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Using Electronic Portfolios as a Pedagogical Practice to Enhance Student Learning

by: Yves Labissiere and Candyce Reynolds

Introduction

Real learning transcends barriers of time and place. It can also provide a bag of tools one can take on the journey through life. Some students, unfortunately, leave college with empty toolkits, or ones they do not know how to open. Engaging students in the process of salient, transformative learning is a challenge, but one worth taking. Tagg (2004) speaks eloquently in a recent *About Campus* article about the need for faculty to use practices in the classroom that improve the quality of learning, and calls for faculty to help students claim their learning and engage in what Kegan (1995) describes as a “developmental transformation, “the process by which the whole (‘how I am’) becomes gradually a part (‘how I was’) of a new whole (‘how I am now’)” (p. 43). Kegan (1995) argues that this process is necessary as one becomes an adult and needs to develop new ways of thinking about oneself and one’s relationship to others and the world. Ideally, faculty in higher education are striving to help students learn beyond their individual courses and create the toolkit needed for success throughout life.

Increasingly, the use of student portfolios has been seen as one way to help students engage in this type of learning (Cambridge and Williams, 1997). With technological advances, interest in and use of electronic student portfolios (eportfolios) in higher education has also grown in the last several years (Cambridge, 2001). Portfolios, and especially eportfolios, are seen as a more authentic representation of student learning and are increasingly being used for course, program, and institutional assessment of student learning (e.g., Cambridge, 2001).

Portfolio: Development vs. Assessment

However, assessment can overshadow the learning potential of portfolios. While student portfolios have often been used for the purpose of assessing individual students and for program and institutional assessment (e.g. Hamp-Lyons and Condon, 2000; Kahn, 2001), faculty can choose to shift the focus of portfolios from assessment to student learning and conceptualize the portfolio as a tool to enhance learning and reflection (Cambridge and Williams, 1997; Labissiere and Reynolds, 2004). The activities involved in creating an electronic portfolio have the potential to provide rich opportunities for developing students as lifelong reflective learners. The question, then, is what can faculty do in the classroom to make student learning and development primary in the development of the portfolio?

This paper will describe seven pedagogical strategies that faculty in one general education program, University Studies, at Portland State University, have developed in its yearlong Freshman Inquiry course to leverage the eportfolio for greater student learning. We believe that these practices use the eportfolio tool to engage students intellectually and in so doing, move them to the beginning stages of their developmental transformation into adulthood.

Starting the Transformation

Eportfolio practices have the potential of providing students with a sense of their capacity. This sense of one’s capacity to understand what one knows and can possibly know is important in the development of a learner

(Kegan, 1995; Baxter-Magolda, 1992). A selection from the French playwright Jean Baptiste Moliere illustrates the power of being made aware of the tools one possesses. In his play, *The Would Be Gentleman*, we meet Monsieur Jourdain, a *petit bourgeois*, or lower middle class person, who has come into some money and now wishes to be an upper-class gentleman. Jourdain hires various instructors, including a philosopher, to teach him the ways of the upper crust. Jourdain confides in the philosopher that he, Jourdain, has fallen in love with a woman, and wants to send her a note expressing his affections. The philosopher asks Jourdain if he would prefer prose or verse in his note; Jourdain declines both. The philosopher says Jourdain must choose one or the other:

MONSIEUR JOURDAIN: There is nothing but prose or verse?

PHILOSOPHY MASTER: No, sir, everything that is not prose is verse, and everything that is not verse is prose.

MONSIEUR JOURDAIN: And when one speaks, what is that then?

PHILOSOPHY MASTER: Prose.

MONSIEUR JOURDAIN: What! When I say, "Nicole, bring me my slippers, and give me my nightcap," that's prose?

PHILOSOPHY MASTER: Yes, sir.

MONSIEUR JOURDAIN: By my faith! For more than forty years I have been speaking prose without knowing anything about it, and I am much obliged to you for having taught me that.

(Moliere, 2000, 62)

Thus, the would-be gentleman comes to recognize his own abilities, and realizes through epiphany and a focus on learning that he has the tools he seeks. Jourdain is now able to externalize and name his abilities and, because of this shift in his identity, feels elevated to another level. Like Moliere's character, students who engage in the creation of eportfolios are often surprised by and proud of what they know and what they can do. Taking stock of one's academic skills can encourage students to see themselves in the role of the scholar, capable of creating meaningful scholarship.

Context: The Freshman Inquiry Electronic Portfolio

University Studies is Portland State University's four-year, interdisciplinary general education program. The program is organized around four goals:

1. inquiry and critical thinking
2. communication
3. awareness of the diversity of human experience
4. ethical issues and social responsibility.

