



## Database e-portfolio systems: A critical appraisal

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### Abstract

This article surveys trends in the e-portfolio boom, relating the development of database portfolio systems to portfolio pedagogy. As the market for enterprise-level database systems has grown, *portfolio* has spread to become a term used to describe systems from assessment initiatives to institutional portals to academic records management tools. After examining materials and demonstration sites, I found that despite sometimes hyperbolic marketing, database portfolio systems have a troubling and mixed relationship to portfolio pedagogy.

The article first discusses central concepts—not of portfolios per se, but of portfolio pedagogy. The article then surveys the development of the boom in enterprise database systems and chronicles prominent trends in those systems. Finally, the article makes critical recommendations for realigning database portfolio systems with portfolio pedagogy, and calls for greater involvement of computers and writing scholars in the development of database portfolios.

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### 1. Introduction

A significant change is happening in portfolio pedagogy as we move from traditional paper portfolios to electronic portfolio systems based on database technologies, and it calls for critical appraisal. To give you a sense of why I might say so, here is [Chalk and Wire's \(2004\)](#) description of its new database system *e-Portfolio*:<sup>1</sup>

**A professional presentation and performance analysis tool unlike anything you've ever seen before.**

If you can type into a word processor and click a computer mouse, you can develop an electronic portfolio, or an eLearning support web site that looks as if it were created by professional graphic artists and web designers. You can do all this in 40 minutes or less. . .

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<sup>1</sup> To avoid confusion between the terms “electronic portfolio” or “e-portfolio” and the many systems that use these terms as part of their names, I will italicize system names throughout this article.

### Easy to use!

- Click a few buttons and fill in a few forms.
- Load your files onto the Internet by just locating them on your hard drive.
- Change images and whole graphic themes in seconds with the click of a mouse button.

If you have been involved with portfolios or know the pedagogical theory behind them, this kind of breathless language might give you pause. The portfolio movement arose as a method of authentic assessment—more authentic, at least, than the standardized testing that has become so prevalent in education. Under most understandings of portfolio pedagogy, students are encouraged to prepare a thoughtful collection of their work, organized and bound together by their own reflections and the metacognitive connections they have made through their learning experiences. Or as [Kathleen Blake Yancey \(2001\)](#) has put it, in portfolio pedagogy

Students are responsible for telling their own stories of learning: for explaining what they did and did not learn, for assessing their own strengths and weaknesses as learners, for evaluating their products and performances, for showing how that learning connects with other kinds of learning (in the classroom and without), and for using the review of the past to think about paths for future learning. (p. 19)

Given this emphasis, Chalk and Wire's description makes creating a portfolio sound perhaps too easy—something you could do without careful consideration and deep reflection, or something that a computer could do for you. This language might merely reflect an enthusiastic marketing team. But we might justifiably ask whether a portfolio created in “40 minutes or less” will give us any more accurate sense of student learning than would a 40-minute standardized test.

In this article, I will describe and analyze some challenging aspects of the new generation of electronic portfolio tools, examining trends of their development and gauging where these trends seem to follow or diverge from commonly accepted portfolio pedagogy. These new systems, which have as their primary distinction a reliance on enterprise databases, are growing so quickly that any attempt to discuss them either exhaustively or individually would be very difficult. Accordingly, I will limit my analysis to common systems and trends. For data, I have relied primarily on the system developers' own materials on their web sites, including when possible the real or mocked-up portfolios they make available. In cases where developers give access to demonstration versions, I have examined these as well. My hope is to engage in the kind of critical examination called for by [Gail Hawisher and Cynthia Selfe \(1991\)](#), when they criticized “uncritical enthusiasm” for computers in writing classrooms, commenting that “electronic technology, unless it is considered carefully and used critically, can and will support any one of a number of negative pedagogical approaches” (p. 56). Though electronic portfolios have many examples of success, their development is moving so quickly that the dangers of such negative approaches are quite high. Critical analysis can help us to assess these dangers, and perhaps even to avoid them.

In making this critical assessment, I speak particularly to others involved in teaching writing with computers. The “e-portfolio boom,” as Trent [Batson \(2002\)](#) has labeled it, stands at an early stage, where enthusiasm and big claims have encouraged investment and energized careers. But the field of computers and writing has matured beyond the level of “uncritical enthusiasm”

Hawisher and Selfe (1991, p. 56) once complained of. As compositionists, many computers and writing specialists have accumulated considerable experience with writing portfolios, portfolio pedagogy, and the various dynamics and difficulties of implementing portfolio systems. To this, we can add our equally valuable expertise with integrating writing and technology. Despite these two important areas of experience, however, relatively few people in computers and composition are involved in database portfolio initiatives. As portfolio scholar Yancey (2002) noted in a message to the Writing Program Administrators List (WPA-L), “The world of digital portfolios is being shaped as we email here, and it’s not a world that seems to have all that many English faculty in it, much less composition types, as far as I can tell. I wish there were more. . . . If we are to exert influence on how these portfolios develop, we need to move in this direction yesterday” (16 December 2002). With this article, I would like to encourage computers and writing specialists to use our deep experience with writing portfolio pedagogy and with computers to influence the broader development of database portfolio systems, which are likely to change the landscape not only of writing instruction, but of higher education across the board.

## 2. Boundaries and intrusions

In attempting this analysis, I recognize that the term portfolio lacks distinct boundaries. There is no single definition; many thoughtful people have honestly disagreed on what a portfolio is or is not. Portfolios have been explored for so many years and in so many different contexts that it would be difficult to find two programs with identical approaches—and in fact, scholars have argued for the localized and situated nature of portfolios as a primary characteristic of the approach.<sup>2</sup> But despite differences, portfolios do share a more or less consistent center, based on the rationales of the pedagogy more than on the characteristics of its products. As Pat Belanoff and Marcia Dickson (1991) have commented, “Portfolios are used for remarkably similar reasons, even though the portfolios and the systems in which they are embedded may differ greatly” (p. xxiii).

One common expression of this center is the memorable catch-phrase, “collect, select, reflect”—but the following theoretical principles might express the dynamic spirit of portfolio pedagogy a bit more fully.

### 2.1. Reflection

Portfolios encourage students to reconsider and narrativize their learning experience by engaging in what Yancey (1998) calls “reflection-in-action”—a reiterative process of looking back to previous performance and looking forward to goals—and by writing reflective accounts of their learning (p. 13).

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<sup>2</sup> Susan Callahan (1997) described “the growing tension between those who believe portfolios function best as a highly personalized pedagogy kept deliberately separate from formal assessment and grading and those who see portfolios as a desirable vehicle for assessing individual proficiency” in a broader assessment system (p. 57). She has also summed up admirably the various proponents of limiting portfolios to local uses and extending them to wider assessments (p. 67, n. 1).

## 2.2. Connection

Portfolios help students find ties between the disparate things they have done or learned—what Yancey (1998) calls “constructive reflection,” “the process of developing a cumulative, multi-served, multi-voiced identity” (p. 14). In the process, students create a coherent sense of their own learning experiences and develop a growing identity as a learned self.

## 2.3. Process

Because they encourage reflection and revision, portfolios emphasize the process of learning. Portfolio pedagogy assumes that the artifacts collected in a portfolio show this process of learning, creating a deeper picture of the learner than just the finished products of the artifacts themselves.

## 2.4. Activation

Portfolios encourage students to take control of and responsibility for their own learning. Students grow as lifelong learners by managing their work, by using their discretion to choose which artifacts best show their accomplishments, and by explaining how those artifacts show a progress of learning.

