2013 ATEA'S 50TH NATIONAL CONFERENCE ON TECHNICAL EDUCATION

"e-Portfolios: Methodology to Validate and Promote Critical Workforce STEM Skills"

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Provide both a technical and marketing perspective of developing web-based, e-Portfolios so that students in technical education are able to market their skills, abilities, and community service to prospective employers in real-time by demonstrating actual work accomplished, whether class projects, critical skills, volunteer work, or actual work experience.

Question for the audience:

By show of hands, How many of you **currently** have an **_active e-Portfolio_** and/or teach classes that **_develop student e-Portfolios_**?
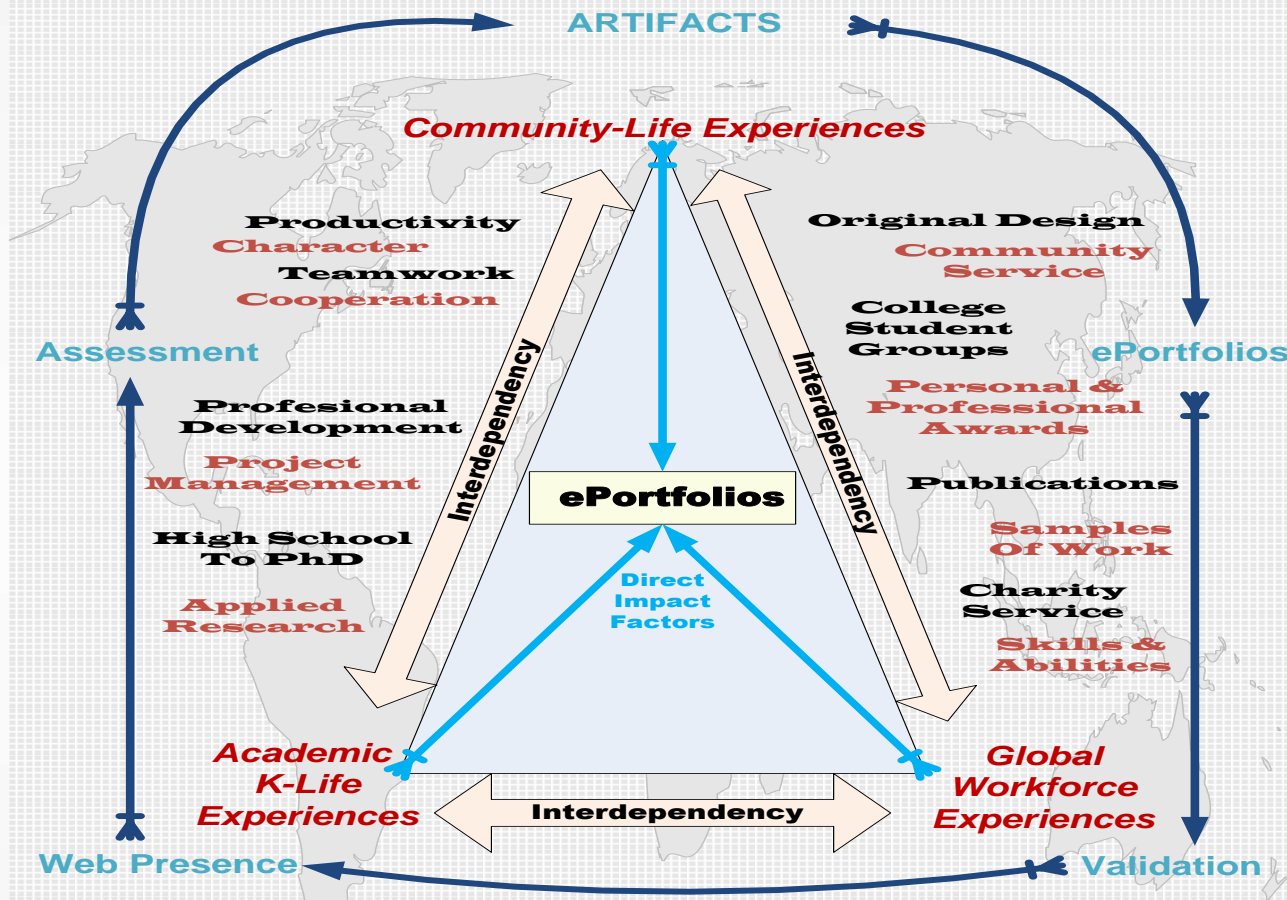
A 'best practices" definition for e-Portfolio(s)
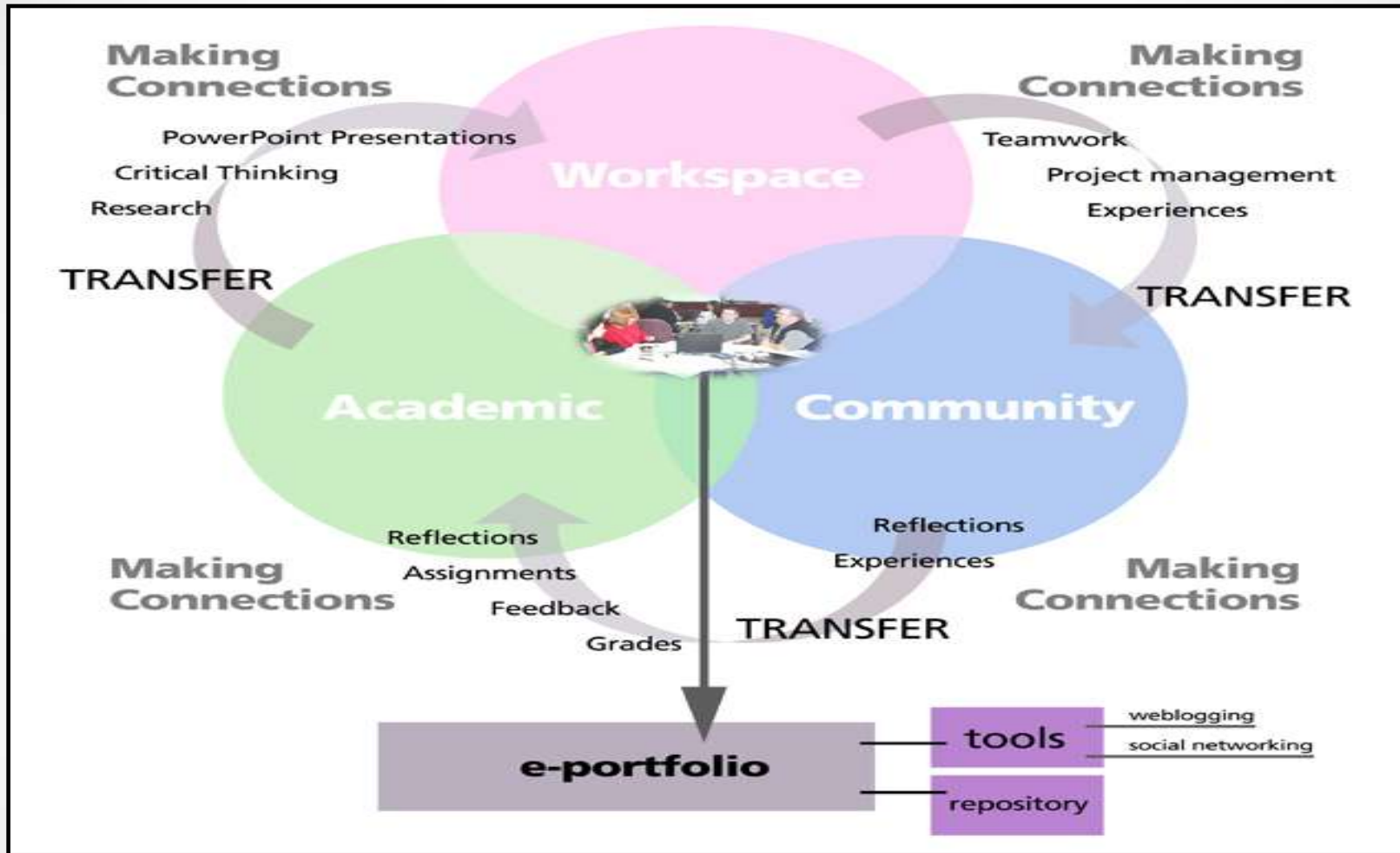
Penny Light, T., Chen, H., & Ittelson, J. (2012). *Documenting learning with ePortfolios: A guide for college instructors.* Jossey-Bass: San Francisco, CA. (Used with permission)
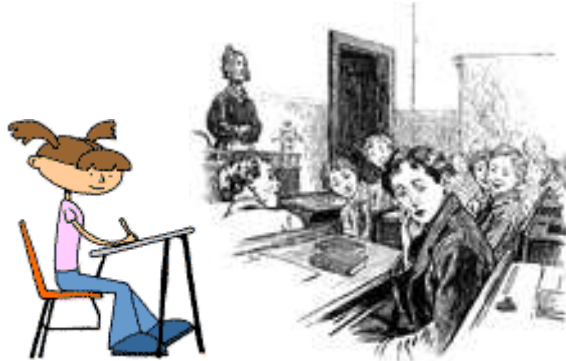
A 'best practices" definition for e-Portfolio(s)

