

# Electronic Portfolios as Digital Stories of Deep Learning

Emerging Digital Tools to Support Reflection in Learner-Centered Portfolios

*This paper is under development, so comments are welcome!*

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Thought flows in terms of stories - stories about events, stories about people, and stories about intentions and achievements.

The best teachers are the best story tellers. We learn in the form of stories.

--Frank Smith

“STORIES DEFINE:

Who we are.

Where we have come from.

Where we are going. . . and

What we care about!

Stories give life!”

-- Dana Atchley – <http://www.nextexit.com/>

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This paper will discuss the concepts of "Electronic Portfolios as Digital Stories of Deep Learning" and "Digital Storytelling as Reflective Portfolio" by linking two dynamic processes to promote deep learning: Portfolio Development and Digital Storytelling. A major challenge today with electronic portfolios is to maintain learner intrinsic motivation to willingly engage in the portfolio process. The use of multimedia tools is one strategy that involves and engages learners; another technology that is engaging young people today is the web log or "blogs" and "wikis." But first, let's look at the issues that are turning learners off about the current approach to electronic portfolios, at least in Teacher Education.

## **Philosophical and Assessment Issues with portfolios in education**

There are some underlying philosophical issues that need to be addressed with portfolios in education. The literature suggests that portfolios can have multiple purposes (Wolf, 1999): as assessment tools to document the attainment of standards (a positivist model--the assessment portfolio); as digital stories of deep learning (a constructivist model--the learning or process portfolio); and as digital

resumes to highlight competence (a showcase model-- the best works/marketing/employment portfolio). These models are often at odds, philosophically, with each other. While administrators often implement electronic portfolios for the assessment purpose, the students usually view this type of portfolio as something "done to them" rather than something they WANT to maintain as a lifelong learning tool. A portfolio that is truly a story of learning is OWNED by the learner, structured by the learner, and told in the learner's own VOICE (literally and rhetorically).

Barton and Collins (1993) stated, "the first and most significant act of portfolio preparation is the decision of the purposes for the portfolio" (p. 203). What are your purposes in creating an electronic portfolio? To support ongoing learning/professional development? To support formative and summative assessment? To support marketing and employment? These are three major purposes for electronic portfolios... and they are all different and require different types of technology tools. A learning portfolio can be supported very nicely with a web log environment ("blogs"), whereas an assessment portfolio that ties artifacts to a set of standards, with feedback or validation, is best implemented through a relational database structure. A marketing or employment portfolio only needs an authoring environment that supports formatting and hyperlinking on a web-based server.

Most commercial portfolio systems have been built to appeal to administrators' needs for assessment data and around the positivist model (a few of my teacher education buddies jokingly call it "deanware"). I am very concerned that the current crop of commercial tools are "perversions" (Lee Shulman's term) of the portfolio concept. I am concerned that in the name of assessment, we are losing a powerful tool to support deep learning. I am concerned that that we are losing the "stories" in e-portfolios in favor of the skills checklists. Portfolios should support an environment of reflection and collaboration. It is a rare system that supports those multiple needs. That is why I often advocate for three interconnected systems: an archive of student work, an assessment management system to document achievement of standards, and an authoring environment where students can construct their own electronic portfolios and reflective, digital stories of learning (see my [online article](#) with more in-depth detail about this [balanced model](#)).

There is a lot of research happening on the use of gaming technology in education, to make learning more engaging. I believe the use of technology can be a motivating factor for portfolios, especially if we can make it engaging for the learners, and give them an opportunity to express their own voice in their

portfolios. I have redesigned [my CD](#) to address the use of digital storytelling for reflection and deep learning.

A major issue faced by educators is the differing perceptions about portfolios and their use in education. Some people think the primary purpose of a portfolio is for summative assessment (a culture of compliance or a checklist of skills). Others think the primary purpose of a portfolio is assessment for learning and to tell the learner's story (a culture of lifelong learning/professional development). These two purposes are often in conflict with each other. Green and Smyser (1995) identify these two contradictory purposes: formative and summative evaluation. One respondent in Anderson and DeMuelle's (1998) survey of portfolios in Teacher Education asked, "How can a portfolio truly capture the individuality of the learner and still be used as a 'high stakes' assessment?"