These principles are deeply intertwined. Combined, they foster students’ dynamic involvement in creating a learned self, as well as in constructing a rhetorical expression of who that learned self has been, is, and may become.

In this sense, the object of assessment is less the individual artifacts collected than the web created between the artifacts—the connections, arrangements, arguments, and narratives that make a single text out of disparate ones and thereby chronicle a learner’s learning. As James Zebroski (1994) commented, ideally

A portfolio would not simply be a representational sampling of three or four papers that share little else but the name of the self. A portfolio would be constructed to state a thesis, provide evidence and reasoning that proves this thesis or conveys an image or impression. The selection and ordering of materials would be critical. The connecting tissue of written commentary would give the reader a running account, perhaps a narrative, that would temporarily frame this collection of textual variants. In other words, the portfolio is no less an artistic construction than any other text. . . (p. 55)

Or as Brian Huot & Michael M. Williamson (1997) argued, portfolios should give us “an individual record of a student’s journey to understand herself as a writer”—the student’s own thoughtful and individual expression of her learning or skills (p. 54). This manifested rhetorical statement—the portfolio as the learner’s coherent expression of his or her own learning, and not just a collection of discrete elements—is what instructors then assess. The portfolio, in short, is more than the sum of its parts.

I am concerned that in the excitement of creating new database portfolio systems that make drastic changes to the scope and permeability of portfolios, we may have left some of these theoretical principles behind, thus crossing the boundary into systems that are some-

thing distinctly other than portfolios. In this concern I echo Kathleen Blake Yancey and Irwin Weiser's (1997) remarks in introducing *Situating Portfolios: Four Perspectives*, particularly in their reliance on Catherine Lucas for their approach. Yancey and Weiser commented that their volume collects essays addressing three impediments to successful portfolio use, as identified by Lucas: "(1) the weakening of effect through careless imitation, (2) the failure of research to validate the pedagogy, and (3) the co-option by large-scale external testing programs" (p. 3). Lucas's second caution is difficult to address in this regard; the database-driven systems in development are so new that little research exists to demonstrate their validity. However, her first and third cautions are not only more accessible, but particularly central to the portfolio movement's sense of what portfolios and portfolio pedagogy should be.

Both of these cautions address issues of boundaries; Lucas seems to suggest that by expanding the scale of portfolios beyond crafted local implementations or by imposing standards from outside the site of learning, we may see a dilution of the pedagogy's validity. These cautions imply that the portfolio movement's emphasis on authentic, individual, and local expression may simply be incompatible with the standardization inherent in large-scale assessment. As Huot and Williamson (1997) pointed out, "Efforts to standardize [the portfolio] cut into its ability to help the individual student make sense of herself as a literate person struggling not only to make meaning but to create a context within which she learns to read and write" (p. 54). In effect, the standardization of portfolios excludes the "messy data" of individuality that portfolio pedagogy depends upon for encouraging students' engagement in their own learning (Yancey & Weiser, 1997, p. 13). By this view, standardization tends against the individual expression of learning. Even early advocates of large-scale portfolio assessment such as Peter Elbow and Pat Belanoff (1997) warned that "some people use portfolios in such a way as to accelerate [the assessment] steamroller," and that "[p]ortfolios can actually be used in such a way as to make students. . . feel the search-light of official evaluation shining into every nook and cranny of writing they do" (p. 31).

When we add the power of enterprise-level databases to the large-scale portfolio assessment system, the intrusions Elbow and Belanoff warned us about grow even more acute, for they promise to make "the search-light of official evaluation" not just a matter of student perception, but a reality. If we are not very careful, database portfolio systems may simply accelerate the growing institutional appetite for data. This appetite has been thus far been satisfied by the comfortable quantification large-scale testing provides—which, as much as we may dislike it, is at least limited in its gaze. Testing makes visible only a momentary snapshot of students' learning; though this may make large-scale testing less valid, it also protects students from unwarranted intrusions on their privacy—the institution knows only how students performed on a particular test on a particular day. Ironically, by attempting to gain a more valid vision of student learning, portfolios are potentially more intrusive than large-scale testing. In a local implementation of portfolios, this increased intrusion of vision is balanced by the prominent visibility of the assessors—in most systems, the faculty and instructors who assess the portfolios are also those who know at least some of the students in their own classrooms. The addition of database technologies to this mix, however, enables an unprecedented penetration of vision—not from a visible observer, but from an invisible, institutional gaze.

### 3. The “e-portfolio boom” and the database

Given these concerns about the relationship between database portfolios and portfolio pedagogy, I will next discuss the extent and nature of what Batson (2002) has called the “e-portfolio boom.” Batson described this boom as follows:

We seem to be beginning a new wave of technology development in higher education. Freeing student work from paper and making it organized, searchable, and transportable opens enormous possibilities for re-thinking whole curricula: the evaluation of faculty, assessment of programs, certification of student work, how accreditation works. In short, ePortfolios might be the biggest thing in technology innovation on campus. Electronic portfolios have a greater potential to alter higher education at its very core than any other technology application we’ve known thus far.

The most recent developments in e-portfolios include a surprisingly large number of such large-scale systems based on enterprise-level databases.<sup>3</sup> According to my recent (by no means exhaustive) count, there are approximately 48 of such systems in use or in development. Of these, 30 are primarily academic initiatives; corporations (some with academic ties) are developing an additional 18 systems as commercial products (see Table 1)<sup>4</sup>.

Although these systems come in many varieties, they typically share a common approach using databases and web interfaces. Generally, the systems provide students with a database account they access through a web browser. Using a variety of web forms, students upload required examples of their work to a database server, sometimes adding reflective comments and contextual explanations. Teachers, administrators, and even potential employers can view the student’s work by logging in to the system, again through a browser, and accessing student artifacts through an organized set of links in a professionally designed template. The Alverno College (*Frequently*, 2003) *Diagnostic Digital Portfolio*, for example, presents student work in a default matrix view organized according to assessment standards and level of achievement. This template is the public face of the portfolio, although it can be filled dynamically to create various views of the database of student records. For example, typically the student, or sometimes the institution, can specify which artifacts are visible to different audiences.

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<sup>3</sup> Throughout the rest of this discussion, I distinguish between enterprise-level database portfolio *systems* and local implementations of those systems, which are commonly called portfolio *programs*.

<sup>4</sup> People writing about e-portfolio systems often cite the American Association for Higher Education (AAHE) Portfolio Clearinghouse. However, the iteration to which most have referred included questionable data, as do most self-reported databases. As of spring 2004, the Clearinghouse listed fifty-one self-reported academic portfolio systems, but out of these only nine were database systems and only fourteen were nondatabase web portfolio systems. Some systems seemed never to have been in full operation; others were paper rather than electronic; one was the web portfolio of a single faculty member; and one was simply the home page of an academic interested in portfolios. Fortunately, in summer 2004 this database was updated, and a new call went out for self-reporting. Thirty-four respondents have entered data as of October 2004, but only sixteen of these entries represent database e-portfolio systems, the remainder being either web portfolio systems or local implementations of e-portfolio systems. Unfortunately, even the new database includes spurious data, such as one entry that advertises a book on career portfolios. Self-reporting, sadly, tends to collect claims, but not warrants or data—all the more reason we should retain a critical awareness of database portfolio products.