ARTIFACTS

Community-Life Experiences

Productivity
Character
Teamwork
Cooperation

Original Design
Community
Service

College
Student
Groups

Personal &
Professional
Awards

Assessment

Interdependency

ePortfolios

Interdependency

ePortfolios

Profesional
Development

Project
Management

Publications

High School
To PhD

Direct
Impact
Factors

Samples
Of Work

Applied
Research

Charity
Service

Skills &
Abilities

Academic
K-Life
Experiences

Interdependency

Global
Workforce
Experiences

Web Presence

Validation

The Continuous Improvement Life-Cycle Model of ePortfolios is defined by a "triad" of functions for the global population. Within the experiences of Community-Life, Academic K-Life, and the Global Workforce, every individual is a member of these innterdependent areas of existence and every person is directly impacted by these experiences, or factors. The outcomes of these experiences form the artifacts upon which the ePortfolio is designed. Validation is the process by which individuals market their skills, abilities, and community services via a web presence for employers and other interested consumers. The assessment is the feedback that provides guidance to updates and best-practices for the artifact process, leading to The Continuous Improvement Life-Cycle Model of ePortfolios as artifacts are modified to improve the ePortfolio. (© Ken Scott, EdD & Syed Raza, PhD)

A revised 'best practices" definition for e-Portfolio(s)…

"Workademicunity"
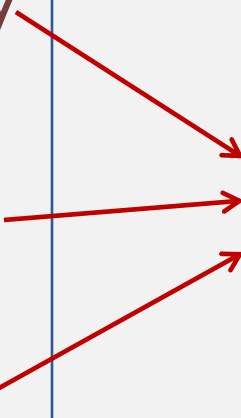
The Story of the ORACLE

...the moral of the story...

√ **methodology**

√ **validation**

√ **promotion**

Critical Workforce STEM Skills

What about methodology, validation, and promotion?

Methodology of Investment	• **Type of web design used** • **Developmental e-Portfolio** • **Employment e-Portfolio** • **Holistically-Merged e-Portfolio Approach** • **What approach to design/develop**
Relevant Validation	• **Student learning outcomes** • **Community Service** • **Workforce/Professional Development** • **WLO projects required by employers**
Effective Promotion	• **Widest search engine population** • **Quality vs. Quantity** • **Accessible 24x7 via reliable web services** • **Balanced materials of interest to employers**

"WorkademIcunIty"

e-Portfolio Categories:

I. **Developmental e-Portfolios:** …evidence of a student's learning and his/her reflection on work completed; a record and evidence of learning and growth supported by meaningful documentation of the learner's competencies, abilities, and efforts;

II. **Employment e-Portfolios:** …showcase relevant experiences and employment skills that employers use to evaluate the level of work preparation and readiness.

* Suskie, L. (2004). *Assessing student learning: A common sense guide.* Boston, MA: Anker.

Underlying Issues Impacting the Necessity of e-Portfolio Development & Design

The Skills Gap:	**…filling critical jobs with employees who have the right knowledge, skills, and abilities, including STEM skills**
ASTD (2009) surveyed 1,179 organizations:	**…79.2% of the participants noted that "there is a skills gap in [my] organization now"**
OECD (2010), in its PISA report:	**…measured knowledge, higher-order thinking, problem-solving, & other skills critical in today's information-rich age…several categories, American students ranked 'average'/worse among 34 developed nations**

A few more facts…offered in evidence

National Association of Manufacturers, October 2011 report: *A Manufacturing Renaissance: Four Goals for Economic Growth*, the goals identified were:	The United States will be the best place in the world to manufacture and attract foreign direct investment;
	The United States will expand access to global markets to enable manufacturers to reach the 95 percent of consumers who live outside our borders;
	Manufacturers in the United States will have the workforce that the 21st-century economy requires; and,
	Manufacturers in the United States will be the world's leading innovators.

