

7-2016

Technology in the College Classroom: Crisis and Opportunity

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Recommended Citation

Conefrey, T. (2016). Technology in the College Classroom: Crisis and Opportunity. *Educational Technology*, 56(4), 37-40.

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Conclusion

The questions in this essay are rocks that I believe instructional design theorists and practitioners are at this point in time willing to turn over, to see what lies beneath. New departures in design studies in recent years represent a healthy trend. We are becoming more aware of and curious about the foundational principles of our practice and our emerging design professionalism.

We need to talk more within our organizations about new directions in design, asking questions that lead to possible futures of how we teach design to students—and to the vast army of instructional designers whose needs we do not now adequately address.

There are important new ideas to be found in the work of Gordon Rowland, Elizabeth Boling, Brad Hokanson, M. J. Bishop, Patrick Parrish, and several others whom I hope this readership will seek out. Some day designers will take these new ideas as much for granted as we have taken the ideas of the past for granted, and find a new vantage point for looking to the next horizon. □

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Technology in the College Classroom: Crisis and Opportunity

Theresa Conefrey

The 21st century classroom is large, diverse, underfunded, and populated by students weaned on digital devices espousing a consumer mentality looking for a good return on investment (ROI) on their education. These students, the so-called “millennials,” and the coming Generation Z, who have grown up in the digital age, are more pragmatic than previous generations of students and are less amenable to traditional teaching approaches. While some lament this “crisis” in education, it can be seen as an opportunity. As “digital natives,” students are immersed in the newer technologies both as consumers and producers and anticipate remaining plugged in during college and beyond. Harnessing this interest and expertise and effectively integrating these newer technologies into the classroom can help solve this “crisis.” Technology enhanced teaching has the potential to transform learning, deepen student engagement, and connect with the more varied and numerous student cohorts. This article explores how effective use of ePortfolios can be aligned with learning goals to create meaningful, engaging, and innovative assignments that transform the classroom from a site of prescriptive learning, where information is unilaterally transmitted, to one of distributed expertise, where knowledge is jointly created, and digitally literate students are equipped to become the life-long, tech-savvy, self-directed learners that this new century demands. But there are no guarantees. This article concludes by acknowledging tensions in the tech-laden classroom, fears that technology is driving pedagogy, poor understanding of key affordances, and misalignment between instructional goals, learning outcomes, and students’ understandings.

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Introduction

Today's student population is larger and more diverse than ever before, as students from a wide variety of different racial and ethnic backgrounds, some with various learning challenges, and non-traditional students begin degree programs. Apart from the changes in size and diversity of the student body, there are also changes in students' skills and expectations (Williams, Beard, & Tanner, 2011). Today's student tends to be digitally-savvy, equally comfortable with reading and writing online as on paper, more likely to communicate by text than by telephone, and more familiar with finding information in cyberspace than in libraries. These students, the so-called "millennials," and the coming Generation Z, have grown up in the digital age, and take for granted their skills with computers, tablets, smartphones, and the plethora of software and apps that accompany them (McGlynn, 2005).

As "digital natives" (Prensky, 2010) they are immersed in these technologies as both consumers and producers, and anticipate remaining plugged in throughout college and in their work and personal lives after graduation. These "millennials" are less likely than previous generations of students to sit attentively through talk-and-chalk lectures on what they judge irrelevant and esoteric topics, as they surf social media sites on their digital devices. Espousing a consumer mentality, they (and their parents) are concerned with a good return on investment (ROI) on their education: a well-paying job or entry into a prestigious graduate program. Faced with rising tuition fees, they are more likely to consider the impact of their choice of college and program on their potential careers, than they are to choose a major because they are passionate about the subject.

Despite the needs and expectations of this larger and more diverse student population, institutions and instructors have been slow to respond. While administrations may have implemented changes in their core courses and program goals, syllabi and classroom practices often remain unchanged. Although blackboards and fixed furniture may have been replaced with projectors and more flexible seating-arrangements, typical classrooms are still characterized by a teacher-centered transmission model. During class, the instructor lectures (often with the aid of PowerPoint slides) while students listen, make notes, write essays, and take tests to assess their learning. The teacher is assumed to be the source of all knowledge, and the student the vessel into which it is to be poured. Often that content, especially in introductory courses, has remained largely unchanged for decades and all that is updated on the syllabus is the textbook edition. Neither the syllabus nor the course reflect the changes in the student body or the possibility that students in the new millennium have different needs and expectations, which might require changes in course content and classroom practices.