Table 1  
Corporate and academic database portfolio systems

Type	Product name	Organization
Academic	Diagnostic Digital Portfolio (DDP)	Alverno College
	ePortfolio	Cascadia CC
	Learning Record Online	Computer Writing & Research Lab at the University of Texas
	Electronic Student Portfolio (ESP)	Cornell U, Ohio U
	Dartmouth Career Services Portfolio	Dartmouth College
	FSU Career Portfolio	Florida State University
	Gateway's Electronic Portfolio	Gateway Community College
	eFolios project	Georgia State University
	Portfolio of Essential Attributes, Knowledge and Skills	Hong Kong University of Science and Technology
	Epsilon Portfolios CyberLab	IUPUI CyberLab, ePortConsortium
	Electronic Portfolio	Johns Hopkins University Center for Technology in Education
	On-line Career Portfolio	Kennesaw State University
	MyEport	Maricopa Community Colleges
	McGill Evaluation Electronic Portfolio (MEEP)	McGill University
	MnSCU e-Folio	Minnesota State Colleges and Universities; Avenet, Inc.
	Student Electronic Learning Folio (SELF)	National University of Singapore
	OSPI	Open Source Portfolio Initiative
	Purdue Electronic Portfolio (PEP)	Purdue University
	RosE-Portfolio System	Rose-Hulman Institute of Technology
	E-Folio	Stanford Center for Innovations in Learning
	Connecticut College e-Portfolio Development Consortium	Union, Connecticut, Mt. Holyoke, and Dartmouth Colleges
	University of Denver Portfolio Community	University of Denver
	PASS-PORT	University of Louisiana at Lafayette; Xavier Univ. of Louisiana
	Open Portfolio	University of Virginia
	Catalyst Portfolio Tool	University of Washington
	E-Portfolio Portal	University of Wisconsin-Madison
	Waynesburg College Electronic Portfolio Project	Waynesburg College
Electronic Portfolio	Wesleyan University	
CEBS Electronic Portfolio System	Western Kentucky University	
Learning Outcomes ePortfolio	Zayed University, Dubai & Abu Dhabi, United Arab Emirates	
Corporate	e-Portfolio	Chalk & Wire
	Masterfile ePortfolio Manager	ConcordUSA
	ePortfolio	Digitalbrain plc
	Folio	Eportaro
	ProfPort	Folioworld, Knowledge Triangle
	Interfolio	Interfolio, Inc.
	Foliotek	LANIT Consulting
	LiveText	LiveText
	FolioLive	McGraw/Hill
	iWebfolio	Nuventive
	TrueOutcomes	Outcomes Assessment Solution
	Portfolio System	PortfolioAcademy.com
	Personal Learning Planner	RMC Research Corporation
	Mosaic	rSmart
	Web Folio Builder	TaskStream
	Lectora	Trivantis
	Insite	Wadsworth
WebCT PowerLinks	WebCT	

What is most remarkable about such systems is their potential scope. As data storage tools, they are extendable to entire programs, schools, educational systems, and beyond: The entire citizenry of Minnesota can now use the state's *e-Folio* system, and the government of Wales plans to implement a system for the citizens of the entire country to keep track of education, training, and certification. The scope is also extensive in time and in reach. Rather than simply recording the results of assessment in the form of grades, these systems promise



to maintain complete databases of student work throughout each student's academic and even professional career. They also allow institutions unprecedented access to and control over assessment data—the ability to see, for example, all of the papers assessed in a university's freshman composition program, all of the assessments performed by a single faculty member, department, or school, or even all of the assessments performed in an entire state-wide or potentially national system. As such, they allow for remarkable increases in the scope of large-scale assessment.

These database systems are particularly tempting because they promise to solve the two biggest disadvantages of portfolio implementation: inefficient management and inconvenient storage, both of which increase with any broadening of scope. Portfolio programs have always been hampered by the sheer volume of paper portfolios create, which is inconvenient to store and expensive and difficult to access for large-scale assessment. These and other disadvantages have led a number of people, including me, to advocate electronic portfolios such as web portfolios, which allow students to create profoundly interconnected expressions of their learning.<sup>5</sup> To this point, however, web portfolios have been criticized for being difficult to implement because of the training involved: students and teachers must learn to create digital artifacts as well as a digital framework in which to present them, usually in the form of a website. Given a robust database back-end, the thinking seems to go, and portfolio programs can be expanded to remarkable scopes because students will no longer need training—they simply point and click their way into creating a portfolio by uploading artifacts through a relatively standard and familiar web form into a virtual storage space, much as one would do in Yahoo!Briefcase™. Moreover, the database can enforce structures that comply with whatever learning standards the institution chooses; student teachers, for example, can be required to upload materials into virtual spaces organized around the Interstate New Teacher Assessment and Support Consortium (INTASC) or National Council for Accreditation of Teacher Education (NCATE) standards.

The database is clearly the primary distinction made between previous iterations of electronic portfolio pedagogy and the new e-portfolio systems. [Batson \(2002\)](#) described this distinction in terms of the difference between “dynamic” and “static” portfolios:

Since the mid-90s, the term “ePortfolio” or “electronic portfolio” has been used to describe collections of student work at a web site. Within the field of composition studies, the term “Webfolio” has also been used. In this article, we are using the current, general meaning of the term, which is a dynamic web site that interfaces with a database of student work artifacts. Webfolios are static web sites where functionality derives from HTML links. “E-portfolio” therefore now refers to database-driven, dynamic Web sites, not static, HTML-driven sites.

Batson's distinction between static web sites and dynamic e-portfolios has certainly caught on. But his presentation of the database as marking the great divide of digital portfolios makes this distinction on back-room technical terms, rather than on pedagogical terms. The distinction uses the positive tone of the term *dynamic* to contrast with the boring stodginess

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<sup>5</sup> See my recent book—*The Web Portfolio Guide* (Longman, 2003)—for more information. Naturally, I disagree with the contention that web portfolios are too difficult for students and teachers to create successfully. In addition, as they learn to do so they empower themselves as effective digital communicators—an essential capability in today's webbed and wired world.



of *static*, without acknowledging that these terms mean something far different in information technology (IT)-speak than in pedagogical or common usage. Batson's use of *dynamic* refers to Hypertext Markup Language (HTML) pages created on-the-fly from server-side scripts, typically but not always with database integration.<sup>6</sup> *Static*, by this technical distinction, refers to HTML-driven sites that are not integrated with databases.

This distinction might be accurate in IT jargon—but it is inaccurate in terms of portfolio pedagogy, which seeks to encourage students to become dynamic participants in their own learning. From a pedagogical perspective, database-driven systems may actually be *less* dynamic than something students might have created on their own, whether traditional paper portfolios, static web portfolios, or even sophisticated web portfolios in which students use their own databases. From the viewpoint of web site users, a dynamic site (in an IT sense) is more responsive to their desires than a static site. But in portfolio pedagogy, students are not merely the users of the system; they are, or should be, the *authors* of it. The user of a database portfolio system is more accurately the teacher or administrator who employs the system to manage and assess student work. Students in these systems risk becoming even less than authors or users, dropping to the level of content providers. Database-driven e-portfolio systems thus shift power from the student as the author of her or his portfolio and toward the teacher or administrator. For the most part, the student has decreased authorial control over how his or her portfolio will be structured, linked, presented, or viewed. Even in systems that allow some customization, students are restricted to what the system will allow.