At the 2001 AERA conference in Seattle, Placier, Fitzgerald, and Hall (2000) reported on a study they conducted with teacher candidates at the University of Missouri-Columbia. Their paper discussed the "politics" of portfolios in teacher education and issues of using portfolios for high-stakes assessment:

The purpose of the portfolio was thus transformed from the individualistic, developmental, constructivist vision in the Design Document to a policy tool designed to address external program and state requirements... When people in power (i.e., the state, a teacher education faculty) impose a cultural tool, less powerful agents (preservice teachers) may master the tool but use it with reluctance or in subversive ways, or resist its use altogether.

The paper also covered issues of faculty disengagement, lack of professional development, assessment difficulties, and uneven implementation, but the title of the paper ("I Just Did It to Get it Done"— The Transformation of Intentions in Portfolio Assessment in Teacher Education) reveals the major issue that came out of their research: that most of the students are jumping through hoops.

"Most said they produced these portfolios just to 'get them done,' because the program required them – not because they found them personally meaningful."

The issues raised here have been repeated in many Teacher Education programs across the country, as pressures of accreditation and high stakes program assessment are creating an environment that narrows the focus of student portfolios. One example that has received a lot of attention was highlighted in an *Educause Quarterly* (2004). Love, McKean, and Gathercoal postulated the following levels of maturity in portfolio development, based on their experience in the Teacher Education program at California Lutheran University:

- Level 1 - Scrapbook
- Level 2 - Curriculum Vitae
- Level 3 - Curriculum Collaboration Between Student and Faculty
- Level 4 - Mentoring Leading to Mastery
- Level 5 - Authentic Evidence as the Authoritative Evidence for Assessment, Evaluation, and Reporting

In my opinion, these levels of maturity are very institution-centered, representing a process of accountability and summative assessment.

There is a rich legacy in the K-12 portfolio literature and much can be learned from the literature on paper-based portfolios. As adult learners, we have much to learn from how children approach portfolios. Contrast the levels above with "Stages of Ownership of the Portfolio" [Hebert, Elizabeth (2001) *The Power of Portfolios*. Jossey-Bass, p.45]. Elizabeth Hebert is the principal at Crow Island School in Winnetka, Illinois. Her book is a story about the growth of portfolios in her school over the last decade. Their approach to portfolios focuses on student ownership of the portfolio:

(read from bottom to top in order of maturity)

- Child-organized portfolio
- Teacher-and-child-organized portfolio
- Progress portfolio
- Showcase portfolio or achievement portfolio
- Teacher-organized portfolio or curriculum portfolio
- Collection of child's work
- Folder of child's work

Hebert discussed the purpose of the portfolio: "If we can begin to consider that the primary purpose for the portfolio is to provide a vehicle for each child to grow metacognitively and to demonstrate competence in telling the story of learning, the door is open for the child to assume ownership." The contrast between these two approaches is startling. Hebert's levels are learner-centered. The perspective really showcases the differences between using the portfolio as assessment *of* learning (the California Lutheran model) and using portfolios as assessment *for* learning.

### **Assessment of Learning - Assessment for Learning**

This distinction in types of assessment is elaborated by [Rick Stiggins \(2002\)](#) in an outstanding article about the current assessment crisis. It is important to make

this distinction when considering the role of portfolios in assessment. As noted in an [earlier article](#), the use of portfolios in high stakes assessment *of* learning is problematic, but the use of portfolios in formative assessment (for instruction) and assessment *for* learning is powerful.

The research being conducted in Britain ([Black & Wiliam, 1998](#)) on [Assessment FOR Learning](#) provides firm evidence that "formative assessment is an essential component of classroom work and that its development can raise standards of achievement" more effectively than any other strategy. Current research is adding further evidence in support of this claim and the empirical evidence is underpinned by theory from the psychology of learning and studies of learning motivation. The Assessment Reform Group provides this definition:

Assessment for Learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there.