A few more facts…offered in evidence

Specifically targeting a trained workforce, the National Association of Manufacturers report also strongly emphasized the following:

"The United States must develop a skilled workforce that includes the best talent from inside and outside the country. World-class manufacturing demands world-class talent. Our workforce must be proficient in science, technology, engineering and mathematics (STEM) and must possess the skills that manufacturers seek." (NAM, 2011, p. 9)

A part of the solution: The e-Portfolio "Advertise the Artifacts"

For Your Consideration…

➔	**Personal branding expert and *Forbes* author Dan Schawbel predicts that, within 10 years, résumés will be a thing of the past; http://www.forbes.com/sites/danschawbel/2011/02/21/5-reasons-why-your-online-presence-will-replace-your-resume-in-10-years/**
➔	**If e-portfolios are to become platforms for gaining employment upon graduation, many members in our colleges need to make a coordinated effort to help students produce a polished, professional, and compelling online presence; validation gathering needs to occur during a student's tenure at the institution; (Okoro, Washington, & Cardon, 2011).**
➔	**Do we know for certain that graduating students who bring electronic portfolios to their job interviews will be more competitive than students who furnish paper-based portfolios? (Kohn & Hibbitts, 2004)**

For Your Consideration…redux.

➔	**Virginia Tech is working to unify undergraduate experiences through the use of ePortfolio tools for the university's Quality Enhancement Plan (QEP), part of Virginia Tech's reaccreditation effort through SACS; (Batson, 2010)**
➔	***International Journal of ePortfolio* (IJeP)…to encourage the study of practices and pedagogies associated with ePortfolios in educational settings. Web site: http://www.theijep.com/;**
➔	**e-Portfolios are becoming the new standard that every person has to have…and have broken out of the educational sector and are being adopted for employees in companies;**
➔	**"e-Portfolios and Faculty Development: Charting the Impact on Teaching, Learning, and Campus Culture." - Pace University;**

The baseline of e-Portfolios

As the United States economy continues to struggle with high unemployment and the effects of the recession, it's [more] critical [than ever] that job applicants demonstrate the knowledge, skills, and abilities they bring to the workplace.

Holtzman, D., & Hadley, A. (2011). *E-portfolios: Providing evidence of Workforce Readiness*. Campus 2010 Technology, 17th Annual Education Technology Conference.

How the e-portfolio is used to _**validate**_ and promote workforce readiness in the STEM areas of concentration.

Validation: Faculty/Students

- **Written reports, proposals, case studies, etc.**
- **Workforce, academic, community awards**
- **Blueprints, schematics, diagrams, artwork, logos, or other work products**
- **Performance/workforce readiness evaluations**
- **Job descriptions**
- **Licenses, certificates, certifications**
- **Grants awarded or other types of fund raising**
- **Team projects/outcomes (strategic outcomes)**
- **Community service & soft-skills**
- **Professional development**