Courses taken at all levels of the program are designed to enhance student skill development and learning in these areas. (For a more complete description of the program, see White (1994) or www.ous.pdx.edu) The foundation of the program is a year-long Freshman Inquiry course. This course is organized around interdisciplinary themes. Examples of these themes include: The Cyborg Millenium, Meaning and Madness at the Margins, Forbidden Knowledge, and The Constructed Self. The courses were designed to replace general education social science, science, and writing courses, and bear 5 credits each quarter, totaling 15 credits for the three quarters that make up the academic year.

Students use electronic portfolios in the interdisciplinary Freshman Inquiry courses. The portfolio serves as a concrete manifestation of the goals of the course and student progress towards those goals. Paper portfolios were used at the beginning of the program to both enhance student learning and serve as an instrument of program evaluation. Five years ago we decided to move from paper to electronic based portfolios in order to leverage some of the advantages of the technology.

Eportfolio Advantages

The electronic portfolio for the Freshman Inquiry course contains work that students have produced throughout the year. It also contains their reflections on their progress toward the program's four goals, and has linkages to works that demonstrate achievement in those goals. The portfolios are web-based. Students build web pages, which are then stored in controlled-access websites.

The advantages of eportfolios over paper portfolios are beginning to be documented in the literature (e.g., Labissiere and Reynolds, 2004; Barrett, 2000 a & b, Carney, 2004). An eportfolio requires the development of several skill sets, each of which enhances the student's ability to engage more deeply with what has already

been learned. For example, hyperlinking, which is the primary activity of building a website, forces students to make new connections with what has previously been learned. Such hyperlinking practices, we argue, encourage metacognitive skills development.

Moreover, since making an infinite number of links is not useful, students are required to organize, chunk, and prioritize material in order to give coherence to the portfolio. Deeper engagement with content on multiple levels is embedded in the activity of linking. As another example, preparing the layout of the eportfolio forces a student to spatially organize and represent relationships between insights gained during the course. This effort invites a rearticulation of the content along meaningful categories.

Based on what we know about learning, and techniques we have developed in this context during the last five years, we will describe seven strategies that we have found to be effective, and that any instructor can use to transform the eportfolio into a powerful tool of learning.

Strategies: From Eportfolio to Powerful Learning Tool

Strategy #1: Gradually weave the activities for creating the eportfolio throughout the entire educational experience.

Assembling an eportfolio requires a student to develop technical skill sets which, when applied, engage the student more deeply in what was already learned. Building these skills should be logically and sequentially scaffolded into the curriculum. For example, instructors might introduce students to the notion of hypertext and its significance for learning. This could be followed by having students create hypertext documents and practice making hyperlinks. The latter builds the foundation for doing an elementary webpage.

Other instructors may wish to begin with course mind maps as a way of having students reflect upon and represent what they have learned. The maps can then be used to inform eportfolio organization. The potential scaffolding strategies are nearly endless. The goal of this strategy is to introduce and foster skills in a progressive manner so students will both derive maximum learning value from each skill and master the requisite skills needed to construct their eportfolios.

Strategy #2: Practice the dual coding principle of learning.

Research on the dual coding principle of learning (Levie and Lentz, 1982) suggests that learning is generally enhanced when learners are required to represent their knowledge in more than one way, i.e., visuospatially and verbally. Recent research on multimedia and learning also point to the benefit of multimedia representation of information for enhancing learning (Najjar, 1995). As a multimedia experience, the eportfolio provides numerous opportunities to practice this principle. Journals and blogs combined with individual and collective mind mapping or concept maps — all of which support eportfolio construction — provide numerous opportunities for students to extract deeper learning and insights from the classroom. This strategy also supports the development of student metacognitive skills.

Strategy #3: Make the creation of the eportfolio a social/collaborative activity

Learning is a dynamic, social activity that is supported by relationships and in community. It is well documented in educational and psychological literature that collaboration enhances learning (e.g., Rogoff, Turkkanis, and Bartlett, L. 2001). Collaborative learning practices encourage students to work together to enhance their own learning and to maximize the learning of the entire class (Aronson and Patnoe, 1997). The eportfolio process represents an occasion to get students working together.

Putting together a website is a complex task requiring a range of skills. In fact, most websites are the result of intense collaboration between graphic designers, writers, and human interface design technicians. Each student brings different strengths when students collaborate to create elements of their eportfolio. Students with a good eye for design, for example, become a resource for those with strong writing skills, while the writers can assist the designers. Pedagogically, this practice interrupts the common perception of scholarship as a solitary activity, and communicates the value of collaboration in learning. Students develop norms of cooperation and collaboration in assuming their roles as scholars.

Examples of this strategy would include setting up portfolio work sessions where students can give each other support in designing their portfolio. Students can also work in small groups to develop collective mind maps of the course in preparation for the eportfolio. These mind maps, which themselves can become a part of the portfolios, can then be presented to the class during a formal mind-map review and critique session.

Strategy #4: Build the practice of public critique or review of eportfolios

While it is important to give students control over what they choose to share in their eportfolios, student learning is further enhanced by the public review of their product, much like a peer review process. During formal eportfolio review sessions, also conducted in small groups, students can celebrate each other's work, pick up tips, and provide feedback to others. For example, a public review might comprise of an end of year competition where student scholarship is honored and recognized.