Here are their ten research-based principles of Assessment for Learning (AFL) to guide classroom practice:

- AFL should be part of effective planning of teaching and learning
- AFL should focus on how students learn
- AFL should be recognized as central to classroom practice
- AFL should be regarded as a key professional skill for teachers
- AFL should be sensitive and constructive because any assessment has an emotional impact
- AFL should take account of the importance of (and foster) learner motivation
- AFL should promote commitment to learning goals and a shared understanding of the criteria by which they are assessed
- AFL develops learners' capacity for self-assessment so that they can become reflective and self-managing
- AFL should recognize the full range of achievements of all learners
- Learners should receive constructive guidance about how to improve

Here is a comparison of these two key assessment purposes, based on work done in Britain (see [www.assessment-reform-group.org.uk](http://www.assessment-reform-group.org.uk)):

<b>Assessment <u>of</u> Learning</b>	<b>Assessment <u>for</u> Learning</b>
Checks what has been learned to date	Checks learning to decide what to do next

Is designed for those not directly involved in daily learning and teaching	Is designed to assist teachers and students.
Is presented in a formal report	Is used in conversation about learning
Usually gathers information into easily digestible numbers, scores and grades	Usually detailed, specific and descriptive feedback in words (instead of numbers, scores and grades)
Usually compares the student's learning with either other students or the 'standard' for a grade level	Usually focused on improvement, compared with the student's 'previous best' and progress toward a standard
Does not need to involve the student	Needs to involve the student -- the person most able to improve learning

According to Anne Davies, "Assessment for learning is ongoing, and requires deep involvement on the part of the learner in clarifying outcomes, monitoring on-going learning, collecting evidence and presenting evidence of learning to others." She further points out, Assessment that directly supports learning has five key characteristics:

- learners are involved so a shared language and understanding of learning is developed,
- learners self-assess and receive specific, descriptive feedback about the learning during the learning,
- learners collect, organize, and communicate evidence of their learning with others,
- instruction is adjusted in response to ongoing assessment information, and
- a safe learning environment invites risk taking, encourages learning from mistakes, enables focused goal setting, and supports thoughtful learning.

How does Assessment for Learning relate to electronic portfolios? The issues of using portfolios for high stakes assessment has already been discussed by Wilkerson and Lang (2003) and in my [earlier paper](#). To be effectively used to support assessment for learning, electronic portfolios need to support the learner's ongoing learning. Here is my comparison of electronic portfolios used as assessment of learning with those that support assessment for learning:

<b>Portfolios used for Assessment <u>of</u> Learning</b>	<b>Portfolios that support Assessment <u>for</u> Learning</b>
Purpose of portfolio prescribed by institution	Purpose of portfolio agreed upon with learner
Artifacts mandated by institution to	Artifacts selected by learner to tell the

determine outcomes of instruction	story of their learning
Portfolio usually developed at the end of a class, term or program - time limited	Portfolio maintained on an ongoing basis throughout the class, term or program - time flexible
Portfolio and/or artifacts usually "scored" based on a rubric and quantitative data is collected for external audiences	Portfolio and artifacts reviewed with learner and used to provide feedback to improve learning
Portfolio is usually structured around a set of outcomes, goals or standards	Portfolio organization is determined by learner or negotiated with mentor/advisor/teacher
Sometimes used to make high stakes decisions	Rarely used for high stakes decisions
Summative - what has been learned to date? (Past to present)	Formative - what are the learning needs in the future? (Present to future)
Requires Extrinsic motivation	Fosters Intrinsic motivation - engages the learner
Audience: external - little choice	Audience: learner, family, friends - learner can choose

## Portfolio as Story

If we are to help learners create portfolios that truly support assessment for learning and follow the ten AFL principles, then we need to look at strategies that help the learner tell a story of their own learning... strategies that foster learner self-motivation. Ann Davies states, "Research is indicating that closing in on a goal triggers a part of the brain linked to motivation (e.g. Csikszentmihalyi, 1990; Pert, 1997; Pinker, 1997). Setting goals is a powerful way to focus students' learning."

