

Moving Outside the LMS: Matching Web 2.0 Tools to Instructional Purpose

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- » **The use of instructional technologies should be evaluated against a backdrop of pedagogical objectives, whether it is a learning management system or a Web 2.0 tool.**
 - » **Students' selection of tools to support their learning can result in a more collaborative, constructive, and authentic learning experience.**
 - » **Instructors must balance the benefit of introducing new technology tools into the curriculum with the additional load—for instructors (supporting the tool) and students (learning the tool).**
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What considerations support the decision to either augment or replace an institution's existing learning management system (LMS) with a cloud-based, Web 2.0 technology tool to support students' learning? Do learning experiences supported or hosted by your institutional LMS prepare your students for their post-academic lives? The answer to that question is probably "It depends." The factors on which it depends are many: disciplinary area, students' comfort level with technology, their area of professional interest, and the type of learning outcomes desired, just to name a few. While it is desirable to encourage students to construct their instructional technology environment with the tools they feel will support their learning best, instructors must also consider the additional time, for students and themselves, in doing so.

This paper describes the experiences of an online graduate program in instructional technology at Georgia Southern University (GSU) and the program faculty who have chosen to move beyond the confines of the LMS. This master's-level program prepares students to work in challenging technology-intensive environments that are by their nature nonstandard, under-funded, and ever-changing. Many students in the program become library media or technology specialists in K-12 schools, while others go on to work in faculty development roles in colleges or universities or to accept positions as instructional designers/trainers in business and industry. We realize that online learning will be part of the future personal and work lives of

most of our students, and so our online courses must model best practices in this area.

Integration and Alignment in the Learning Experience

The instructional technology program within the College of Education is accredited by the National Council for the Accreditation of Teacher Education (NCATE) and focuses on performance.¹ By the end of their degree program, our students have demonstrated performance on a wide range of tasks in classroom and real-world settings. Each graduate creates an electronic portfolio that requires the selection of artifacts that demonstrate mastery of specific standards. Kubiszyn and Borich recommend portfolios "if you want to assess both achievement and growth in an authentic context."² Program faculty members made a conscious decision not to use the portfolio construction capabilities included within the LMS. Part of the reflective process of portfolio assembly includes the selection of a tool to house the e-portfolio (such as a website, wiki, or blog). Our students begin constructing their portfolio early in the program and then add to it as they progress through their coursework. The graduate program includes specific key assessments that have been developed to fulfill accreditation requirements, but students also select other artifacts they believe demonstrate their standards-based requirements. Each artifact is accompanied by a reflection, in which the student describes how each component demonstrates they have met the standard.

Our own College of Education's conceptual framework (see <http://coe.georgiasouthern.edu/pdfs/cfram.pdf>) requires all programs to focus on relevant professional knowledge, skills and dispositions, diversity, technology, and reflective practice. Under the umbrella of the NCATE, the program's concentrations have been designed to meet standards for the American Library Association/American Association of School Librarians and the Association for Educational Communications and Technology. Choosing to meet any one set of these standards with the limited set of tools available within our LMS was challenging. The need to meet multiple sets of standards requires our program to use many different tools and strategies to ensure our program graduates have had appropriate, authentic experiences. Hence, we have made thoughtful and strategic decisions to have our students undertake learning activities outside the LMS, frequently using the tools they will encounter in their professional lives. For example, students who will be working in K-12 school contexts are not likely to work with a major commercial LMS and will have to rely on tools freely available on the web (such as PBWorks or VoiceThread).³ Because new and interesting web-based tools with relevance to our programs emerge outside the LMS, working outside the LMS is necessary to keep our students cognizant of current trends.

A case can also be made, at least for our program, from a pedagogical perspective. Instructors of graduate-level courses typically push their students to the highest levels of Bloom's taxonomy of learning in the cognitive domain.⁴ Assignments and assessments that fall into these upper-level categories of Bloom routinely require students to perform tasks like create, design, develop, or evaluate. In his 2009 update of Bloom's taxonomy for learning in the Digital Age, *Bloom's Digital Taxonomy*, Churches suggests that utilization of new technology tools goes beyond the cognitive domain focus of the original taxonomy, emphasizing the synergy between cognition and technology tools.⁵ Churches' work places an increased emphasis on collaboration and communication as part of his attempt to bring focus to how technology tools are actually incorporated into authentic learning activities.

