

*ePortfolios:  
Methodology to Validate and Promote Critical Workforce STEM Skills*

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***“My prediction is that in the next ten years, resumes will be less common, and your online presence will become what your resume is today, at all types and sizes of companies.”  
(Schawbel, 2011)***

***The ePortfolio: A Workforce Definition***

On October 27, 2011, a group of faculty and students from Trenholm State Technical College attended the *Oracle Academy Student Forum Day* at Alabama State University in Montgomery, Alabama. The forum was presented by the regional director of the Oracle Academy (<https://academy.oracle.com/>). As part of the Student Forum Day, the director explained what was generally expected of students in the workplace and specifically what Oracle required for employment. In addition to these skills, the presenter informed the group about a recent event that strongly suggested ePortfolios were becoming a method of choice to validate a prospective employee’s skill set—in terms of technical-skills, soft-skills, community service, professional development, with validation for each of these respective areas. The event she alluded to was in reference to a professional position Oracle was attempting to fill from among several highly qualified job applicants.

This Oracle administrator was very interested in one particular applicant’s specific skills, as listed on his standard ‘paper’ resume. She informed the applicant that the written resume was not the vehicle of choice to validate actual workforce/Oracle requirements; rather, she advised the applicant that he must develop and present an ePortfolio that validated the actual design of a functional database. Included in this validation were ‘screen-shots’ for the Oracle database in run-time, output, design structure, coding, normalization, and other specifics, that offered ‘proof’ of the relational system in actual operation—items that only the Oracle relational database could generate. The qualified and prospective employee, as advised, created the ePortfolio with the

items mentioned to fully demonstrate and validate his repertoire of specific design skills, including other projects, community service, and academic pursuits. As an outcome of the ePortfolio—which not only validated the skills and abilities of the applicant, but also effectively marketed those skills and abilities—the applicant was offered the position with Oracle.

The ePortfolio has begun to make significant inroads into the demonstration of skills as a method by which more and more employers are using to review a candidate's qualifications. However, a dichotomy has also arisen between a candidate's skills and the alignment of those skills to business objectives or outcomes. This contradiction between skills and job acquisition has been dubbed *The Skills Gap*.

### ***ePortfolios and The Skills Gap***

The skills gap has been defined by the ASTD (American Society of Training and Development) (2009, p. 4) as “a significant gap between an organization's current capabilities and the skills it needs to achieve its goals. It is the point at which an organization can no longer grow or remain competitive because it cannot fill critical jobs with employees who have the right knowledge, skills and abilities.” To ascertain the potential impact of the skills gap and the perception that the skills gap exists, the American Society of Training and Development (ASTD, 2009, p. 8) conducted research at 1,179 organizations. Within these organizations, 79 percent reported that they acknowledged the existence of a skills gap and that it was indeed a negative determinant in their ability to “fill critical jobs with employees who have the right knowledge, skills and abilities.”

Conversely, Peter Cappelli's book, *Why Good People Can't Get Jobs: The Skills Gap and What Companies Can Do About It* (2012), suggested that the skills gap is a much more complex issue than simply stating that organizations cannot align their competitive workforce