In the early 1990s, Pearl and Leon Paulson created a metaphor for portfolios as a tool to construct meaning. They stated, "The portfolio is a laboratory where students construct meaning from their accumulated experience." (Paulson & Paulson, 1991, p.5) They also pointed out that portfolio tell a story:

A portfolio tells a story. It is the story of knowing. Knowing about things... Knowing oneself... Knowing an audience... Portfolios are students' own stories of what they know, why they believe they know it, and why others should be of the

same opinion. A portfolio is opinion backed by fact... Students prove what they know with samples of their work.” (Paulson & Paulson, 1991, p.2)

There are many purposes:& goals for the portfolio which determine the content: Learning/Process, Assessment, and Marketing/Showcase. Learning/Process Portfolios involve the focus on the Greek Philosophers' directive, “know thyself” which can lead to a lifetime of investigation. Self-knowledge becomes an outcome of learning. In a portfolio development study (Brown, 2002) conducted with adult learners developing portfolios to document prior learning, Judith Brown found the following outcomes: increased students’ understanding of what, why, and how they learned throughout their careers, enhanced their communication and organization skills, reinforced the importance of reflection in learning. The following technology can support Learning or Process Portfolios: Web Logs (‘blogs’), Reflective journals, Online discussions, and Self-report surveys.

### e-portfolio as Storytelling and the Portfolio Development Process

The following diagram outlines my proposition that we need to link two dynamic processes together to support deep learning: electronic portfolios and digital storytelling.



[Click here for full size version of this graphic.](#)

### Portfolio Processes

Traditional Portfolio Processes include:	Adding Technology allows the addition and enhancement of:
<ul style="list-style-type: none"> <li>Collecting</li> </ul>	<ul style="list-style-type: none"> <li>Archiving</li> </ul>



<ul style="list-style-type: none"> <li>• Selecting</li> <li>• Reflecting</li> <li>• Projecting</li> <li>• Celebrating</li> </ul>	<ul style="list-style-type: none"> <li>• Linking/Thinking</li> <li>• Storytelling</li> <li>• Collaborating</li> <li>• Publishing</li> </ul>
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The following Reflective Questions tie the Past to the Future:

- What? (The Past) What have I collected about my life/work/learning? (my artifacts)
- So What? (The Present) What do those artifacts show about what I have learned? (my current reflections on my knowledge, skills and dispositions)
- Now What? (The Future) What direction do I want to take in the future? (my future learning goals)

The Portfolio Process could be linked to the Digital Storytelling Process. What is Digital Storytelling? In this context, learners create a 2-4 minute digital video clip that is told in first person narrative, in their own voice, illustrated by (mostly) still images, with the addition of a music sound track to add emotional tone. The [Center for Digital Storytelling](#) has identified Seven Elements of Digital Storytelling:

- **A Point (of View):** Stories are told to make a point and should not be presented as a recitation of mere facts. Define the premise of your story so that all parts can serve to make the point. Consider your audience and direct the point to them.
- **A Dramatic Question:** You want to capture your audience’s attention at the beginning of the piece and hold their interest throughout. Typically you want to pose the dramatic question in the opening lines and resolve it in the closing lines.
- **Emotional Content:** Emotional content can help hold your audiences attention. The images, effects, music and tone of voice all lend to contributing emotion to the piece. Try to keep the elements consistent with the emotion of the moment.
- **The Gift of Your Voice:** Most likely the first time you heard your recorded voice you couldn’t stand the way it sounded. And you still can’t. Suggestion....get over it! Your voice is a great gift and even though you don’t like to hear it, others do. If you “read” your script your audience will not know how to react. Take time to learn and practice your script so you can speak in a conversational voice. Record several takes and select the best one. Trust that your audience will think it is perfect
- **The Power of The Soundtrack:** Music is a big plus to a digital story. The right music can set the story in time and can convey emotion. Play music

behind an image and a specific emotion is generated. Change the music behind the same image and an entirely different emotion is experienced. Sound effects can add tension and excitement to a piece, but be careful, they can be a distraction too.

