine the notion that the audience experiences the reading of a portfolio as a performance.

Chapter XXXIX

A Principle-Based ePort Goes Public (and Almost Loses its Principles!) / *Sharon J. Hamilton*

434

When an institution-wide electronic student portfolio "goes public" beyond the campus, the processes of its conceptualization, development, implementation, and evaluation appear seamlessly successful. Similar to a published manuscript, all is in place, and the tortuous paths of creation are invisible. Yet we can learn from both the steps and missteps of any innovation. This chapter describes the evolution of the Indiana University (IU) student electronic portfolio from its initial conception as a first-year "electronic report card" of student learning of core skills to a fully integrated enterprise system that enhances, documents, certifies, and evaluates learning.

Chapter XL

Community Through Constructive Learning / *Patricia McGee, Misty Sailors, and Lucretia Fraga*

447

This case study illustrates a community-based constructive learning approach to ePortfolio development, and the subsequent phenomena and outcomes that came from the initial implementation. The authors discuss why

and how an ePortfolio system was chosen, as well as faculty engagement, student engagement, and recommendations to others based on the University of Texas at San Antonio experience.

Chapter XLI

Transition to ePortfolios: A Case Study of Student Attitudes / *Corey Hickerson and Marlene Preston* 460

This project focused on student development in the freshman year as displayed in students' ePortfolios. The experimental design allowed analysis of student attitudes about ePortfolios with results that may be useful to faculty and students at other institutions. Researchers found that careful alignment of an ePortfolio with the learning goals of a course can help students to adapt easily to the new technology and recognize it as a useful academic tool.

Chapter XLII

How ePortfolios Support Development in Early Teacher Education / *Victor McNair and Kevin Marshall* 474

This chapter reports on a pilot study which examined how student teachers of a one-year Post Graduate Certificate in Education course in Northern Ireland developed reflective ePortfolios and then used them to embed ICT in their first (Induction) year as qualified teachers. Two central themes emerged. First, the process of constructing the ePortfolio developed confidence among the beginning teachers which supported them when faced with the challenges of starting teaching. Second, the ePortfolio was used to ease the transition from Initial Teacher Education to Induction, but where there is a lack of critical reflection, barriers to professional development can emerge. These issues are discussed within the context of technology policy, teacher training, and emerging technology in Northern Ireland.

Chapter XLIII

Facilitating Reflection Through ePortfolio at Tecnológico de Monterrey / *Marco Antonio Mendoza Calderón and Joaquín Ramírez Buentello* 486

The chapter describes the Tecnológico de Monterrey implementation of an original ePortfolio model at the Mexico City campus. This model is grounded on student reflection in three broad areas of students' lives designed by Jesus Meza, PhD. The implementation was launched in August 2002, with 60 students studying two different majors. By January 2005, the number of student portfolios had grown to 5,000, covering 18 different majors. According to the mission of the Tecnológico de Monterrey for the year 2015, the authors consider that the ePortfolio model will evolve into a comprehensive communication tool reflecting the personal, academic, and professional achievements of the community at the Tecnológico de Monterrey.

Chapter XLIV

Whose Portfolio Is It, Anyway? Implementing Digital Portfolios in K-12 Schools / *David Niguidula* 496

For every creator of a portfolio, there needs to be a reader. In this chapter, we look at several samples of how the issue of audience has affected a digital portfolio system. Our samples come from high school and elementary schools, and from the original research on digital portfolios in the 1990s to schools using them

today. As students and teachers become clearer about the purpose and audience of their school's digital portfolio, they can better understand how to build and read the portfolio's contents.

Chapter XLV

Sustaining ePortfolio: Progress, Challenges, and Dynamics in Teacher Education /

Yi-Ping Huang 503

The teacher education programs at the University of Maryland Baltimore County (UMBC) and its professional community have undergone substantial changes, as developing and sustaining interventions for systemic impact involve changes in culture, policy, and practice. This chapter discusses the progress, challenges, and changing dynamics associated with sustaining an ePortfolio. An ePortfolio is an integral part of a Web-based Education Accountability System (EAS) developed and implemented by the author and the Department of Education to facilitate community-based teaching and learning, to help address national and state accreditation mandates, and to ensure continual improvements.

