

The Researcher: An Interdisciplinary Journal

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The Researcher: An Interdisciplinary Journal

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Foreword

by

Candis P. Pizzetta, Ph.D., Guest Editor*

The Researcher could not be more appropriate as a venue for exploring new ideas on what cyber-learning is and how it will transform the traditional classroom. As an interdisciplinary journal, *The Researcher* provides a space where research from all disciplines in the areas of cyber-learning and cyber-education can coalesce and can begin to offer a comprehensive picture of where cyber-education is today and in what directions it needs to evolve. Approaches to pedagogy involving technology along with educational technology itself are changing rapidly and challenging educators to develop pedagogical methods that can effectively incorporate the tools of the digital age into the classroom. This transformation will require a significantly different approach to both classroom teaching and to the definition of the “classroom” itself.

The National Science Foundation (2008) defines cyber-learning broadly as “learning that is mediated by networked computing and communications technologies” (p. 10). For institutions of higher learning, this definition of cyber-learning means incorporating new technologies into the traditional classroom as well as providing remote access to instruction and information. Students and parents now expect colleges and universities to know which technologies will be significant to students in their future careers and to train students in the use of those technologies. Students often arrive on campuses with high expectations for cyber-pedagogies and with far more experience in the digital world than many of their professors have. In *Scholarship in the Digital Age: Information, Infrastructure, and the Internet*, Christine Borgman (2007) defines the über-connected generation of students entering universities as digital natives. These are students who began interacting with digital media and technology before they learned to read and write. For these students, technology cannot be approached as supplemental to their daily experiences; technology for the digital native is essential.

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Traditional pedagogies no longer fully engage these students; therefore, educators are challenged to leverage emerging tech trends and create flexible cyber-learning pedagogies that provide for the learning styles of this new kind of student.

Creating new cyber-pedagogy leads colleges and universities to additional challenges as new technologies modify existing approaches to education and change the structure of educational institutions. At a time when many colleges and universities are struggling financially, the financial demands of expanding the cyber-learning infrastructure and re-training traditionally trained faculty seem beyond the means of many institutions. At the same time, academic disciplines are being transformed by the emerging technologies adapted to the classroom. Institutions of higher learning cannot afford to postpone the integration of new cyber-pedagogies on the institutional level. Even now, teaching Shakespeare without instant access to YouTube clips of various productions of *Hamlet* or conducting a class on speech pathology without students being able to access one of the many digital toolkits seems unthinkable. In another decade, almost every college faculty member will have access to digital tools and resources specific to his or her discipline.

Beyond the economic cost of transforming the college classroom, we must ensure that we do not incur an educational cost, as well. The challenges now include both maximizing the usefulness of these new tools and recognizing the pitfalls that can arise when students are overwhelmed with new technology. Each new technology introduced should be tied with specific, measurable educational objectives. As new cyber-infused pedagogies are being designed to increase student engagement in the traditional classroom and to create next-generation learning communities in the cyber-classroom, the role of faculty as designers and evaluators of pedagogy has become even more essential. As the articles in this edition of *The Researcher* indicate, students gain educational benefits from technology only when the use of cyber-tools is based on clear pedagogical goals. The most exciting aspect of cyber-learning is the possibility for more active learning that will lead to increased student engagement. The image of the bored student staring off into space or doodling on the edge of a notebook has been replaced by a vision of students interacting with challenging and engaging problems via technology.

Both K-12 educators and faculty and administrators at institutions of higher education are working to find the most meaningful and productive ways to incorporate technology into the classroom. Yet, at a time when educators are grappling with the after-effects of too much emphasis on standardized testing, those of us in higher education who train K-12 teachers need to make certain that we do not make the same mistake with technology. Having iPads or computers or internet access in the classroom will not solve all of the problems of our K-12 systems, nor will it allow institutions of higher education to reduce personal costs and magically increase enrollment through online classes while maintaining educational standards. The tools currently being used in the field of cyber-learning, and those that have yet to be developed, are tools that must be wielded by trained and experienced techno-craftspeople. Both research on cyber-learning and experiments with it in the classroom need to take place in an atmosphere of deliberation and flexibility. Administrators and instructors should set measurable goals for each change that they implement, creating an on-campus culture of radical but methodical experimentation. What does that mean? In higher education, we often talk about measurable goals, but we rarely define those goals in terms of classroom engagement. The digitization of the classroom offers a gift of micro-measurement. Design, measurement, and redesign can potentially occur within a semester course rather than over an accrediting body's five or ten year cycle. Rather than institutions of higher learning and their accrediting bodies accepting exit exams as a measure of student learning, we can now demonstrate which courses and even which skills or units delivered in individual courses most effectively engage students.