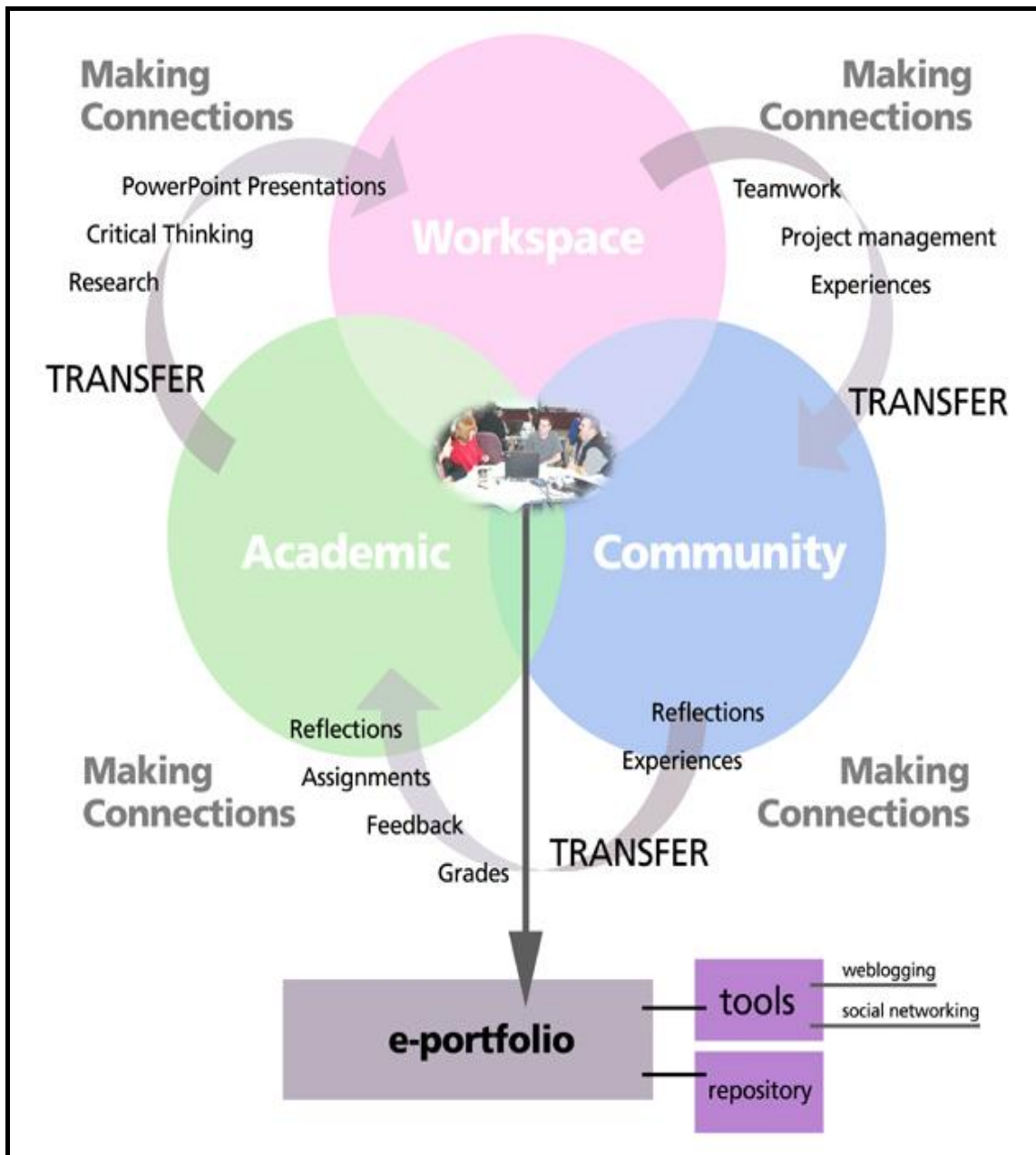
needs to their future competitiveness within the global marketplace. He cites a major disconnect between hiring practices and the skills and experiences of the pool of applicants; moreover, he also cites the critical need for the workforce and institutions of higher education to better align their hiring needs and education/training, respectively. In other words, to validate/promote the skills, abilities, and experiences of employees, a methodology must become the de facto process to capture and validate these skills, abilities, and experiences: ergo—enter the ePortfolio.

As can be seen in Figure 1, the ePortfolio is the culmination and interdependency of a “triad.” Every individual essentially exists in these three areas—the Global Workforce, Academic K-Life, and Community-Life—and we gain experiences that are important and/or relevant to employers, communities/family, and our personal/professional/academic development—from this triad of systems. In terms of the community college system in toto, it is imperative that we not only build the workforce-to-community college alignment processes to help our students succeed long before they arrive on-site to demonstrate their skills, it is equally important that we give them the tools to validate and promote their STEM/technical skills to employers in the form of an ePortfolio. The ePortfolio is the methodology/tool to build the bridge between validating and promoting student skills, abilities, community service—and the perceived/real skills gap.