The practice of public review provides several pedagogical benefits to students:

- It reinforces the norm that scholarship is a public enterprise, and not the efforts of an isolated, individual scholar.
- It builds motivation.
- It establishes consensus about quality, and sets norms regarding effective standards and practices, norms by which a student can measure his or her work.
- It develops a consensus around how the course holds together. In other words, the student makes the class more relevant by infusing it with his or her own meaning.
- The criteria for excellence becomes visible, meaningful and, we hope, more achievable.
- It allows students to become comfortable with presenting and defending their work, and recognize the need to think about their potential audience when assembling their portfolio, reinforcing norms that scholarship is a public enterprise.

Strategy #5: Provide students opportunities to develop reflective practices

Educational learning, thought, and action are most effective when paired with reflection (Dewey, 1933). Reflective practice defines a set of tools that allow students to critically analyze their actions and practices, with a goal of improvement. Activities that demand reflection, organization, and connection enhance meta-cognition (e.g., Alexander, et. al, 1995). Reflective practice is a complex set of cognitive skills that need to be directed and frequent to be most effective.

Educators cannot expect students to know how to engage in reflective practice without adequate coaching by the instructor. In other words, reflection skills need to be scaffolded throughout the process. Examples of activities which can support metacognitive reflections include:

- course-related dialogue journals
- periodic classroom assessment techniques (CATS) where the class pauses to reflect on their learning experience
- blogs
- letters to the professor

These activities require students to reflect upon and engage what they are learning in a variety of ways. For maximum pedagogical value, reflection activities should be prompted, and frequent. The following is an example of a prompted reflection for the students to reflect on the artifacts they include in their portfolio.

For each work sample that you include as evidence of a particular course goal, write a short reflection describing:

1. Why is this particular work product evidence of the goal? Specifically, what in the work product is the evidence?
2. What insights did you gain from doing it?
3. Of what part are you most proud, or what part did you do particularly well?
4. With what part are you least satisfied?
5. If you were to do it again, what part(s) would you do differently? How?

Strategy #6: Shift the portfolio emphasis to student improvement and growth, and away from a demonstration of 'best' work

Learning is enhanced when learners see where they began and how they are progressing. Developmental theory supports this type of self-location as a critical element of learning. Correspondingly, this strategy suggests

having students make the case for their progress over the term (or year). This practice invites student to include in their portfolio work considered experimental, tentative, and substandard. An eportfolio makes the inclusion of such a work easy and manageable. A student can simply include a link to such work in their reflection on their progress. This gives value and meaning to these otherwise discarded tracks of student learning and development.

Students come to appreciate the value of mistakes or failures in shaping their scholar identities. Moreover, this technique shifts the focus away from “best work,” and allows student to glimpse the relevance of learning from mistakes and failures. Such an invitation to vulnerability reinforces the importance of honest self-assessment and its significance to academic development. Examples of this strategy include:

- Reflections comparing best work to earlier work.
- Reflecting on what has been learned and how that was achieved.
- Faculty modeling learning from his or her own mistakes.

Strategy #7: Use portfolios to invite learning between the ‘cracks.’

Teachers cannot anticipate how learning will be applied. Often the most significant insights student derive from our classes go well beyond the scope and intention of the syllabus. To the extent these insight are critical to a student’s sense of self and relationship to the course, they should become a part of the student’s learning record for the course. One challenge is how to consider this record and provide credit for these epiphanies and transformations that have sprouted in the interstices of a student’s life within the context of the course. The eportfolio can be a space to capture such ineffable aspects of learning, the unanticipated connections that bridge academic knowledge with life experiences, allowing the students to make the work personally relevant and meaningful.

Example of this includes having student explicitly make connections between their lives, their other classes, and course content. Teachers might also invite students to include in the eportfolio work completed in other classes or in the community. As the focus is on the reflection that connects the work to the themes of the course and not the work itself, outside work is just as appropriate.

Conclusion

The developmental transformation of a student can clearly be facilitated if we choose to focus on pedagogical practices in the creation of student eportfolios. In doing so, we help our students realize their capacities and achievements — their ability, as Moliere would say, to “use prose.” Using eportfolios to increase learning not only allows students to demonstrate their academic prowess, it also boosts self-efficacy and instills the understanding that they are scholars operating within the academic environment.

With eportfolios, students will be able to see and bear witness to what they have learned, and, as a result, might more easily see the value of a college education. When asked what they learned in college they won’t just say, “Well, I wrote a bunch of papers and took a bunch of tests.” They will instead be able to identify where they learned critical thinking, time management, writing skills, analytical thinking, and a whole host of other important skills that will help them throughout their personal and work lives. They will then have a toolkit that they’ll know how to open and use along their life path.

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