This arrangement is clearly less dynamic than previous iterations of portfolio pedagogy. The student's demotion to content provider or uploader tends against the active empowerment portfolio pedagogy values. Rather than involving students in managing their own learning, in other words, database portfolio systems may demote students to a more passive role than portfolio pedagogy attempts to foster. Thus, despite Batson's global distinction between *static* and *dynamic* portfolio systems, the more basic distinction in the landscape of digital portfolio implementation is probably between electronic portfolios (including digital and web portfolios) and database content management systems.

Unfortunately, Batson's distinction dismisses other, more dynamic forms of electronic portfolios from the ranks of e-portfolios. In the process, it marginalizes a successful mode of electronic portfolio pedagogy: teaching students how to make their own portfolios using standard tools of electronic communication today, including web development and office software. Many articles and several books have commented on the potential of web portfolios in portfolio pedagogy, and Rich Rice (2001) and others have commented on the promise of common tools such as Microsoft POWERPOINT for creating successful portfolios. Good examples abound of successful use of these kinds of non-database portfolios. Two of the more successful web portfolio ventures are those at Kalamazoo College, with its *K-portfolio*, and Penn State, with its *e-portfolio*. Both of these systems carefully focus their efforts on portfolio pedagogy, centering especially on the importance of reflection. Both give students considerable latitude in the design, structure, and rhetorical approach of their own web portfolios. But neither uses database technology.

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<sup>6</sup> Ironically, from a web development perspective, dynamic also often refers to Dynamic HTML, or DHTML, which actually excludes database integration (that is, DHTML is entirely client-side).

#### 4. Trends in database portfolios

Thus the use of a database to create a body of student work does not necessarily make the product a portfolio in the sense of portfolio pedagogy. Databases are one technology among many that could be used to further the ends of portfolio pedagogy, and I hope that database portfolio developers focus their efforts to those ends. At this point, however, database portfolio development seems to tend against effective portfolio pedagogy. A bewildering variety of database portfolio systems are currently available or in development, but six general trends seem characteristic of the apparent boom:

- Talking the talk
- Branching out
- Polarizing standardization and flexibility
- Making money
- Building portability, persistence, and privacy
- Losing reflection

##### 4.1. Talking the talk

Before we criticize systems for not being something they don't promise to be, we should recognize that most explicitly employ at least the terminology of portfolio pedagogy, if not the pedagogy itself. Some do so accurately, reflecting a commitment to portfolio pedagogy. But others, and especially commercially offered systems, seem more intent on using the terminology as a marketing tool.

Most of the systems I have examined use some form of the word portfolio in their name, often with varying compoundings, fragmentations, and capitalizations: *E-Folio*, *e-Folio*, *Electronic Portfolio*, *ePortfolio*, *e-Portfolio*, *E-portfolio Portal*, *Folio*, *FolioLive*, *Foliotek*, *iWebfolio*, and so on. In fact, enough market density has developed that some different systems have laid claim to the same name: both the Johns Hopkins Center for Technology in Education and Wesleyan University name their tool *Electronic Portfolio*, and both Cascadia Community College and digitalbrain claim *ePortfolio*. This consistency in the use of the term portfolio—or at least of its fragments, port- and -folio—suggests that whether they actually follow portfolio pedagogy, these systems wish to invoke the ethos of the portfolio movement. The compounding of portfolio or folio with e- or i- also brings to mind the 1990s dotcom movement. When considered along with the entry of significant numbers of corporate, corporate/academic, and academic-to-market ventures (see section 4.4, below), this practice suggests that portfolio has become a market-driven term, a buzz-word that will help sell or promote software, systems, and database services.

Most academic database portfolio systems go farther than simply using the name by consistently using the language of portfolio pedagogy, at least laying claim to the same pedagogical principles of the portfolio movement. For example, Alverno College (*Diagnostic*, 2003) describes its *Diagnostic Digital Portfolio* (DDP) as follows:

This first-of-its-kind, web-based system is in the fifth year of implementation at Alverno College. It enables Alverno students—anyplace, anytime—to follow their learning progress

throughout their years of study. It helps students process the feedback receive [sic] from faculty, external assessors and peers. It also enables them to look for patterns in their academic work so they can take more control of their own development and become more autonomous learners.

This description displays many of the values described in the definitions of portfolio pedagogy above, including reflection and connection (“follow[ing]. . . learning progress throughout. . . years of study”; “look[ing] for patterns”), and activation (“tak[ing] more control”). Similarly, Minnesota’s *eFolio* (2004) describes itself as intended to allow citizens of Minnesota to create “a living showcase of your education, career and personal achievements.” In a similar vein, The Stanford Center for Innovations in Learning’s (2002) *E-Folio* clearly aligns itself with portfolio pedagogy on its web site: “We believe that the reflective practice of creating portfolios enables students to document and track their learning; develop an integrated, coherent picture of their learning experiences; and enhance their self-understanding.”

Commercial database portfolio systems, however, are less likely to invoke the language of portfolio pedagogy. The most explicit statement of portfolio pedagogy I have found in a commercial product is *FolioWorld* (2002), which claims that with its *ProfPort* system “Students demonstrate mastery of program and course standards or competencies by building an organized collection of WWW multimedia artifacts that are the result of assignments and activities. Each student’s webfolio shows how he or she is interweaving formal course work, career planning, and student life activities into a unique educational experience.” Others, however, scarcely use the language of portfolio pedagogy, save in the most basic sense of portfolios being a repository of artifacts to be assessed. For example, *Outcomes Assessment Solutions’* (2001) *True-Outcomes* describes its system this way: “The Professional Portfolio is a password protected, on-line collection of academic and co-curricular work that each student owns and maintains so they can showcase their accomplishments to parents, employers, licensing boards, and others.”

Despite their common invocation of portfolio terminology, however, it’s not clear whether many of these systems are really portfolio pedagogy systems, except in the most basic and generic sense of a file management scheme. They might be (and sometimes are) more accurately described as assessment and advisement databases. For example, consider a recent University of Minnesota Duluth (2003) press release announcing the Open Source Portfolio Initiative’s *ePortfolio* tool. Despite the name *ePortfolio*, the press release describes the system as “a revolutionary new program of gathering, storing and distributing personal, individual data and information” with “the ability to dramatically change forever the way a person’s individual records are gathered, stored and shared.” The same release quotes University of Minnesota-Duluth Chancellor Kathryn A. Martin as saying “We are truly excited about the creation of *ePortfolio* and its ability to revolutionize the future of personal data management.” Although “gathering and distributing personal. . . information” through “personal data management” may be desirable in its own right, most people who have used portfolio pedagogy in classrooms or programs would probably say that portfolios ought to do something more than just keep track of student records.

#### 4.2. Branching out

This emphasis on content management highlights a second trend: the tendency to use the flexibility of databases to provide multiple services—not just portfolios for assessment and

Table 2  
Systems focusing on other tools than portfolios

Focus	Name	Developer
Online resumes	Electronic Student Portfolio (ESP)	Cornell, Ohio University
	MnSCU e-Folio	MnSCU/Avenet, Inc.
	Mosaic	rSmart, Inc.
	OSPI	Open Source Portfolio Initiative
	Folio	Eportaro
Course management tools	Catalyst Portfolio Tool	University of Washington
	FolioLive	McGraw/Hill
	Insite	Wadsworth
Advising portfolio tools	Connecticut College e-Portfolio	Connecticut College, Union,
	Development Consortium	Dartmouth, Mt. Holyoke
	Epsilon Portfolios CyberLab	IUPUI
Institutional portal	Electronic Portfolio ePortfolio	Wesleyan University digitalbrain plc.
Content management	Concord Masterfile EICMS	Concord USA

growth, but services such as advising tools, course management tools, Internet portals, student and program record management, and online resumes.