As suggested by Penny Light, Chen, and Ittelson (2012, p.9), “ePortfolios offer a framework within which students can personalize their learning experiences, and create different representations of their learning experiences tailored to specific audiences while also developing multimedia capabilities.” To support this idea, Dan Schawbel (2011), suggested that within 10 years, your online presence will replace your standard resume. He lists 5 reasons for the future prospect that ePortfolios will be the future resume: (1) social networking use is skyrocketing

while email is plummeting; (2) you can't find jobs traditionally anymore; (3) people are managing their careers as entrepreneurs; (4) the traditional resume is now virtual and easy to build; and, (5) job seeker passion has become the deciding factor in employment.

Figure 1. *The Learning Landscape of ePortfolios.*



Source: Penny Light, T., Chen, H., & Ittelson, J. (2012). *Documenting learning with ePortfolios: A guide for college instructors*. Jossey-Bass: San Francisco, CA., p.16. (The Learning Landscape: Source: Adapted from Tosh et. al., 2006, 27; Used with permission)

While acknowledging that 79 percent of organizations reported a skills gap, and that it is conceivable that our online presence will become our present resume, it behooves community colleges to initiate a methodology to promote and validate student skills, abilities, and community service in a web-based format, e.g., the ePortfolio. Moreover, this process must start in a student's first year/semester of attendance and continue as a life-long learning process.

***ePortfolios: Design, Development, and Community College Practices***

At Trenholm State Technical College, a specific course is being used to initiate the design, development, and longevity of the student/employee ePortfolio. The DPT291-Case Study in Computer Science, has become a capstone course in which the design and development of the ePortfolio begins in a student's first year of attendance, conceivably their first semester. The question that might be proffered is: How can your capstone course be offered in a student's first semester? The answer is not a complex one: it is offered in the first semester because it is 'pay-it-forward' in design. Stated differently, it begins at the same time of student tenure in the CIS program and ends at graduation (actually, students are encouraged to continue their ePortfolio development throughout their lives) with a comprehensive exit exam and presentation in 'web-time' of their professionally developed web-presence, e.g., their ePortfolio.

As part of the overall process to enable students to build a professional web presence, or their respective ePortfolio, DPT291 includes several aspects of design and development: (1) the overall impact a professional ePortfolio may have on their future workforce endeavors, promotions, community service, validation of work completed, awards received, and so forth, are investigated from a literature review of relevant materials, research, and online applications; (2) the technical skills needed to development a web site, upload/download files, catalog and present artifacts to promote skills, abilities, and community service, are practiced in depth throughout the

course; (3) structure, personal vs. professional artifacts, copyright, and so forth, are discussed to protect the student and the college from inadvertent misuse of intellectual-rights materials; (4) the use of applications such as DreamWeaver (CS5/6/x), HTML5, and other “apps” are used to give students a specific web design/development skill that will be the baseline from which they will be able to maintain their ePortfolio for the rest of their lives; (5) marketing knowledge as to how to “sell yourself” in terms of what is posted to the web site/ePortfolio so that the skills, abilities, and community service are ‘selling points’ to employers and other community stakeholders; (6) an online concise e-resume is developed to “incite” interest; and, (7) soft-skills are included in the ePortfolio to demonstrate teamwork, collaboration, written communication, and critical thinking as a minimum set of validated soft-skills.

In terms of community college practice, while many two-year colleges may have ePortfolio classes or programs across many departments, students need some form of validation process to demonstrate the contribution-skills that they bring to the workforce. Consequently, community colleges need to consider a holistic approach for all students to develop their ePortfolio as a methodology to validate and promote the skills, abilities, community service, and the ‘workforce-worthiness’ of our future employees.