How the e-portfolio is used to validate and ***promote*** workforce readiness in the STEM areas of concentration.
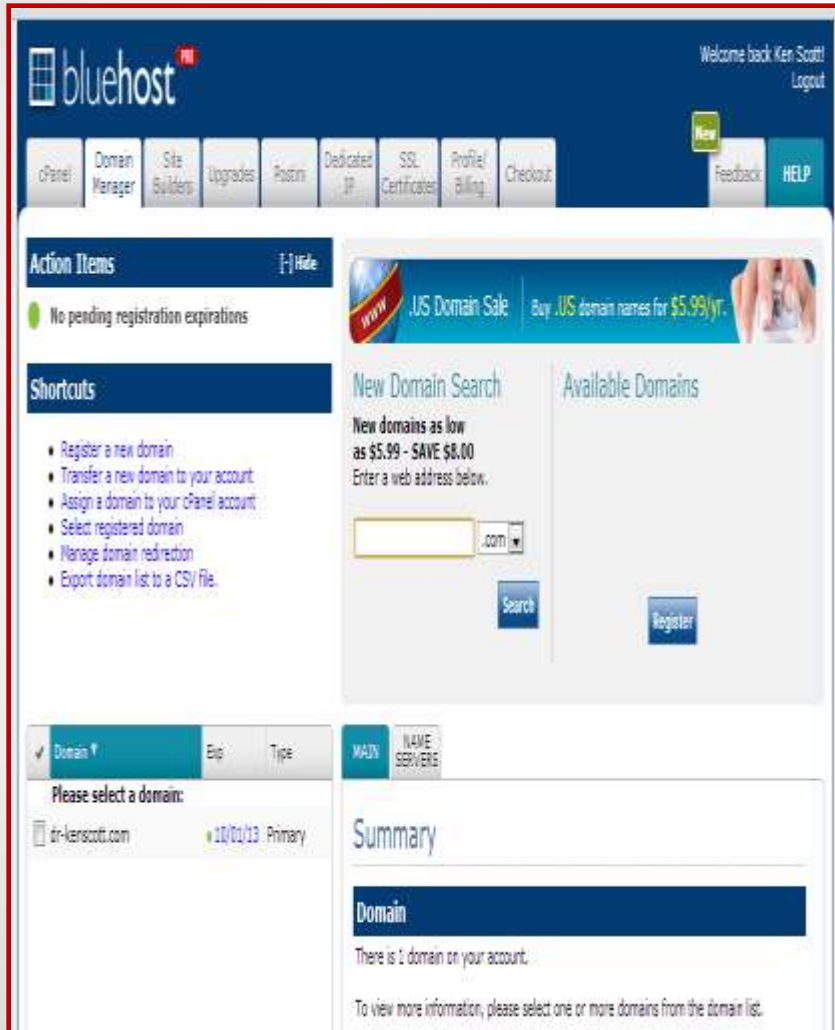
Promotion: Faculty/Students

- **Quality of the web design/page(s)**
- **Care in 'over-use' of personal info/encryption**
- **Demonstrate outcomes in workforce & STEM terms ('the rubric of WLOs')**
- **Give attention to copyright laws**
- **Use appropriate humor, but use it!**
- **Facebook, LinkedIn, Blogs, 'tweets', etc.**
- **Don't get too flashy on the web page**
- **Encourage feedback on your design**
- **Include info that appeals to employers**
- **Register a domain & populate search engines and keywords**

CURRENT E-PORTFOLIO PROCESS

Critical Workforce/Business/STEM Skills?

Workforce Community Academic

WLOs

E-Portfolio Design & Development

Develop Business/STEM/Course Objectives

**Actively Promote Your Personal & Professional Skill Set(s) to Consumers in the Workforce, Community, and Academics**

Domain Registration & Search Engines

Web Space, Speed, Support, Email, Subdomains

These activities may also require the use of tools such as Adobe *DreamWeaver* CS6, versions of html5 or other coding, flash image creation, web design and development skills, paid services, etc.

Bluehost Web Services Example; WS-FTP

FileZilla FTP Upload/ Download Example:
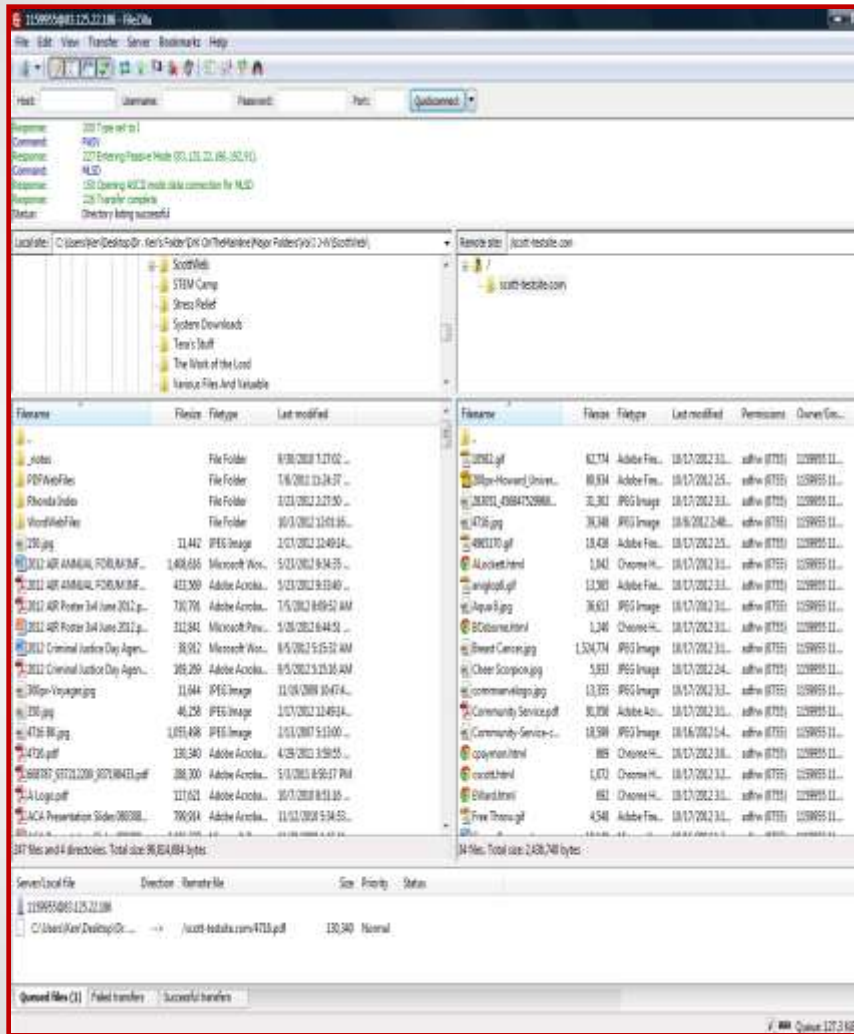
Advantages/Disadvantages:
1. The site may/may not use ads on your web site;
2. Limited web space for the serious minded;
3. Traffic speed may be reduced;
4. Certain development tools may not be provided;
5. Domain registration is minimal;
6. Search engine population may not be provided;
7. Relatively easy to develop a template-based site, e.g. WordPress.