From a database perspective, this makes perfect sense: To a database, digital objects (whether word processor files, student records, enrollment records, text, video, or pictures) are more or less the same. A database simply associates certain digital objects with certain other digital objects—for example, a student's social security number with her or his grades, demographic information, portfolio artifacts, and so on. From a pedagogical perspective, however, this broadening of mission has the potential to weaken any focus on portfolio pedagogy. The majority of systems I have examined are relatively straightforward portfolio assessment systems. However, a number seem to have different foci, as expressed in Table 2, and others are moving toward integration with other kinds of database implementations.

Many of the database systems offer as a secondary benefit the possibility of using the portfolio to get a job, although retaining portfolio assessment as their focus. But four systems seem designed primarily to help users create an online professional resume. For example, the Minnesota State Colleges and Universities (MnSCU) *e-Folio*, an implementation of the Open Source Portfolio Initiative (OSPI), is available not only to Minnesota's students, but to all its citizens, which suggests that its purpose is more to market professional competence than to express student learning. rSmart's *Mosaic*, also an OSPI implementation, displays a similar emphasis.<sup>7</sup>

Three systems could perhaps better be described as online course management tools, rather than portfolio systems. The University of Washington's *Catalyst Portfolio Tool*, for example, includes flexible portfolio generation tools only as part of the package. It also provides tools to

<sup>7</sup> The Open Source Portfolio Initiative (OSPI), as the name suggests, uses an open-source model of software development, much as has been used in Linux development. In this model, OSPI offers the source code for its applications to anyone who cares to download it. These external developers are allowed to make whatever changes to the source code they please to adapt it to specific educational or commercial purposes; they are also invited to contribute to the development of the OSPI source code.

create student or course web sites, as well as to manage peer review, online discussion boards, email lists, and online homework submission—the typical tools of online course management systems. McGraw-Hill's *FolioLive* and Wadsworth's *Insite* share this focus as well, including portfolio generation tools as secondary features. *FolioLive*'s business model also supports this focus—it is even sold on a per-course/per-student basis, as if it were a textbook. In addition, some systems, such as Indiana University-Purdue University Indianapolis' (IUPUI) *Epsilen Portfolios* and eportaro's *folio* (a more typical database portfolio model not listed in Table 2), are working toward integration with established course management tools like BlackBoard and WebCT, suggesting that they may be shifting their emphasis toward course management.

Currently, however, IUPUI's *Epsilen Portfolios* (as well as Connecticut College e-Portfolio Development Consortium's tool, which is either still in basic development or has been abandoned) seems focused primarily on advising and only secondarily on assessment. IUPUI (2003) introduced its services by commenting that it “may be used to generate career placement applications, to manage and demonstrate student learning outcomes, to develop professional faculty portfolios, and to offer student advisement and assessment.” That *Epsilen* mentioned both “career placement” and “student advisement” before assessment suggests that assessment is not its primary focus.

Two systems that lay claim to being portfolios actually seem much closer to institutional portals. For example, the *Wesleyan University Electronic Portfolio* (2004) described its services to students as follows: “The portfolio is used to record information about your life at Wesleyan. You can use the portfolio to keep track of general university information, such as campus events, as well as academic and administrative information specific to you, such as your term bill and academic history.” A previous version of the Wesleyan site (accessed November 2003) focused even more strongly on the institutional portal aspect of the tool: “Using the portfolio, students can review their current class schedule, check grades, view their accounting bill, check E-mail, and use the calendars to find out what is happening on campus and schedule their own appointments, as well as post a resume and reflect upon their academic goals” (Wesleyan, 2003). Then again, on the same page this tool also claimed that “The most important function of the portfolio is its use in advising”—which only supports my sense that the scope of these tools is broadening remarkably.

Perhaps the most extreme example of this broadening is ConcordUSA's *Concord ePortfolio Manager*. Rather than making portfolio assessment a central part of its offering, ConcordUSA (2003b) described its function generically as “content management”:

Content Management is about Collecting, Securing, Managing and Sharing information.

For over fifteen years, Concord has specialized in developing and applying technology to the goal of making information easier to share. Today we are a leading provider of Content Management and Library systems to the Education industry.

Our Masterfile EICMS (Education Institution Content Management System) solutions provide an affordable way to automate the management and sharing of information across all facets of the Education Enterprise. Solution areas include courseware content, student and faculty portfolios, administrative documentation and the institution web site.

Under this model, portfolios are relegated to being a “solution area” in the “Education Enterprise”—or even more alarmingly, the “Education industry.” And the basic tool behind

the *ePortfolio Manager*, the Masterfile Digital Content Server, is equally useful for corporate “solution areas”: “Concord’s Masterfile Digital Content Server is designed to meet the information management needs of large or small operations, from departments to entire companies. Whether it is managing policies and procedures, safety standards, or just keeping items stored for record purposes, Masterfile delivers solutions with advanced content management features” (ConcordUSA, 2003a).

If these systems are (or other systems are becoming) content management schemes, course management tools, or assessment databases rather than portfolios, their implications for pedagogy remain unexplored territory. As the OSPI remarks on its web site, “This is an early in [sic] the evolution of electronic portfolios. The OSP will evolve to become something as yet not fully comprehended” (Open Source Portfolio Initiative, 2003). The impulse to broaden the database portfolio to include all of these functions may be inevitable, given the flexibility databases give us to associate digital objects. But broadening the portfolio to content management risks missing the significance of portfolio pedagogy as a transformative pedagogical approach. I suspect that this broadening is close to what Catherine Lucas meant by “the weakening of effect through careless imitation” (Yancey & Weiser, 1997, p. 3).

#### 4.3. Polarizing standardization and flexibility

Despite the broadening missions of database systems, we can roughly divide the systems that focus primarily on portfolios as centering on either standardization or flexibility. Standards-driven systems give students relatively little control in presenting their work or even in deciding what work to present. A good example of this kind of system is the Johns Hopkins Center for Technology in Education’s (2002) *Electronic Portfolio*. By filling out a series of forms and uploading artifact files, students in effect plug artifacts into a preset, standardized template that shows their fulfillment of particular standards. For the most part, students have little control over the appearance, content, or structure of these systems. Most systems on this end of the spectrum focus on serving schools of education in assessing student teachers according to national standards such as NCATE or INTASC. Their emphasis tends to be on creating greater visibility in the assessment process, primarily from the perspective of higher authorities such as accreditors, administrators, and legislators.

Countering this relative rigidity are systems that give students little more than forms-driven online web page editing tools. These typically allow students to create as many pages and links as they want, using web forms and templates, some customizable to various extents. Several of the corporate-designed systems, such as *LiveText*, follow this model, as do Minnesota’s *eFolio* system and Ohio University’s *Electronic Student Portfolio (ESP)*. This flexibility gives the advantage of greater marketability to a much larger potential client base, including many kinds and levels of educational institutions and even companies who want to create their own web sites. These tools are little different from well-known enterprise-level content management tools such as UserLand’s *Manila* (<<http://www.userland.com/>>) and RedDot Solutions’ *RedDot* (<<http://www.reddotsolutions.com/>>), which are used by organizations with large numbers of relatively untrained web site contributors who manage rapidly changing content. This content management model has clear parallels to the situation of universities, which have many untrained students and faculty who want to update their websites or portfolios frequently.