Measuring student engagement is particularly important for online-only courses. Immediate and practical benefits of expanding cyber-education include the potential to reach students who cannot attend regular classes and to share resources between districts. In its earliest iteration, online education was promoted as a way for students to attend class even when they could not physically visit campus. Now even traditional students often choose to take online courses along with their face-to-face courses. Students, faculty, and administrators recognize the online learning environment as potentially equivalent with the face-to-face learning environment

in offering expanded educational opportunities. However, that parity of opportunity does not suggest that online courses are as successful at reaching educational objectives as are traditional courses. Studies conducted in recent years indicate a tendency of students to perform at lower levels in online courses generally and to perform at significantly lower levels in online courses in the social sciences and applied professions (Jaggars, Edgecomb, & Stacey, 2013). The potential for the online environment is great, but faculty and administrators must acknowledge the need for new pedagogies and accessible, reliable technology. Creating an effective online environment involves more than simply offering course materials in digital format. Jaggars, Edgecomb, and Stacey (2013) illustrate in a recent study out of the Columbia University Community College Research Center the essential nature of offering a range of support for online learners. Although faculty and students both need to have proficient technical skills to ensure a productive online class experience, it is the structure of the course and the availability of the professor that determines whether or not students remain engaged. Thus, the job of the online educator becomes more than conveying content to students; students expect faculty to have a noticeable online presence and to create a sense of “caring” (Jaggars, Edgecomb, & Stacey, 2013, p. 3). Faculty, therefore, must be able to find assistance at their universities to “incorporate instructions, tools, and strategies that increase student engagement and faculty-student interaction” (Jaggars, Edgecomb, & Stacey, 2013, p. 5). To grasp the full value of cyber-education, we must do more than just translate the lecture-type classroom to online environment. Recorded lectures may be valuable to the online learner, but to fully engage students with online content, online courses need to make use of collaboration and communication tools. One advantage of the face-to-face classroom is the ease of interaction between faculty and students and students and their peers. These connections in the online classroom are more difficult to establish and remain fragile even in the most engaging courses. Thus, one of the dangers of online or distance learning is that the online student will feel isolated and will fail to gain full benefit from the course materials as a result of this isolation. Tech advances offer solutions to online isolation. For instance, Thinkbinder.com is a free collaborative platform where students can easily create study groups, and

ChannelME.com is a web tool that allows multiple users to browse a particular website simultaneously and even chat with each other while they examine the content. A variety of video chat, file-sharing, whiteboard, and group mind-mapping sites are available to augment LMS tools. Ensuring that all students have access to the communication technologies will be essential in order for the online classroom to rival the face-to-face classroom in student engagement and in learning outcomes.

In addition to the growth in online course offerings and degree programs, many colleges and universities have already begun increasing their digital library holdings, allowing large university systems to share access between users across multiple campuses. Cost savings and administrative efficiencies that can be maximized by digitizing resources may be one of the few unalloyed benefits of the growth of cyber-learning. Digital and open educational resources may be one cost effective way to transform online education. Open educational resources (OER) are online educational materials available for anyone to use. OER include everything from full courses or course modules to games, videos, and interactive activities. These materials are often offered through Creative Commons or similar licenses that allow the creator of the resources to keep the copyright while permitting educators to copy, distribute, and make some uses of the materials. In addition to Creative Commons, other groups and institutions have begun offering large quantities of high quality digital content online. MIT's OpenCourseWare initiative and Carnegie Mellon University's Open Learning Initiative were initially funded by the Hewlett Foundation. The British government created Jisc Digital Libraries in the Classroom in 2003 to explore how OER could transform the classroom. The biggest buzz in recent years has been generated by a variety of open online courses, starting with the first MOOCs (Massive Open Online Courses) in 2008 and evolving to a variety of free online offerings such as Distributed Online collaborative Courses (DOCC) and mini Open Online Courses (mOOC). Although very few institutions of higher learning view the MOOC and its offspring as a replacement for traditional online classes, the open online format does provide substantial opportunities for online instructors to incorporate some of the best available materials into their online courses.