Keller suggests several strategies in his ARCS (attention, relevance, confidence, and satisfaction) model of motivational design to help cultivate and maintain learner motivation.⁶ Some of Keller's strategies include describing specifically how a learning experience will relate to the future activities of the learner and allowing the learner to use newly acquired skills in realistic settings as soon as possible. Combining

Keller's ideas with the higher-level learning outcomes of Bloom's updated taxonomy leads an instructor to what is referred to as *authentic learning activities*. Woo, Herrington, Agostinho, and Reeves synthesized the literature on authentic learning into a list of key characteristics⁷ of successful activities:

- have real-world relevance;
- provide the opportunity for students to examine the task from different perspectives, using a variety of resources;
- provide the opportunity to collaborate;
- integrate and apply across different subject areas and lead beyond domain-specific outcomes;
- create polished products valuable in their own right rather than as preparation for something else; and
- allow competing solutions and diverse outcomes.

Web 2.0 Tools, the LMS, and Pedagogy

It is possible to create meaningful, authentic learning experiences for students within the boundaries of your available LMS, but in some cases, authentic instructional activities require looking outside the LMS. An LMS should be treated as a pedagogical tool and Lane notes that many faculty members fail to realize LMSs are based on a set of pedagogical principles. She suggests that most current systems are formulated around a traditional view of teaching, with a focus on the instructor as a course manager and deliverer of instruction. Most faculty would agree that an LMS's administrative and managerial functions are useful, but, as many authors have noted, faculty members need to look beyond those functions and question whether or not the LMS fosters a collaborative, constructive, shared pedagogy of authentic learning.⁸

While LMSs continually add tools to provide additional functionality, they typically lag behind the tools available in the Web 2.0 world. In addition, many of the newest Web 2.0 tools are developed for specific sets of users (medicine or education, for example). Since an LMS is used across many different college programs, it is not feasible for the commercial LMS to develop content-specific tools. The most compelling argument for the use of Web 2.0 tools may be that it is simply unnecessary to pay for additional modules/functions within an LMS when tools that serve learning objectives well are free and widely available. To accommodate a "pedagogy comes first" philosophy, instructors should not feel limited by the set of tools contained within an LMS.⁹ For instance,

our students' learning activities outside the LMS allow them to work on projects using tools they will be using after graduation (real-world relevance), to sometimes struggle with choosing the best tool to express their ideas (ill-defined), to consider multiple points of view (different perspectives), and to develop the ability to work with classmates in their course and other course sections (collaborate). Additionally, within the field of teacher education, the concept of open communities of practice/professional learning is being emphasized. This concept includes a strong focus on making student "work" public.¹⁰ Accepting a technology leadership role in an educational setting is a learning objective of the program; thus it is critical for our students to become comfortable sharing information and leading with the professional community.¹¹

Public education today requires a high degree of focus on how instructional strategies lead to improved student learning. To prepare students, we ask them to include an assessment component when Web 2.0 tools are used for instructional purposes. Students share these experiences within our classes (and with the larger community, again using the tools themselves) and thereby contribute to our knowledge of how 21st-century technologies can transform teaching and learning.¹² Our students' work clearly demonstrates how they have been able to use Web 2.0 tools as part of instruction and reflect on the use of those tools through the framework of the program's standards and expectations. For example, in demonstrating mastery of Standard One of the ALA/AASL Standards for school library/media specialists, one student utilized scribed, a Google forms survey, YouTube, and Slideshare.¹³

Selecting Web 2.0 Tools

Instructors must balance the benefit of introducing new technology tools into the curriculum with the additional load—for instructors (supporting the tool) and students (learning the tool)—using the tool. As a group, our faculty informally coordinates who is using which tools, and we make an attempt to standardize the selection and use of tools across courses when possible. We mostly use one wiki product, for example, to minimize faculty and student support needs. Also, we look for tools that have good help resources available, either through the product itself or from online resources such as YouTube.