Users *can* create electronic portfolios with these flexible systems, just as they have done with standard website development tools and office software. But these systems may lack the guidance students need to create successful portfolios. Accordingly, students may more likely use them to make personal websites, rather than portfolios as they would be recognized in portfolio pedagogy.

#### 4.4. Making money

Perhaps the most remarkable development in database portfolios is the growing corporate presence in the field—an e-portfolio boom, indeed. At least 18 corporations have offered or are developing database portfolio systems (see Table 1). These corporate solutions clearly reveal the potential for making money on database portfolio systems. Obviously, database portfolios represent a high level of infrastructure and development investments—real and potential, public and private. The many companies involved in this development must see their investments as justified by the potential for selling their product to universities. Included in this group are not only dotcom startups attempting to get into the business on venture capital and a shoestring, but well-established academic publishers like McGraw-Hill and Wadsworth.

Considered positively, this corporate involvement implies an admirable collaboration between commercial entities and educational institutions. For example, OSPI's open-source software development model means it is offering all of its code online for free—which suggests that they are engaging less in marketing than taking advantage of market dynamics to further an educational agenda. From the institutional perspective, many schools also seem to perceive an attractive prospect in the killer app that promises to increase accountability while being a profitable product itself. One indication of this perception is the number of university initiatives that have taken on corporate sponsors or collaborators. The *ePort Consortium* (2004) includes more “Corporate Members” (Microsoft, Blackboard, Community of Science, eCollege, SCT, Nuventive, Angel, and ePortaro) than “Developing Members” (IUPUI, Bowling Green, Maricopa Community Colleges, Penn State, the University of Wisconsin-Eau Claire, and UCLA). Others clearly hope to market their home-grown tool to other universities. Johns Hopkins (2002), for example, is offering licenses of its *Electronic Portfolio* tool to other schools and institutions.

However, the pressure for profitability for both commercial and academic-to-market models may undercut the rich picture of student work that portfolio pedagogy values. As we saw at the beginning of this essay with Chalk and Wire's ad-speak on its *e-Portfolio* web site—its promise of a 40-minute portfolio—this pressure may considerably affect the way students and faculty perceive the portfolios they create or assign in their courses and programs. Although it may be more accurate than other methods of assessment, portfolio pedagogy simply is not as efficient. Yet corporate profitability depends on efficiency. We may see, in other words, that after an e-portfolio boom will come an e-portfolio bust.

#### 4.5. Building portability, persistence, and privacy

The potentially most far-reaching trend in database portfolio development is the attempt to make student portfolios both portable and persistent. In the past, student portfolios tended to be limited in scope, location, and access. But database portfolio developers envision transferring



content between institutions—in some cases throughout a college career, but in the most ambitious systems, over a lifetime. The [ePortConsortium \(2003\)](#) has expressed the relationship between portability and persistence as follows:

Unless users are to be expected to re-enter their portfolios every time they change institutions, ePortfolio portability will be a crucial feature, and this portability can most easily be achieved through the use of industry-wide standards. Students may also wish to keep ePortfolios across levels of education and to continue to use them after they enter the workplace.

Portability and persistence are clearly considered desirable follow-ons to the digital content management aspect of database portfolios, and several systems have already begun to offer these features. For example, the [Minnesota State Colleges and Universities \(2004\)](#) *e-folio* system's availability to all state residents regardless of educational status suggests that the system can be used at all levels of education and afterwards in careers.

However, this level of persistent self-reporting involves troubling issues of privacy and access, especially when the anticipated time scope is life-long. For example, [ePortaro's \(2004\)](#) web site features a series of pages titled "folio lifecycle," in which a single (fictional) person is depicted as using the same portfolio throughout her life—from infancy, when her parents entered her vital health information; through grade school, where she got all A's; through high school, where she was class president; through college, where she was the "Tri Delt social chair"; and through her successful career as a Microsoft project manager and vice president of sales. Given the sensitivity of this information and the pervasive reach and chronological extension of the database, it's not difficult to anticipate complications. For example, what will this data mean to the student whose record is less stellar? Although this use of portfolios may, as [Barbara Cambridge \(2001\)](#) has put it, "[turn] failure into occasion[s] for learning," (p. 8) for some students it may also turn what should be a learning tool into a permanent academic record focusing on failure, rather than on growth. Even if the student's involvement is not life-long, the data will still persist. For example, LiveText's revenue model has students buy a subscription that lasts up to a year after their graduation; afterward, students can continue to subscribe on an annual basis. But if they choose not to subscribe, their university still has persistent access to their portfolios in perpetuity—or at least as long as the university requires new students to subscribe.

Database standards will allow institutions to access, read, analyze, and surveil data gathered from a variety of contexts over a long period of time. To safeguard against inappropriate access, most database portfolio systems use a variety of technologies to maintain privacy for participants. But our susceptibility to official surveillance has changed remarkably in the past few years. The permeability of databases to federal surveillance through the Patriot Act suggests that we may never be able to guarantee privacy of student records from an institutional gaze, despite our best intentions. And we can certainly not anticipate what further intrusions on privacy future world events might bring.

Enterprise database portfolio systems promise an unprecedented access to student work. Although a paper portfolio might end up on a dusty shelf, having been examined only by the author's teacher or a group of teachers or a few administrators at the author's school, databases make every artifact of student writing constantly accessible to the institution, ready for searching, analysis, and perusal. If the call for consistent technical standards for database

portfolio systems succeeds, we may look forward to having every piece of our writing available for viewing well after we (either as students or as teachers) have moved on to another school or to another stage of life. In effect, database e-portfolio systems have the potential to foster not only student learning but also institutional surveillance.

#### 4.6. *Losing reflection*

Finally, the most troubling trend is a diminishment of reflection as the center of portfolio pedagogy, which suggests both a misunderstanding of the pedagogy and a shift of emphasis away from portfolios and toward other kinds of institutional services. Finding the details of implementing reflection in these systems is difficult for a critical observer; some systems do not allow unregistered users to access portfolios even on a demonstration status, and others have relatively little online documentation. But of the 48 systems I examined, only 26 (53%) made explicit provisions for reflection, which seems to suggest that reflection is not seen as an important part of the system. This tendency seems to be greater in corporate than in academic systems: Of the 18 corporate systems, only 7 (39%) explicitly prompt, implement, or even refer to reflection, although of the 30 academic systems, 18 (60%) do so. This is not to say that the systems cannot be adapted to focus more on reflection. For example, some of the flexible systems, such as *LiveText*, can be customized by institutions to incorporate reflection and guidance in how to engage reflection for students. But the systems themselves tend to focus on institutional data collection, rather than on reflection.

Many of the systems that do implement reflection do so in a manner that will probably encourage formulaic responses: They simply ask for reflection in the artifact upload form. This practice treats reflection not as a central part of the portfolio, but as a final step before the submission of the so-called real work—a text box to fill out, typically with little guidance. For example, *TaskStream's* (2004) *Webfolio Builder*, a demo of which I examined in March 2004, prompts reflection on its web form simply by saying, “Include your own reflection on how you have met this standard.” Similarly, the *University of Louisiana at Lafayette and Xavier University of Louisiana's* (2004a) *PASS-PORT* system interface simply says in the reflection text box, “Erase this and add your reflection here” (p. 66).<sup>8</sup> Although students might reflect successfully in responding to such a prompt, it's unlikely that they will do so without considerable guidance. More likely, they will write a mere description of the artifact, rather than a meaningful reflection. Other systems seem to encourage reflection at the level of description; *Georgia State University's* (2001) *Efolios Project* lists reflections in a column titled “abstract” (see sample portfolios at <<http://rhetcomp.gsu.edu/display.htm>>).