Those educators interested in teaching online or in incorporating more technology into the classroom—I include myself in this group—tend to view new tools and pedagogies with hopefulness unmarred by critical perspective. This approach can be a mistake. We must truly explore the usefulness of online and technology enhanced pedagogies before we declare any one of them the savior of higher education. Much of the early scholarly dialogue on online learning focused on the benefits of cyber-learning, even suggesting that the rescue of the American education system from its obvious decline would come through the these new pedagogies (Brabazon, 2002; Menchik, 2004). However, we now recognize the need to consider how technology changes the exchange of knowledge and skills and how it alters the relationship between instructor and learner. Davison (2004) suggests we have not mindfully considered how technology transcends mere use and intertwines with our sense of self and the world. Online faculty will no longer be able to rely on anecdotal experience in place of more precise measurement of learning outcomes. Online teaching requires us to use data collection as part of course design—to create a culture of feedback and redesign within our online learning faculty.

For STEM learners, cyber-learning offers opportunities for more easily sharing data across institutions and for more easily analyzing data. The STEM learner often enters the university environment via large lecture-type classes and may not feel fully engaged in the subject matter until late in the degree program. With the advent of new digital pedagogies like the National Science Digital Library or the Earth Exploration Toolbook, the STEM learner can become more actively involved in course content earlier in the degree program. This increased participation and personalization offered by digital pedagogies may well lead to increased retention in STEM fields. Technology not only can assist the individual STEM learner but also can connect students to individuals and groups with similar interests, thereby furthering student engagement. Collaboration in the sciences has long been a mainstay of knowledge production, and cyber-learning allows that collaboration to begin earlier in the students' matriculation. Particularly for underserved populations and for colleges and universities that are underfunded, the opportunities for sharing and collaboration offered by technology are going to be indispensable

to their advancement. Only through direct and immediate engagement can at-risk students be expected to remain enrolled; cyber-learning offers one tool for increasing STEM student engagement early in the STEM student's academic career.

Despite the promise of a more exciting cyber-learning experience given the rich content of online open resources, many scholars, instructors, and students have difficulty finding relevant, high-quality resources. Even when they can find such resources, assessments of their quality are often unavailable. The lack of clear quality assurances in open online resources is acknowledged as a major concern for educators (D'Antoni, 2009). A number of solutions have been proposed, including Connexions, which allows third parties to review published content as a method of assessing the quality of online resources (Baraniuk, 2008). A similar solution is offered by MERLOT (Multimedia Educational Resource for Learning and Online Teaching), a well-known site that certifies research papers by creating discipline-based groups to generate reviews (Carey & Hanley, 2008). Other approaches are being developed to evaluate open online resources through the use of benchmarks provided by discipline-specific organizations, voluntary peer review assessments, and a number of other measures (Iiyoshi & Kumar, 2008; Yin & Fan, 2011).

The topics that the authors in this special issue have chosen to investigate and explore are quite varied and address both the value of measuring online pedagogy and the role of communication in ensuring successful online learning. The articles range from a discussion of social media to an exploration of the effect of technology on the writing process to a comparison of online and hybrid courses to online collaboration. An interesting trend emerges when we examine the articles for this issue. The success or failure of many of the technologies incorporated into the classroom hinges on whether or not there are structures in place to allow human interaction, to encourage the interaction between members of the cyber-community, between faculty and students, and between students and students. All of these technologies require communication. The quality of communication seems to determine the quality of the learning experience and the value of the instruction mediated by the technology. I find that interesting because much of what I consider to be essential to a positive experience with technology really does center around the

pedagogy, around how the technology is incorporated in the classroom. That focus means not just lesson plans and assignments but also the communication between the professor and student about how a particular technology assists students in achieving certain learning objectives.