Chapter XLVI

Psychology ePortfolios Enhance Learning, Assessment, and Career Development /

Benjamin R. Stephens and DeWayne Moore 520

The authors evaluated psychology program assessment measurements derived from self-report and electronic portfolios in the psychology undergraduate major. Their new introductory and senior laboratory courses have been specifically created to provide student-centered learning experiences that lead to ePortfolio construction. This chapter describes the initial stage of an evaluation of our assessment strategy, which centers on the new laboratories. In the lab courses, each student's abilities were evaluated using several measures of achievement derived from national learning outcomes. ePortfolio and non-portfolio-based measures demonstrate promising reliability and validity. ePortfolio laboratories seem to enhance student learning and career planning. These early observations encourage collection of assessment data yearly, from undergraduate majors in each class, to provide longitudinal evaluation of their ePortfolio learning and career planning assessment strategy.

Chapter XLVII

Career ePortfolios in the IT Associates Program at DePauw University / *Nathaniel T. Romance,*

Michael V. Whitesell, Carol L. Smith, and Alicia M. (Clapp) Loudon 532

DePauw University is a selective, undergraduate liberal arts college of 2,200 students, with an academic year of two 13-week semesters and a three-week January Winter Term. DePauw implemented a career ePortfolio requirement for its Information Technology Associates Program (ITAP) in January 2004. The ITAP ePortfolio serves as both a job-seeking tool and a reflective instrument for students. This case study describes the rationale for introducing ePortfolios into ITAP, the processes used to support students in creating and maintaining career ePortfolios, and the outcomes of the project to this point.

Chapter XLVIII

Implementing an Outcome-Based Assessment ePortfolio / *Matthew Wagner and*

Elizabeth Lamoureux 539

This case study examines the introduction of an ePortfolio requirement as a means of assessing student learning and program effectiveness. The Communication and Performance Studies major at Buena Vista University in Storm Lake, Iowa, began piloting the use of an assessment ePortfolio in the spring of 2003 and has since fully implemented it as a program requirement. Although the potential of ePortfolios is still being realized, research suggests the benefit of involving students in program assessment. Case studies are helpful to further define and articulate the emerging literature on assessment ePortfolios. Using qualitative research methods, strengths and weaknesses of this ePortfolio implementation are identified, and areas of improvement are discussed.

Chapter XLIX

Future-Focused ePortfolios at Montana State University-Northern / *Jonathon J. Richter* 551

This chapter introduces the idea of using electronic portfolios for enhancing the future thinking of an organization's learners. At Montana State University-Northern, faculty are using ePortfolios to elicit deep learning by encouraging students to reflect on their work in terms of what is possible, what is probable, and what is preferable in their professional lives as educators. By detailing the context that MSU-Northern's ePortfolio system entails, this chapter may assist practitioners to glean some of the advantages of and the factors for getting students to think systematically about the future using electronic portfolios, and researchers to address relevant issues surrounding the application of future-focused ePortfolios.

Chapter L

Can We Talk? Electronic Portfolios as Collaborative Learning Spaces / *Gary Greenberg* 558

This chapter describes the Northwestern University Collaboratory Project's ePortfolio. As a resource in the Collaboratory, a Web-based collaborative learning environment, it provides collaborative learning spaces where K-12 students in Illinois can share and discuss their work. Web document templates are used by students to create media-rich documents that can be viewed with only a Web browser. Of particular significance is how the ePortfolio's document-based communication model is being used to support mentoring, peer review, feedback, and reflection, and to facilitate a community of learning that motivates and encourages students.

Chapter LI

ePortfolio Thinking: The Challenge of the Public Research University / *Jo B. Paoletti* 567

This chapter examines the trajectory of electronic portfolio development and adoption at large public research institutions. The author frames her research with her own attempt to implement a program-level portfolio for undergraduate majors in her own department. Her investigation of 59 institutions suggests that our largest campuses face unique challenges that may limit the extent to which they adopt electronic portfolios. While some of these challenges are practical and logistical, the more significant barriers seem to be related to campus culture, particularly faculty engagement in undergraduate education.