Perhaps this problem arises because of an oversimplified conception of portfolio pedagogy. “Collect, select, reflect” may be a useful mnemonic, but it unfortunately straightens reflection's recursivity into a rigid linear process. The saying also makes the three activities sound equal, when in fact few portfolio advocates would see them as such. Collection, a mechanical process, requires only the commitment to collect and some system of collec-

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<sup>8</sup> Pass-Port has recently added a multimedia training presentation that gives students some further guidance in reflection, but this guidance is limited and buried far within the presentation (*University of Louisiana at Lafayette and Xavier University of Louisiana, 2004b*).

tion. It is an activity well suited to the arbitrary ordering of number or alphabet, as well as to the tools we use to manage such ordering: filing cabinets, computers, and databases. Selection is more dynamic, requiring choice and discretion. But neither collection nor selection are worthwhile learning tasks without a basis in reflection. Reflection undergirds the entire pedagogy of portfolios. It is the reason we collect—so we can reflect on what we have done. It is the rationale by which we select—the basis upon which we build the criteria for mature discretion. Without reflection, portfolio-making is lowered to the status of record-keeping.

This oversimplified version of portfolio pedagogy minimizes the significance of reflection. As I have noted, portfolio pedagogy typically recognizes reflection as an ongoing process of learning that extends through the creation of individual artifacts and between them. But simplistic versions of portfolio pedagogy tend to restrict reflection to the reflective statement. Reflective statements are important, particularly as they communicate the fruits of reflection to other people. But without a grounding in reflective thinking, reflective statements can be empty and formulaic. Reflective thinking is a complex and difficult task that requires careful mentoring and training in the context of a program-wide commitment. But too often, even in traditional portfolio implementations, only the reflective statement receives any attention. The process and activity of reflection becomes simply another artifact. Without reflective thinking, the reflective statement will likely be a peripheral artifact of the portfolio—simply an extra hoop the learner must jump through to submit the portfolio for assessment. Diminishing reflection to the level of artifact also encourages readers to under-rate the importance of reflection, which they might see as an empty expression they must get beyond to see the so-called real work.

Database systems that minimally prompt reflection on an artifact upload form further marginalize even the reflective statement by making it seem a mechanism, rather than the fruits of a dynamic process. Some positive effects may derive from such upload forms, but without clear training and practice in reflection-in-action and constructive reflection, students will more likely reiterate sterile and thoughtless formulas than engage in honest reflection.

## 5. Challenges and recommendations

Given these trends, we should think carefully about how we can clarify the role of portfolio pedagogy in these database systems, either bringing them more clearly into line with the pedagogy or distinguishing them more clearly from it. I offer the following recommendations for faculty and institutions involved in developing database systems or considering investing in such a system.

### 5.1. *Integrate meaningful reflection into database systems*

The most obvious step would be to bring reflection back to the center of database portfolio systems, rather than banishing it to a text box on an upload form. Doing so would require two concerted efforts: customizing tools and reforming curricula.

The database is a powerful and flexible technology, and it can help us to integrate reflection into database portfolio systems more meaningfully. At the least, systems should include a carefully designed and customized series of prompts and suggestions for reflection. Simply directing students to “reflect here” will not do the job. One model to follow is [Alverno College’s \(2003\) DDP](#), which provides guided “self-assessments” for each “key performance.” Moreover, systems should allow students to insert reflection wherever they want—not merely by attaching it as an appendage to a learning artifact. Otherwise, systems will constrain students from making or expressing valuable connections between the various elements included in their portfolios. Ideally, systems should also allow students to make direct links from within one learning artifact or reflection to another learning artifact or reflection—not just between one digital object and another, but from one idea in a reflective statement to a learning artifact or even to a particular example within an artifact. But most of all, schools should expect that they must customize systems to local needs. Because each school provides a unique learning experience, the tools for reflecting on that experience should be equally unique. Otherwise, students will present not an individualized narrative of their learning, but merely a generic description of how they fulfill standards.

However, these improvements would go for nothing unless the local academic community commits to integrating reflective thinking into curricula. Providing students with better and more flexible opportunities to reflect in a database portfolio is a start. But reflection is a difficult task; it is the point where students take what they often feel to be the busy-work of education and turn it into learning. Students need not only opportunities to do metacognition, but our guidance in how to engage in this task. To implement as well as just encourage reflection, schools will need to teach students both the methods and value of reflective thinking. This teaching might take the form of workshops outside the classroom or special classes such as freshman or senior seminars, but it is most effective when integrated into each class students take throughout their academic experience. In other words, implementing a portfolio pedagogy—whether through databases or through more traditional paper or electronic media—requires rethinking entire curricula, not just installing an enterprise database content management system.

### *5.2. Balance between standardization and flexibility*

Database portfolio systems employing either too much standardization or too much flexibility risk missing the pedagogical target.

A too-standardized system may encourage students to think of the portfolio merely as a form to fill out. Thus, rather than promoting metacognition, the overstandardized system may encourage the relatively thoughtless and mechanical process of uploading, rather than the rich process of considering one’s self and one’s learning experiences. These standardized systems are less likely to engage students in the process of imagining their identity as educated people. Making a portfolio should be an imaginative, creative, and ultimately rhetorical act. Portfolios are inherently rhetorical; they involve a rhetor (the student), an audience (the assessor), and a straightforward argument (that the student has fulfilled the stated objectives of learning). In order to engage in this rhetorical act in a meaningful rather than formulaic way, students must have control over how their portfolios are presented. At a basic level, students should be given the freedom to exercise their discretion in choosing what artifacts fulfill educational

standards; their ability to make wise choices is a measure of their learning. In addition, students should be allowed to control not only the textual rhetoric they employ in their reflections, but as much as is practiceable, the visual rhetoric of the portfolio's design and the structural rhetoric of its organization (that is, arrangement, traditionally considered a central part of rhetoric).

Giving students a wide variety of templates from which to choose is a modest step in the right direction—but this option has the potential of stereotyping students, forcing them to make their work and their identity fit into a preconceived visual rhetoric of a certain kind of student—the techie, the scientist, the businessperson, the humanist, the artist, the jock. Standardization is inherent to systems, and a certain level is necessary in portfolio assessment. But over-standardizing the form, appearance, and structure of the portfolio reduces the possibility for real reflection and learning. Instead of focusing on standardizing these elements, we should focus on explicitly stating what educational standards students must meet, then guide students in creating portfolios that show their fulfilment of those educational standards. The standardization, in other words, should pertain to the educational standards, rather than to the unique individuals who will be arguing that they have fulfilled the standards. Within locally determined limits, we should give students flexibility in how they choose to show rhetorically that they have fulfilled those standards.

By the same token, if we just provide students with flexible web-building tools, we have failed to give them adequate guidance. We have had web-building tools nearly from the beginning of the World Wide Web, and they can be used to create portfolios and promote reflection. But they are only tools, as applicable to creating e-commerce sites as e-portfolios. Without adequate guidance, students are more likely to create personal web sites with these tools than to engage in the hard work of metacognition.

Perhaps there is some balance to be struck between standardization and flexibility—a balance that will likely be different for every localized expression of portfolio pedagogy. For example, Cascadia Community College's *ePortfolio* allows students two levels of portfolio-building: a typical database- and forms-based enterprise tool for the beginner, and the option of graduating to standard web development tools for greater flexibility of expression. I encourage database portfolio developers to think about incorporating similar possibilities for balance between standards and individuals.