Selecting a tool to use outside the LMS environment requires careful thought. Hodges and Clark have suggested two categories of criteria to consider when adopting a Web 2.0 tool for instructional purposes:¹⁴

1. A tool's ease of use; technical and legal requirements, such as accessibility; and

security. (Note that some higher education institutions may have their own policies regarding which tools can be incorporated into instruction.)¹⁵

2. A tool's availability, nature of support resources available for the tool, and features offered by the tool.

While the selection criteria outlined above are critical, we use them as a springboard to discuss the interaction between tools and instructional philosophy. The tools used in many LMSs impact pedagogy.¹⁶ Faculty in the instructional technology program share a constructivist, inquiry-focused philosophy, which we hope to model for our students. Toward that end, we give our students considerable freedom to select the Web 2.0 tools that best match their own instructional purposes and goals.¹⁷ This reflective selection process is embedded in all levels of the program—from coursework through practicum/site-based activities—and culminates in the e-portfolio.

When our students complete authentic learning activities in real-world settings, they are also able to choose from a wide variety of tools. These settings require our graduate students to take on the authentic roles of educators or library media specialists who must then interact with their own students. In these real-world contexts (frequently K-12 public schools), educators face constraints such as access to computers, slow Internet connections, and filtering systems. Despite those constraints, our student educators are required to utilize Web 2.0 tools to design, develop, and implement learning activities with their students. This frequently leads to the unexpected benefit of engaging in conversations with administrators and technology personnel about the value of these tools as part of the teaching and learning process, allowing our students to take on leadership and advocacy roles before they graduate and become practitioners.

Key Takeaways

Too often, educators teach the way they were taught, which may be limiting. In the case of our program, our ever-expanding use and exploration of Web 2.0 tools supports our learning outcomes. We perceive several benefits of this approach to our students, our program, and ourselves as faculty members.

Student Benefits

Asking students to prepare and present the sum of their course work using an e-portfolio method requires they take ownership, control, and responsibility for their learning. While our accreditation agencies mandate a set of key assessments to ensure "coverage"

of specific standards, students have considerable freedom to select tools to complete the assignments and communicate results to the faculty, other students, and the broader educational community. Equally important, this requires students to deal with constantly changing learning technologies, just as they will when they become professionals. With few established models to follow, their work becomes more reflective and thoughtful and gives them some practice with facilitating the use of these tools with real students and real educators in settings with real-world constraints. Exit surveys of our students provide evidence of how this develops their confidence and a willingness to accept technology leadership roles.

Program Benefits

Our program benefits because it allows us to use these technologies with students to demonstrate the ways in which they meet the appropriate standards, internally and externally. Our e-portfolios, which are hosted on public websites, make it easy for other faculty members and students to review students' work. As faculty, we've found that being able to easily share these examples tends to improve the quality of student work and by having so much of their work publicly available, students are also contributing to the educational community about effective pedagogical strategies using online tools.

Faculty Member Benefits

Use of technological tools in the program requires the faculty to constantly update courses and upgrade skills even though their strengths and preferences in using Web 2.0 tools varies. For example, some faculty members have highly developed skills for manipulating and using digital images, while others have advanced skills in using content tools, like wikis. The most experienced instructional technology faculty members (that is, those who have been in higher education more than 20 years) have long heard that it is time to shift from being the "sage on the stage to the guide on the side." Moving outside the LMS has been an empowering and energizing experience for new and experienced program faculty and they have become active participants in the learning experience with our students, frequently sharing examples of student work with each other and encouraging the exploration of a new tool.¹⁸ This innovative culture supports instruction where "each offering of a course is an experiment of something new to try, while the implementation process provides fodder for reflection that fuels the next experiment." This is far different