- **Economy:** A compact, fast moving digital story will contain only those elements necessary to move the audience from beginning to end. We know that our brains are constantly filling in (from our own experiences) details from suggestions made by sights and sounds. Don't give every detail to clarify your story, let your audience fill in some of the blanks.
- **Pacing:** The rhythm of the piece is what keeps your audience's interest in the story. Music tempo, speech rate, image duration, and panning and zooming speed all work to establish pace. Generally pace will be consistent, but once in a while it will pause, accelerate, decelerate, stop or blast-off.

**Why include Storytelling in Electronic Portfolios?** Here are some of the compelling reasons for integrating these two processes together:

- **Learner Motivation and Affect** - This issue is discussed in more detail in another [paper](#) on the competing paradigms in portfolio development.
- **Constructivist Approach to Project-Based "Assessment-as-Learning"**
- **Learner Ownership and Engagement with Portfolio**
  - The tools should allow the learner to feel in control of the process, including the "look and feel" of the portfolio.
- **Emotional Connection**
  - There is an affective component of the portfolio development process, that supports deep learning.
  - **Deep Learning** (as described by Barbara Cambridge):
    - involves reflection,
    - is developmental,
    - is integrative,
    - is self-directive, and
    - is lifelong

<b>Deep Learning versus Surface Learning*</b>	
<b>Attributes of Deep Learning</b>	<b>Attributes of Surface Learning</b>
Learners relate ideas to previous knowledge and experience.	Learners treat the course as unrelated bits of knowledge.
Learners look for patterns and unrelated principles.	Learners memorize facts and carry out procedures routinely.

Learners check evidence and relate it to conclusions.	Learners find difficulty in making sense of new ideas presented.
Learners examine logic and argument cautiously and critically.	Learners see little value or meaning in either courses or tasks.
Learners are aware of the understanding that develops while learning.	Learners study without reflecting on either purpose or strategy.
Learners become interested in the course content.	Learners feel undue pressure and worry about work.
*Source: adapted from Entwistle, 2001, quoted in Weigel, V.B. (2001) <i>Deep Learning for a Digital Age: Technology's Untapped Potential to Enrich Higher Education</i> . Jossey-Bass, p.6	

- **Learner's Authentic Voice**
  - As learners create their own electronic portfolios, their unique "voice" should be evident from navigating the portfolios and reading the reflections on the screen.
  - In an electronic portfolio, the ability to add multimedia elements expands the definition of "voice" within that rhetorical construct.
- Voice = Authenticity
  - multimedia expands the "voice" in an electronic portfolio (both literally and rhetorically)
  - personality of the author is evident
  - gives the reflections a uniqueness
  - gives the feeling that the writer is talking directly to the reader/viewer
- **Portfolio as Lifelong Learning/ Professional Development Tool**
  - The tools used to develop the portfolio should be accessible to a learner throughout their chosen career.
  - Dependence on proprietary software that is not accessible to a learner after graduation may not, in the long term, provide the skills necessary to maintain the e-portfolio as a lifelong professional development tool.
- **Constructivist model supports deep learning**
  - As Portland State University has found, hyperlinking leads to metacognition, which leads to deeper learning.
  - Whenever possible, learners should have the opportunity to plan and assess their own learning.

#### Congruence with Philosophy

- Create a system that is congruent with underlying learning philosophy or

conceptual framework: positivism vs. constructivism; psychometrics vs. hermeneutics; portfolio as test (or skills checklist) vs. portfolio as story

### **Contrasting Paradigms of Portfolios**

Paulson and Paulson (1994) have discussed portfolios developed under two different approaches: Positivism and Constructivism. They identified these tension between the two approaches: "The two paradigms produce portfolio activities that are entirely different... The positivist approach puts a premium on the selection of items that reflect outside standards and interests... The constructivist approach puts a premium on the selection of items that reflect learning from the student's perspective."