### 5.3. *Protect privacy and determine ownership*

The movement toward portability and persistence, combined with the increasingly corporate approach to database portfolio systems, suggests that we should be extraordinarily careful about issues of the privacy and ownership of portfolios.

Who owns a database portfolio? Who owns the database in which a portfolio rests? Is it the student who created the portfolio or the institution that required its creation? If portfolios are to become electronic, portable, and persistent, how can we ensure that portfolios will not migrate beyond the control and ownership of either students or institutions? After all, no matter how virtual its access seems, an electronic portfolio database is housed on a server. Someone, inevitably, will have official or unofficial access to all of its contents. Institutions will try to control this access, building in safeguards to ensure against the loss or corruption of data, as

well as against corrupt personnel or corrupt outsiders who might hack the system. But the possibilities of inappropriate access are nonetheless high.

Adding corporate service providers into this mix makes the question of control and access even more acute. What will happen to portfolios and the servers they sit on if institutions allow companies to manage their portfolio data storage? What will happen if companies go out of business, as they inevitably will? Or simply quit offering portfolio services, deciding that the market is not as flush as they had thought, the level of profit not as high as they had hoped? What control will universities have over the personnel of those corporations, or the corporations' operating and security practices?

My concerns about these issues arise from the sensitivity of the data in database portfolios. Doubtless, institutions will follow the guidelines of the Family Education Right to Privacy Act (FERPA) to guard student records. But database portfolios have the potential to hold an unprecedented amount of data about students, including actual student work, and they give much more transparent access to that data than ever before. While accessing a paper portfolio might involve a number of steps, including finding where the portfolio is housed and how it is filed, database portfolio systems allow institutions to use sophisticated search and retrieval tools to find student work quickly and conveniently. This transparency is convenient, but also potentially dangerous. For example, the goal of persistence for database portfolios holds up the possibility that a freshman essay trying out something controversial—toying with anarchism, for example—might come to light years later. Students' awareness that their work will persist and be visible to people far removed from their teachers might discourage them from openly grappling with new ideas. Do educational institutions really want to subscribe to systems that might lead to this kind of surveillance?

A variety of approaches would guard against the dangers inherent in persistent and portable student data in database portfolio systems. One possibility would be to put an expiration date on the more intrusive levels of access to student work. Institutions interested in accountability will want to retain the same metadata they have always kept—student course grades, student transcripts, and aggregate data about student success in programs, departments, and universities. But at the least, individual artifacts of student work should be discarded within a reasonable period of time after the student leaves the institution. Institutions or academics who wish to use student portfolios for research purposes should obtain uncoerced consent before students leave the institution.

#### *5.4. Distinguish between portfolios and academic records*

Schools thinking of implementing a database portfolio system have many complex questions to answer. But technical or infrastructure issues (to say nothing of marketing hype) may obscure the most basic question they should ask themselves: Do we want to invest in portfolio pedagogy as a better way of fostering student learning, or do we merely want a better way of keeping student records and making them visible to accreditors and institutions?

As educators, we should make a clear distinction between portfolios and academic records. Universities and schools have as one of their primary social functions, to certify the skills and preparation of graduates, and record-keeping is an essential and important part of this role. However, portfolio pedagogy should not fall to the mechanical status of record-keeping.

Requiring students to take responsibility for managing their own academic records differs significantly from helping students to take charge of their own learning.

By focusing on the pedagogical values of reflection, connection, activation, and process, portfolio pedagogy has the potential to help students become learned and self-empowered people. The messy but authentic picture of student learning portfolios should present relies on our dedication to creating portfolio assessment systems resting on these central values. Databases and other technologies may have a role in managing this approach to learning, just as the technologies of paper and pen have long had a role in education. Technology can also have a transformative effect, allowing us to explore new ways of meeting our goals and even changing our understanding of the goals themselves. But the goals should be primary. Database technology should not run the pedagogy; the pedagogy should determine how we use the technology.

## **6. What now?**

As I've noted in this article, many of the systems currently offered use portfolio buzzwords, although providing something remarkably different from portfolio pedagogy. These different offerings—course management services, student record management, institutional ports, and so on—may be worthwhile ends in themselves. They may also be compatible with portfolio pedagogy. But simply calling such a system a portfolio widens that term well beyond portfolio pedagogy. If portfolio pedagogy has any credence as an effective learning and assessment tool, we should continue to look critically at all e-portfolio systems, continually striving to keep their focus on the core values of portfolios.

But there are more practical steps to take, as well. To begin with, we should recognize the depth of our own experience with portfolios. As teachers of writing, we have at least two and a half decades of experience with portfolio systems. We have made the mistakes and learned the lessons that should inform the broader development of portfolio systems with database technologies. Speaking honestly (if not humbly), we are more competent to guide the development of e-portfolio systems than are the educational administrators, technology experimenters, and corporate marketers who are most involved in charting the path of database portfolio development—if for no other reason than that we understand portfolios as a pedagogy, rather than as a data management technique.

Simply celebrating our own value would make a pretty dull party, so we must also convince others of our experience in this area and get involved in database portfolio initiatives. There are a number of centers of discussion about database portfolios that could benefit from and would even welcome the leavening our experience provides. Although some initiatives are more or less exclusive to the institutions that support them, some are more open. The Electronic Portfolio Action Committee (EPAC) Virtual Community of Practice (sponsored by the EDUCAUSE National Learning Infrastructure Initiative and the American Association of Higher Education), for example, is a group of scholars interested in database portfolio developers that welcomes new members.<sup>9</sup> The ePortConsortium (<<http://www.eportconsortium.org>>) is a similar group,

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<sup>9</sup> To join, visit <<http://www.educause.edu/ElectronicPortfoliosVirtualCommunityofPractice%28EPAC%29/1154>>.



representing a variety of corporate and academic interests. Joining such organizations will give portfolio adherents a greater say in the dialogue about database portfolio development.

Once we do get involved, we should endeavor to gather more information and conduct more research into the viability and pedagogical effectiveness of database portfolios. Simply put, nobody knows how well these systems will work; nobody knows whether learning will improve or not; nobody knows whether students will end up with a more positive or fulfilling learning experience than with more traditional technologies. In particular, those of us working at institutions involved in database portfolio initiatives should take advantage of that opportunity to examine and observe database portfolios in action, as well as share the results of our research.

Finally, with a firm foundation of research and a clear understanding of portfolio pedagogy, scholarly organizations such as Computers and Writing, National Council of Teachers of English (NCTE), Conference on College Composition and Communication (CCCC), or perhaps even one of the more open database portfolio groups such as EDUCAUSE, should develop and publish consistent standards to help database portfolio developers create systems that encourage reflective thinking and authentic assessment.<sup>10</sup> These standards might be based on the version of portfolio pedagogy I have described here, or they might not—but they should be based on a spectrum of understanding about the essential values of portfolio pedagogy. Without such broad standards, we may find that we are working within a system designed more to keep track of us, than to help us learn and teach.

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<sup>10</sup> FutureEd, Inc., a Canadian firm, is developing a set of quality standards for ePortfolios (FutureEd, 2003). Although these standards are still under development, they seem to be based at least in part on the Canadian Labour Force Development Board's standards, which focus on the needs of "labour force partners" (that is, employers) to have consistent information about employee qualifications, rather than focusing on educational standards for learning. Other discussions of standards in the movement seem focused more on technological standards, rather than educational standards (see, for example, Rickard & Suter, 2003).

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