To Explore Further

- A discussion of FERPA and Higher Education via the National Education Writer's Association from February 2011, <http://www.edbeat.net/2011/02/higher-ed-conference-podcast-ferpa.html>.
- <http://delta.ncsu.edu/teach/ferpa/>
- <http://www.facultyfocus.com/articles/teaching-with-technology-articles/ferpa-and-social-media/>
- <http://www.educause.edu/Resources/Browse/FERPA/33226>
- <http://www.edutopia.org/blog/instruction-design-online-education-personal-learning-environment-technology>
- <http://www.alatechsource.org/blog/2011/05/buddypress-libraries-and-higher-education-an-interview-with-kenley-neufeld-and-michael->
- Cambridge, D., *Eportfolios for Lifelong Learning and Assessment* (San Francisco: Jossey-Bass, 2010).
- Driscoll, M. P., *Psychology of Learning for Instruction* (3rd ed.) (Boston: Allyn and Bacon, 2005).
- Whitby, T., "World's Simplest Online Safety Policy," 2011, <http://tomwhitby.wordpress.com/2011/04/02/world%E2%80%99s-simplest-online-safety-policy/>.

from the model of course design recommended at our own institution, where instructors plug course content into a template and then become course managers.

Other Considerations

FERPA

A common question often asked about our use of Web 2.0 tools is how we handle student privacy issues, especially those related to FERPA.¹⁹ Many misconceptions about how FERPA might apply to the use of Web 2.0 tools in higher education exist, for instance, that Web 2.0 tool use is not permitted. Depending on policies at individual institutions, what is allowed varies and is often unclear. FERPA was established in 1974, long before teaching and learning in the cloud was possible.²⁰ In many ways, we concur with Lowenthal and Thomas, who argue that learning is a socially situated practice and that outcomes of learning will almost surely be applied inside socially structured work environments that do not have any sense of private output. Reflecting an authentic practice of working with others to achieve an outcome, public performance of student work not only models this practice, it also provides remarkable learning opportunities for students receiving feedback from their peers, outside experts, and the instructor.²¹ These resources and others, like *Privacy Considerations in Cloud-Based Teaching and Learning Environments*,²² have informed continuous discussions within our program. We

have developed common language to insert in our course syllabi about the use of Web 2.0 tools and have found that simple, common-sense approaches, such as allowing students to use a variety of tools, keeping grades and instructor evaluations private, and allowing students to use pseudonyms while using public tools, may go a long way toward addressing concerns related to FERPA and the use of Web 2.0 tools.

ADA

In addition to the complex teaching and learning decisions related to the selection of Web 2.0 tools outlined here so far, there are important legal and ethical responsibilities to consider. The recent Dear Colleague Letter²³ regarding the accessibility of learning resources makes it unclear how to utilize Web 2.0 tools while adhering to the Americans with Disabilities Act (ADA) requirements. Just as FERPA was developed before 21st-century methods of teaching and learning were imagined, we have arrived at a time when some learning tools exist for which few accessibility and accessible alternatives are possible. A text transcript for the audio portion of an instructional video is time-intensive to create, but is a straightforward concept. But what is an acceptable accessible alternative to an interactive, tablet-based resource like the PushPopPress's OurChoice app, for instance?

For now, language about our willingness to work with students with disabilities is included in our course syllabi. We work with students needing special accommodations on a case-by-case basis to ensure that course assignments can be completed in meaningful ways accessible to them. As a program we have had discussions about Universal Design for Learning and how to incorporate it into our practice and our curriculum as an important body of knowledge for our students to understand. As these important issues and associated policies evolve, we will continue to do what is right for our students.