Many perceive the increase in the size and diversity of

the student body coupled with the reduction in funding as a crisis (Lefton, Danko, Kerwin, & Bustamante, 2013; Phelan, 2014). This crisis is compounded by the mismatch between students' needs and expectations on the one hand, and the typical curricula and teaching style at most institutes of higher education on the other. While lamentable, this crisis can also be viewed as an opportunity, that is, a chance to re-examine our core assumptions about teaching and learning to catch up with the needs and expectations of millennial students to prepare them for life and work in the twenty-first century.

The opportunity lies in both taking advantage of students' digital expertise to make more effective use of newer technologies in the classroom, and in reviewing program goals and course content through the lens of a learner-centered rather than a teacher-centered focus. However, if teachers can make pedagogically-sound decisions about which educational technologies to implement to best support and enhance student learning, while harnessing student skills and interest in digital technologies, and then successfully integrate this with their learning objectives, the results can be transformative (Herrington & Parker, 2013; Holland & Holland, 2014; Ng'ambi, 2013; Veletsianos, 2011). If they adapt their teaching practices to channel student engagement in technology, both inside and outside the classroom, instructors can potentially transform student learning by capitalizing on students' strengths to lead to more student motivation and achievement as well as to promote life-long learning long after graduation.

Aligning Technology, Pedagogy, and Learning

One example of a newer educational technology that has the potential to transform student learning is the ePortfolio. Variations of this technology, viewed as the digital successor of paper-based portfolios, have been available for just over twenty years (B. L. Cambridge, 1996; Yancey & National Council of Teachers of English, 1992). However, the last few years have seen a rise of adoption, accompanied by more platforms, and improved ease of usage (Jenson & Treuer, 2014). ePortfolios can be incorporated into a course in either an instruction-centered model, which although requiring some technology training on the part of the instructor, does not require much change in classroom practices, or in a learner-focused model, which requires more significant change. In the case of the former, which is essentially an updated transmission model, students are asked to create ePortfolios to showcase best examples of assigned course work for grading, and for other kinds of assessment designed to demonstrate how they are meeting program learning goals. In the case of the latter, students have much more latitude in building their site and making their learning visible.

Applying the instruction-centered usage model in

college composition courses results in students uploading narrowly prescribed course assignments, usually revised essays, and a paper reflecting on their learning (including screen-captures of feedback on earlier work), as well as some minimal personal information, possibly with photos. This way of using ePortfolios is often viewed as a successful implementation of educational technology by faculty for several reasons: students are enhancing their digital literacy and critical-thinking skills by integrating multi-media to create media-rich artefacts, and by considering rhetorical differences between print and online media; they are showcasing exemplary work (publically if desired), and they are writing reflection essays, where they analyze and document their learning process and skill acquisition throughout the course, a practice that has been shown to improve learning outcomes (Watson & Doolittle, 2011). In addition, institutions can easily access and assess student work, which can be stored indefinitely. These gains notwithstanding, this usage model fails to take advantage of key features of this technology, especially since students tend not to revisit their ePortfolios once they complete the course.

In the learner-focused model, once ePortfolios are created, students are given much more flexibility in how they use them, since they are construed as a space where students have control. Besides posting examples of their best work and reflection essays for required courses, students are encouraged to write about their learning in that course and across courses, and possibly to analyze their learning strategies, and set learning goals for themselves. In addition, they can create additional ePortfolios under their account with different audiences in mind. Some can be for individual course-related work and others for collaborative projects. Small groups of students can work together on a class project and reflect on their experience both as individuals and as part of a group. Building on their familiarity with social media, some students use ePortfolios to work through issues of identity to develop their personal "brand." They might, for example, create a site to share with potential employers, where they document relevant course work, class projects and work experience, and link to YouTube and LinkedIn.

These sites that they create can incorporate blogs, videos and podcasts, and other digital media as desired, and for each site, students can set the permissions to allow different levels of access, which can later be reset as access needs change. For example, instructors can be given editing rights to leave feedback on class assignments, as can peers on collaborative sites, while potential employers, on the other hand, are given viewing rights. In acquiring these skills, students are learning about online privacy and creating a professional identity as they make their work available to authentic audiences such as friends, family, and employers. In executing these decisions, students are activating critical-thinking and writing skills to take charge of their own learning.