### **Digital Storytelling and Reflection**

Donald Schön (1988) discussed storytelling as a mode of reflection:

“...for storytelling is the mode of description best suited to transformation in new situations of action.... Stories are products of reflection, but we do not usually hold onto them long enough to make them objects of reflection in their own right.... When we get into the habit of recording our stories, we can look at them again, attending to the meanings we have build into them and attending, as well, to our strategies of narrative description.”

Janice McDrury and Maxine Alterio (2002), two educators from "down under" have written a book called *Learning through Storytelling in Higher Education* in which they outline their theory of storytelling as an effective learning tool. They have linked the art of storytelling with reflective learning processes supported by the literature on both reflection and learning as well as making meaning through storytelling. The authors propose storytelling as a theory of learning within a socio-cultural framework and introduce a Storytelling Pathways Model and their Reflective Learning through Storytelling Model. Compared with Moon's (1999) Map of Learning, they outline five stages of Learning through Storytelling (p. 47):

Map of Learning (Moon, 1999)	Learning through Storytelling
<ul style="list-style-type: none"><li>• Noticing</li><li>• Making sense</li><li>• Making meaning</li><li>• Working with meaning</li><li>• Transformative learning</li></ul>	<ul style="list-style-type: none"><li>• Story finding</li><li>• Story telling</li><li>• Story expanding</li><li>• Story processing</li><li>• Story reconstructing</li></ul>

As individuals and institutions approach the portfolio as a story of learning, it is important to consider the theoretical underpinnings of this process. McDrury and Alterio provide the theoretical support for adding storytelling into the e-portfolio process, as they lay out their theory:

...when we tell our own practice stories and listen to those of others, then work together to process them deeply and critically, we connect in ways which enrich self, relationship and practice, Through these connections we construct new knowledge and advance our understanding of the relationships we construct and are constructed by. For these reasons we end our journey convinced that storytelling can, and should, be viewed as a theory of learning. (p.175)

### **Web logging or "blogging"**

Another technology that has potential to make electronic portfolios more engaging is the web log or "blogs" as it is known to those who participate in them. As the Stanford Learning Technologies group has evolved the technology to support its research project on "folio thinking," researcher Helen Chen reports that they are beginning to use blog or "wiki" software to support students' reflections. David Tosh and Ben Werdmuller of The University of Edinburgh have published a [paper online](#) (PDF) entitled, "ePortfolios and weblogs: one vision for ePortfolio development."

A weblog is defined as any web page with content organised according to date. Originally, these were pages keeping track of a user's discoveries on the newlyemerging World Wide Web; later the definition expanded to encompass personal diaries, work-related progress reports and even summaries of current events on newspaper websites. (pp. 3-4)

In the context of an ePortfolio, course tutors, lecturers, clubs and societies could all have their own weblogs which users could view on their "friends" page. Students can share information they've found or ideas they have on a particular subject, as well as the more social messages which may form a compelling reason for them to use the technology to begin with.(p.4)

Since one of the main goals of a portfolio is reflection on learning, perhaps a blog is a good option, since it can be used as an online reflective journal and an environment that invites collaboration. In the elearningpost blog, graduate student Dan Saffer [discussed](#), "Why I Blog my Postgrad Course." His remarks about what he got out of the process would make many Teacher Education faculty smile, since his insights are consistent with our goals for our teacher candidates' reflections in their portfolios:

Lately, a lot of the things I'm learning in different classes have all started to come together; they all seem to be talking about similar things or things are starting to fit into patterns. Some of this is intentional, some probably not. But I doubt I would have been able to see those patterns as clearly without the blog. There's something about putting your entire coursework together in one place that allows you to more easily make that kind of analysis.

**Wikis** are online documents that can be edited by anyone with access to the page. The tool could be useful for collaborative writing.