Endnotes

1. Certification programs in Georgia must also be approved by the Georgia Professional Standards Commission (PSC). NCATE standards: <http://www.ncate.org/Standards/tabid/107/>

- [Default.aspx](#) and PSC standards: (<http://www.gapsc.com/EducatorPreparation/Standards2000/IndexGA2000.asp>) focus on performance.
2. Kubiszyn, T., and Borich, G., *Educational Testing and Measurement: Classroom Application and Practice* (6th ed.) (New York: John Wiley & Sons, Inc., 2000): 182.
 3. For a discussion of VoiceThread in higher education, see <http://net.educause.edu/ir/library/pdf/ELI7050.pdf>.
 4. Bloom, B. S., Krathwohl, D. R., and Masia, B. B., *Taxonomy of Educational Objectives: The Classification of Educational Goals* (New York: D. McKay, 1956).
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 6. Keller, J. M., "Development and Use of the ARCS Model of Instructional Design," *Journal of Instructional Development* 10, no. 3 (1987): 2-10.
 7. Woo, Y. W., Herrington, J., Agostinho, S., and Reeves, T. C., "Implementing Authentic Tasks in Web-Based Learning Environments," *EDUCAUSE Quarterly* 30, no. 3, (2007): 36-43, <http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/ImplementingAuthenticTasksinWe/161831>.
 8. Arvan, L., "Dis-Integrating the LMS," *EDUCAUSE Quarterly* 32, no. 2 (2009), <http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/DisIntegratingtheLMS/174588>; Lane, L. M., "Toolbox or Trap? Course Management Systems and Pedagogy," *EDUCAUSE Quarterly* 31, no. 2 (2008): 4-6, <http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/162864>; Lowenthal, P. R., and Thomas, D., "Death to the Digital Dropbox: Rethinking Student Privacy and Public Performance," *EDUCAUSE Quarterly* 33, no. 3 (2010), <http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/DeathtotheDigitalDropboxRethin/213672>; and Mott, J., "Envisioning the Post-LMS Era: The Open Learning Network," *EDUCAUSE Quarterly* 33, no. 1 (2010), <http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/EnvisioningthePostLMSEraTheOpen/199389>.
 9. Lane, "Toolbox or Trap?"
 10. Lieberman, A., and Mace, D. P., "Making Practice Public: Teacher Learning in the 21st Century," *Journal of Teacher Education* 61, no. 1-2 (2009): 77-88.
 11. Dede, C., "A Seismic Shift in Epistemology," *EDUCAUSE Review* 43, no. 3 (2008): 80-81.
 12. Dede, "A Seismic Shift," and Lieberman and Mace, "Making Practice Public."
 13. See <http://lizfutchportfolio.pbworks.com/w/page/32207597/MS-as-Teacher>.
 14. Hodges, C. B., and Clark, K. F., "Selecting a Web 2.0 Presentation Tool," *LMC: Library Media Connection* (in press).
 15. Lavagnino, M. B., "Policy as an Enabler of Student Engagement," *EDUCAUSE Review* 45, no. 5 (2010): 104-105, <http://www.educause.edu/EDUCAUSE+Review/EDUCAUSEReviewMagazineVolume45/PolicyasanEnablerofStudentEnga/213959>.
 16. Lane, "Toolbox or Trap?"
 17. See example portfolio at <http://frit7737sp10portfolios.pbworks.com/w/page/25252918/FrontPage>.
 18. Arvan, "Dis-Integrating the LMS."
 19. FERPA (n.d.), <http://www2.ed.gov/policy/gen/guid/fpco/ferpa/index.html>.
 20. NCSU, "Student Privacy (FERPA)" (2011), <http://delta.ncsu.edu/teach/ferpa/>.
 21. Lowenthal, P. R., and Thomas, D., "Death to the Digital Dropbox: Rethinking Student Privacy and Public Performance," *EDUCAUSE Quarterly* 33, no. 3 (2010), <http://www.educause.edu/EDUCAUSE+Quarterly/EDUCAUSEQuarterlyMagazineVolum/DeathtotheDigitalDropboxRethin/213672>.
 22. Diaz, V., Golas, J., and Gautsch, S., "Privacy Considerations in Cloud-Based Teaching and Learning Environments," 2010, <http://net.educause.edu/ir/library/pdf/ELI3024.pdf>.
 23. See <http://www2.ed.gov/about/offices/list/ocr/letters/colleague-20100629.html> and <http://chronicle.com/blogs/wiredcampus/virtual-world-real-money/3202>.

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