Where assignments are learner-focused, students decide what they need to learn, how they can best learn it, where they can get the information and skills they need, who to ask, with whom to collaborate, and how to gauge their own learning progress. In sites for specific courses, students can easily submit the URL to the course's learning management system for assessment purposes, or some can be graded directly in the software (*Digication*, for example, can function as both an ePortfolio provider and an LMS). In sites for other uses, students have even more options for sharing their work with authentic audiences so that learning can continue long after the class and the degree program are completed (Bolger, Rowland, Reuning-Hummel, & Codner, 2011; D. Cambridge, 2008).

Technology, Pedagogy, and Transformation

What is potentially transformative about this educational technology is that the ePortfolios are owned by students, who collect and select what content to include in their various sites and with whom to share them. As they build their sites, they also reflect on how they best learn, their learning in and between courses, making connections across disciplinary boundaries, and contextualizing the significance and meaning of their learning. This sense of agency helps promote students' metacognitive skills, such as intentional learning, integrative learning, and information literacy, as each student creates his or her own personal learning environment. ePortfolios, depending on how they are incorporated into the course by instructors, and adopted and adapted by students, have the potential to enable learners to take responsibility for their own learning during a course and afterwards (Eynon, Gambino, & Török, 2014).

As an increasing number of platforms become cloud-based, ePortfolios can be accessed from anywhere at any time on an increasing array of PC/Mac devices such as laptops, tablets, and smartphones. Perhaps most important of all, these ePortfolios are available after graduation and can be reconfigured to suit the needs of students' continued educational and vocational learning, as they use the ePortfolios to become life-long learners (B. L. Cambridge, 2007; Kahn, 2012).

The degree to which ePortfolio usage is transformative for learners often depends on why it is implemented by an institution and on what training and ongoing support is available for new adopters (Clark & Eynon, 2009). Where administrators encourage ePortfolio usage and make them available campus-wide, and launch them to serve assessment needs rather than to promote students' critical-thinking and life-long learning skills, faculty and students often see them as a burdensome add-on, using them minimally throughout the course and not at all when the course ends (D. Cambridge, 2008; Clark & Eynon, 2009; Jenson & Treuer, 2014). In this case, ePortfolios are valuable for institutions in so far as they offer a more holistic approach to assessment, but they are less valuable for students

when they prioritize the needs of assessment rather than learning. Moreover, with this type of implementation, there tends to be less training for instructors and ongoing support or supporting materials. Even under optimal circumstances, multiple iterations are usually required for instructors to gain sufficient expertise with the technology to understand how to put it to best pedagogical use (Andrade, 2013; Jenson & Treuer, 2014).

With insufficient support, and lack of experience, instructors tend to fall back on what they are familiar with and use ePortfolios much like earlier paper portfolios as a repository for students' revised work and for assessment in lieu of exams rather than as a tool for transformational learning. In addition, there are often institutional constraints such as course requirements mandating a certain number of pages, as well as a lack of consensus around counting "screens" and evaluating new kinds of multi-media assignments. A further issue is the scarcity of scholarship (Kirkwood & Price, 2013). While these problems persist, instead of capitalizing on numerous affordances such as student ownership and control during a course and afterwards, the transformative potential of the technology remains poorly understood, and therefore poorly realized.

Conclusion

ePortfolios, and other educational technologies, can be aligned with program goals and course learning outcomes to create more meaningful assignments, which, in turn, can lead to students taking more responsibility for their learning, and result in more integrative and innovative learning. With pedagogically-effective implementation of technology, the classroom can be transformed from a site of prescriptive learning characterized by a unilateral transmission model of content from teacher to student to one of distributed expertise, where knowledge is jointly created by and with students, and where critically-thinking, information-literate students are well-prepared for future learning.

Technology-enhanced teaching (especially if it is cloud-based) can meet the needs and expectations of this larger and more diverse student population seeking skills that will serve them well in the new millennium. Challenges persist due to a lack of support for recent adopters, poor understanding of the potential of different tools, and misalignment across course goals, teaching practices, and students' understandings. These challenges notwithstanding, effective use of technologies such as ePortfolios can address current issues in education and create possibilities for transformational learning in the classroom and beyond. In short, it can turn a "crisis" into an opportunity. □

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