In “Going Beyond the Content: Building Community through Collaboration in Online Teaching,” Carrie Jo Coaplen, Ericka Tonise Hollis, and Ray Bailey explore the use of collaboration to create community in online courses. The three authors examine specific pedagogical practices that rely on student-centered activities to build online collaboration. For these authors—one a tenure-track professor, one an instructional designer, and one an instructional librarian—technology should not be an obstacle to creating a community of cyber-learners. Quite often, students wonder what it is that they are supposed to accomplish with technology, and in Monica Flippin Wynn’s “Student Perceptions of Technology in the Classroom: A Faculty and Student Collaboration,” the researcher addresses the need for clear goals for the use of technology. The author is not only studying student perceptions of technology but is also allowing students to articulate the aspects of technology in the classroom that they find either useful or frustrating. The qualitative aspect of this study emphasizes the value of communication between instructor and student. As well, Flippin Wynn’s essay highlights the essential nature of clear objectives for the incorporation of technology into the learning environment. This study serves as a starting point for recognizing the limits of the digital natives’ experience with educational technology. Flippin Wynn’s study involved thirty research subjects who were students at a Historically Black College or University (HBCU). Not only would it be interesting to see the study expand in size, but it also would be productive for it to concentrate on students at HBCUs across the country. HBCUs often serve students who come from economically disadvantaged backgrounds and who do not arrive at college with an excess of technology experience in the classroom. So their concerns illustrate those of individuals who are often negatively affected by the digital divide. In this essay, Flippin Wynn has the students self-report on their individual perceptions of how technology works in the classroom and their concerns about technology in the classroom.

Chet Breaux's essay "Microcomputers and Composition: A Rhetoric of Choice" addresses the interaction between student and technology from a completely different perspective. Breaux's article argues that students' rhetorical choices are shaped by the technology that they are required to use in their composition courses. Both Breaux's and Flippin Wynn's essays illustrate the fact that students are often confused about what it is that technology is supposed to accomplish in the classroom. Although the students want technology included in the classroom, they want it used for specific purposes. When technology is not used in a way that enhances learning, students view the additional course requirements as a distraction from the course goals. A number of the subjects in Flippin Wynn's study discussed the value of social media and connectivity as part of the learning experience, and this is a topic that Pamela Lemoine and Michael Richardson discuss in their article "Cyber-learning: The Impact of Instruction on Higher Education." One of Lemoine's and Richardson's primary points is that there has been a shift in the characterization of the classroom in higher education. College is no longer a set of fragmented individual classrooms led by individual professors, nor is it even individual departments or universities teaching students in isolation. Instead, we are in an age of connectivity and integration. Rather than working in a classroom with a single professor who imparts knowledge to them, students are now able to work within knowledge communities that exist outside the classroom even while physically (or virtually) participating in a class. This connectivity is one of the significant advantages to cyber-learning. Expanding the classroom to include the larger world as a source of knowledge, a venue for collaboration, and an outlet for student expression and student knowledge creation is one of the primary advantages of cyber-learning. Communication is the key to that expansion. Social networking sites are being used in a myriad of new pedagogical applications to enhance learning in the classroom.

Social media allows the acquisition of knowledge along with methods through which to collaborate and to share knowledge. One of the central tenets of teaching has been that when we teach we learn: that those who teach others often learn the material better than those who passively receive knowledge. Yet, at times, having students teach other students in the classroom can almost seem an empty exercise. However, students are often

enlivened by the possibility that what they have to say about a subject will be shared with others via the internet, whether it be through social media or YouTube or blogging. Boyd talks about this value of sharing and the value of communication through blogging in her essay. In this essay, Boyd is looking at the educational value of blogs used in a classroom setting. One of the foci of her article is that blogs turn pedagogy on its ear. Blogs mean that it is no longer the instructor who disseminates knowledge but the instructor who guides students as they take control of knowledge and re-articulate the information that they have learned, sharing it with others via blogging. Boyd does acknowledge that there are limits to social media in the classroom. The blog, social media, and YouTube videos are tools. They are not singly capable of replacing traditional instruction but rather form a new base for a new pedagogy, offering ways to augment traditional instruction and to recognize that students today must be prepared for a world that will require more of them than simply working in a small, confined, and fragmented space. Their work will increasingly take place in the public sphere, and they must be able to feel comfortable and be productive in that arena. In particular, the communications aspect of cyber-learning increases opportunities for collaboration within the classroom, between classes and universities, and between classes and individuals outside the educational setting. Collaboration, particularly for students who are still gathering knowledge and expertise, is a way to increase productivity and understanding of how to maximize the value of group work through group think.