The Innovation Portal	**Tens of thousands of high school and post-secondary students complete original engineering design and problem solving projects each year. The vast majority of these students simply close their project portfolios and move on when the course is finished as opportunities to seek recognition for their work beyond the classroom are few and varied. Students who participate in original engineering design and problem solving work are highly valued by post-secondary and industry representatives yet there is no standardized format or vehicle for interested parties to use to view and evaluate these student works.**

http://www.innovationportal.org/

Sample of Resources & Trending

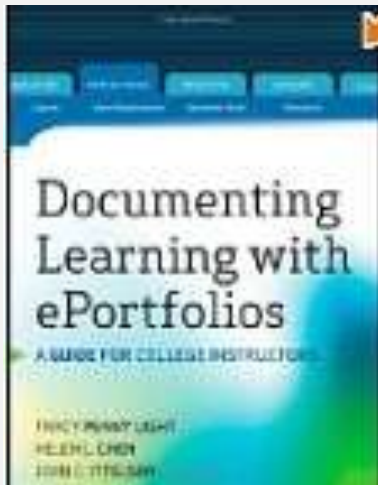| Mozilla Open Badges	But it's often difficult to get recognition for skills and achievements gained outside of school. Mozilla's Open Badges project is working to solve that problem, making it easy for any organization or learning community to issue, earn and display badges across the web. The result: recognizing 21st century skills, unlocking career and educational opportunities, and helping learners everywhere level up in their life and work.

http://openbadges.org

The Association for Authentic, Experiential, and Evidence-Based Learning (AAEEBL)	What is AAEEBL's mission? Our mission is to develop learners and to transform institutions with ePortfolios. We accomplish this by serving the global ePortfolio community as a non-profit, professional association that offers benefits to institutional members and Corporate Affiliates
ePortfolio.org	ePortfolio.org is a student-centered platform which, is augmented by a Project Builder and an Assessment module. Students can create and customize portfolios for academic, career, or personal uses; maintain their plan of study; and share their work, goals, and achievements with advisors, career counselors, and employers. Faculty, departments, and institutions can create portfolio assignments linked to scoring rubrics. Assessment committees can randomly select portfolios, score them with rubrics, and generate assessment reports.

Penny Light, T., Chen, H., & Ittelson, J. (2012). *Documenting learning with ePortfolios: A guide for college instructors.* **Jossey-Bass: San Francisco, CA.**

Cambridge, Darren. (2010). *E-Portfolios for lifelong learning and assessment.* **Jossey-Bass: San Francisco, CA.**

Incentivize Participation: Recognition in publications, college web site, leadership opportunities, etc.

Creating student & faculty e-portfolios should not be an alien event…

"I'll trade you my ray gun for a good e-portfolio!"

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