## **Tools**

So what are the tools that best meet the needs of learners for a constructivist "portfolio as story?" There are different tools for different purposes. Developing an electronic portfolio begins first with developing a digital archive of a learner's work, from which a variety of portfolios can be created, depending on purpose and audience. Essentially, it is a content management process with reflection on learning. There are two major directions in electronic portfolio development. One path uses generic tools (GT) such as word processors, presentation software, HTML editors, multimedia authoring tools, portable document format (PDF), or other commonly used productivity tool software found on most desktop computers. The second path uses an "information technology" customized systems approaches (CS) that involve servers, programming, and databases. In the article that David Gibson and I published online, you can read about the pros and cons of each approach and the quality issues under each environment: <http://electronicportfolios.org/ITFORUM66.html>

I recommend establishing a system that is very open, and allows for multiple purposes, so that learners can develop a portfolio that meets THEIR goals. I have seen effective use of [Userland's Manila](#) content management software as an open environment that is very close to a GT approach in a web-based environment. While not specifically an electronic portfolio program, the software allows the accumulation of a digital archive of artifacts (called "gems" and "pictures") and allows the user to build a series of web pages (called "stories") using those documents. Learners can construct their own online portfolios using the authoring and formatting tools that are built into the software. Other software packages are [PHPNuke](#), [mySQL](#) and [Moodle](#).

The second type of software are tools of digital storytelling: presentation programs or video editing software. The Center for Digital Storytelling has published the "Cookbook" using Adobe Premiere as the video editing tool with Adobe Photoshop to prepare the images. Until just recently, it was the only

"prosumer" digital video program created for both Macintosh and Windows platforms (Adobe has since announced that it is no longer updating the Macintosh version of Premiere). This is also the software used by the Capture Wales Digital Storytelling project. However, these digital video programs are relatively expensive and have a steep learning curve.

There are some low-end video editing tools that are low cost or free: Apple Computer's [iMovie](#) on the Macintosh platform, Microsoft's [MovieMaker2](#) and Pinnacle Studio on the Windows XP platform. Microsoft has also created [PhotoStory](#), an inexpensive program that is part of Windows XP Plus! Digital Media Edition to create digital videos from still images, and Apple Computer's [iPhoto](#) for Macintosh OS X can be used to create digital videos from still images.

Examples of Digital Stories created with Apple digital video tools:

- [Choices](#) - a digital story about an early learning experience that shaped my life (created with iMovie4)
- [My Autobiography](#) - a digital story created by a second grader using iPhoto with audio added by [Sound Studio](#) and [QuickTime Player Pro](#)

## **Resources on Digital Storytelling**

### **Books on Digital Storytelling**

Howell, D.D. & Howell, D.K. (2003) *Digital Storytelling: Creating an Estory*.  
Linworth Pub Co

Lambert, Joe (2002) *Digital Storytelling: Capturing Lives Creating Community*.  
Life on the Water Inc.

Visions Technology in Education (2003?) *Digital Storytelling with PowerPoint and Digital Storytelling with iMovie*

### **Websites on Digital Storytelling**

#### **Digital Storytelling in Education**

[Scott County Schools \(Kentucky\)](#)  
[NCREL Success Story](#)

[Telling Their Stories](#)

#### **Digital Family Stories**

*Using today 's technology  
to tell yesterday's stories  
for tomorrow's generations.*

[Center for Digital](#)

[Heirloom Stories](#)

[Storytelling](#)

[Digital Storytelling \(N.C.\)](#)

[Canadian Film Centre](#)

[Creative Narrations \(Boston\)](#)

[Dana Atchley's Next Exit](#)

[Digital Storytelling Finds its Place in the Classroom](#)

[The Dostal Project](#)

[Capture Wales](#)

## **Digital Storytelling Software**

Macintosh OS X

- Apple Computer's [iMovie](#)
- Apple Computer's [iPhoto](#)
- Felt Tip Software's [Sound Studio](#)
- Apple's [QuickTime Player Pro](#)
- Apple's [Final Cut Express](#) and [Final Cut Pro](#)
- [LQGraphics](#) software [Photo to Movie](#) and [Image Surfer](#)

Windows XP

- Microsoft's [MovieMaker2](#)
- [PhotoStory](#) part of Windows XP Plus! Digital Media Edition
- [Pinnacle Studio](#)
- [Adobe Premiere](#)

## **Resources on Blogs and Wikis**

- [Notetaker Software](#)
- [schoolblogs](#)
- [Blogroots](#)
- [History of Web Logs](#)
- [Blogger](#)
- [Wiki Wiki Web](#)

For more cross-platform software, consult the [Digital Family Story](#) website.