### ***Implications and Recommendations***

To better understand the implications and recommendations specific to ePortfolio practice in the community college, the following small sampling of issues of ePortfolio development are provided:

1. As previously noted, personal branding expert and *Forbes* author Dan Schawbel predicts that, within 10 years, résumés will be a thing of the past;

[\(http://www.forbes.com/sites/danschawbel/2011/02/21/5-reasons-why-your-online-presence-will-replace-your-resume-in-10-years/\)](http://www.forbes.com/sites/danschawbel/2011/02/21/5-reasons-why-your-online-presence-will-replace-your-resume-in-10-years/)

2. If ePortfolios 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; (Okoro, Washington, & Cardon, 2011);
3. 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? (<http://net.educause.edu/ir/library/pdf/eqm0441.pdf>)
4. 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; ([http://www.lt.vt.edu/LT\\_Update/2010\\_LT\\_Update.pdf](http://www.lt.vt.edu/LT_Update/2010_LT_Update.pdf))
5. ePortfolios 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; (<http://campustechnology.com/Articles/2010/04/07/ePortfolios-Finally.aspx?p=1>)
6. "ePortfolios and Faculty Development: Charting the Impact on Teaching, Learning, and Campus Culture." - Pace University; (<http://www.aacebl.org/2011-world-summit-resources>)
7. Mahara – Open Source ePortfolios: <https://mahara.org/>. (Open site resource for ePortfolios);
8. Clemson University has created a web section that includes competitions for best ePortfolios. (<http://www.clemson.edu/academics/programs/eportfolio/index.html>)

Assuming that the skills gap is a major problem perceived by businesses, the ePortfolio is a prime tool to promote the widest dissemination of a graduate's potential contribution to an organization. If employers are conducting searches for employees by various methods, including web searches, it is critical that students present themselves in these searches by registering domains and using applications from hosting sites to ensure search engines locate themselves by searches across the Internet, including 'keyword' logic.



### *A Final Word*

Community colleges have long had the technologies and knowledge to initiate ePortfolio development for all students in their respective colleges. To promote and validate student learning outcomes within the educational institution, as well as many types of skills or services developed and participated in, respectively, students need a methodology to capture, catalog, and promote their artifacts across the spectrum of the “triad” as previously noted and discussed in Figure 1. In helping a student to develop and publish a professional ePortfolio, the community college will give each student a competitive advantage because those with validation-type ePortfolios can better demonstrate their skills, abilities, and community service—in the same manner as was being requested by the Oracle Academy Regional Director.

While it may seem that asking students to design, develop, and maintain an ePortfolio is a major issue requiring technical acumen and time-on-task, imagine if the trend in 10 years does indeed move towards the online presence compared to the printed resume. If we in the community college begin early, our students will have a phenomenal ePortfolio to readily demonstrate skills they have developed throughout their time with us and peripheral experiences, including projects, teamwork, community service, writing samples, awards, work experience, original design, and so many other presentable items that might be of value to business and industry.

DPT291-Case Study in Computer Science is a ‘pay-it-forward’ student teaching-learning outcome so that in 10 years, the students who have taken this course will have immediate and extended experience at designing their ePortfolio to hone it to a truly applicable set of validated skills, as well as maximizing the marketability of their web presence. At the very least, if the

‘skills gap’ as noted by the workforce is such a critical workforce issue, the ePortfolio is one-of-many pro-arguments for being able to locate skilled workers.

## References

- ASTD. (2009). *Bridging the skills gap: New factors compound the growing skills shortage*. American Society of Training and Development: Alexandria, VA: Author.
- Capelli, P. (2012). *Why good people can't get jobs: The skills gap and what companies can do about it*. Philadelphia, PA: Wharton Digital Press.
- Okoro, E., Washington, M., & Cardon, P. (2011). EPortfolios in business communication courses as tools for employment. *Business Communication Quarterly*, 74(3), 347-351.
- Penny Light, T., Chen, H., & Ittelson, J. (2012). *Documenting learning with ePortfolios: A guide for college instructors*. San Francisco, CA: Jossey-Bass. (p. 16)
- Schwabel, D. (2011, 21 February). *5 reasons why your online presence will replace your resume in 10 years*. Retrieved from <http://www.forbes.com/sites/danschawbel/2011/02/21/5-reasons-why-your-online-presence-will-replace-your-resume-in-10-years/>.