## **References**

Anderson, R. S., and DeMuelle, L.. (1998). Portfolio use in twenty-four teacher education programs. *Teacher Education Quarterly*, 25(1):23-31.



Black, P., and Wiliam, D. (1998). "Inside the Black Box: Raising Standards Through Classroom Assessment." *Phi Delta Kappan*, October 1998. [Retrieved June 10, 2004 from: <http://www.pdkintl.org/kappan/kbla9810.htm>]

Green, J., and Smyser, S. (1995). Changing conceptions about teaching: The use of portfolios with pre-service teachers. *Teacher Education Quarterly*, 22(2):43-53.

Hebert, E. (2001) *The Power of Portfolios*. Jossey-Bass

Love, D., McKean, G., Gathercoal, P. (2004) "Portfolios to Webfolios and Beyond: Levels of Maturation" *Educause Quarterly*. Volume 27 Number 2. [Retrieved May 17, 2004 from: <http://www.educause.edu/pub/eq/eqm04/eqm0423.asp?print=yes>]

McDrury, J., Alterio, M. (2003) *Learning through Storytelling in Higher Education*. London: Kogan-Page.

Paulson, F.L. & Paulson, P. (1994) "Assessing Portfolios Using the Constructivist Paradigm" in Fogarty, R. (ed.) (1996) *Student Portfolios*. Palatine: IRI Skylight Training & Publishing

Placier, P., Fitzgerald, K., and Hall, P. (2000) "I Just Did It to Get it Done" – The Transformation of Intentions in Portfolio Assessment in Teacher Education. Paper presented at annual meeting of AERA, April 2001, Seattle WA. [Retrieved May 17, 2004 from: <http://www.coe.missouri.edu/~sti/papers/AERA2001/portfolio.pdf>]

Saffer, D. "Why I Blog my Graduate Course" *eLearningPost*. [Retrieved May 17, 2004 from: <http://www.elearningpost.com/features/archives/002351.asp>]

Schön, D. (1988). "Coaching Reflective Teaching" in P. Grimmett & G. Erickson (1988). *Reflection in Teacher Education* (pp. 19-29). New York: Teachers College Press.

Stiggins, R. J. (2002). "Assessment Crisis: The Absence of Assessment FOR Learning." *Phi Delta Kappan*, June 2002. [Retrieved July 17, 2004 from: <http://www.pdkintl.org/kappan/k0206sti.htm>]

Tosh, D. and Werdmuller, B. (2004) "ePortfolios and weblogs: one vision for ePortfolio development." [Retrieved June 2, 2004 from: [http://www.eradc.org/papers/ePortfolio\\_Weblog.pdf](http://www.eradc.org/papers/ePortfolio_Weblog.pdf)]

Tosh, D. and Werdmuller, B. (2004) "Creation of a learning landscape: weblogging and social networking in the context of e-portfolios." [Retrieved July 16, 2004 from: [http://www.eradc.org/papers/Learning\\_landscape.pdf](http://www.eradc.org/papers/Learning_landscape.pdf)]

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Modified August 9, 2004

<http://electronicportfolios.com/digistory/epstory.html>

Barrett, H. (2004). Electronic portfolios as digital stories of deep learning. Emerging digital tools to support reflection in learner-centered portfolios [Documento electrónico]. En: H. Barrett. (2008). *Electronic Portfolios and Digital Storytelling for lifelong and life wide learning* [Sitio Web]. En línea: <http://electronicportfolios.com/digistory/epstory.html>