In the discussion of blogging, Boyd makes the point that by creating and disseminating knowledge themselves, students are able to take ownership of the material and of their own learning. They become not only active learners in the classroom but also active citizen learners. They are creating knowledge by learning and by sharing, obtaining and disseminating at the same time. The article by Lovern and Lovern, "Student-Initiated Contact with Professors: A Comparison of Face-to-Face, Hybrid, and Online Students," shows the place of student-instructor interaction in different course delivery methods, online, face-to-face, and hybrid. The study done by Lovern and Lovern is an interesting and fairly thorough examination of the role of student-initiated electronic communication between students and professors. As more and

more faculty members communicate primarily or even exclusively with their students via email or text message or Skype, the reasons for communicating become significant in understanding how student-faculty interaction intersects with pedagogical choices. Lovern and Lovern show that students initiate interaction with faculty for different reasons and at a different rate in different course delivery settings. These differences seem to indicate that different course delivery methods require different kinds of interactions. Particularly significant for the cyber-infused course is the indication that online and hybrid student-initiated interactions quite often are the result of confusion over or questions on course content. Thus, communication of pedagogical goals in the use of technology in the classroom, as in Flippin Wynn's study, becomes a guiding principle for effectively transforming the traditional classroom into the cyber-classroom.

Whatever the perceived value of cyber-resources, the technologies and resources of the digital age have disrupted traditional educational practices in a way that will transform higher education over the next generation. Collaboration tools like wikis offer knowledge generation opportunities on a scale that could empower educators and students to connect with the world beyond the classroom. With Web 2.0 technologies, cyber-learning means that the student is no longer a passive receiver of knowledge and the instructor is no longer solely in control of the transfer of knowledge in the classroom, be it a traditional or virtual classroom. Instead, students and scholars will play a much more active role in education through their access to high quality cyber-learning resources.

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GOING BEYOND THE CONTENT: BUILDING COMMUNITY THROUGH COLLABORATION IN ONLINE TEACHING

by

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and Ray Bailey, M.L.S.³

Abstract

This reflective essay shares experiences of building online communities through collaboration from its three authors, who possess varying degrees of experience and expertise in online teaching. Specifically, through stories and pedagogical experiences, we respond to the question, “How can online teachers build community through collaborative pedagogical practices in various digital learning communities?” From the perspectives of a tenure track professor, an instructional designer, and an instructional librarian, we hope to provide narratives, specific tools, words of wisdom, and encouragement about collaborative, student-centered, community-building practices and tools in online courses and distance learning.

Introduction

A growing number of colleges and universities across the nation have developed courses that require digital literacy assignments as well as online and hybrid teaching programs and software. Blackboard, for example, has become one among many ubiquitous learning management systems. Additionally, online writing assignments appear on syllabi nationwide. Despite, or in the face of, the proliferation of online teaching and digital classroom activities, comparisons to face-to-face teaching remain salient. Among these comparisons, and of concern to the authors, is the concept of community building. We believe that building classroom communities is central to student success and student-centered teaching and learning.

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³ Mr. Bailey is an Instructional Librarian at Morehead State University.

As a result of the importance of classroom communities to student learning, our essay addresses online teaching and the facilitation of community building. In addition, this essay also defines how we have constructed the lens and working definition of a digital learning community of practice contextualized by our knowledge, professional development, and advice. We hope that readers take away ideas about how practitioners can promote community building through online tools and activities. Further, we hope the essay responds to the question: How do specific online trainings, such as applying the *Quality Matters Rubric* to online course design certification, work in conjunction with these aims? Our essay explores these questions through our varying engagements with and expertise (or lack thereof) in distance and online learning and teaching, including assignments and online class activities; these include Dr. C's experience of building community in her online graduate theory course through Blackboard discussion boards, revision assignments, and student-centered pedagogical practices. Mrs. Ericka Hollis, instructional designer and student in a doctoral technology leadership program, details how Quality Matters' standard 5.2 relates to community building within online and hybrid course requirements. Mr. Ray Bailey, instructional librarian, explains his use of required assignments and technologies that build community and can easily be imported into online courses.

Above all, we hope that our experiences and knowledge provide practical inspiration and relatable experiences for those who are interested in facilitating collaboration and building communities in online teaching and other distance learning situations, especially because we believe that both are central components of our most effective and positive teaching.

Carrie: Challenge Courses, the Full Value Contract, and Community in Online Classes

I had not finished writing my dissertation when I was offered a tenure track faculty position at Morehead State University (MSU) in Morehead, Kentucky. Even though my dissertation project examines one digital community's collaborative understanding of place, I possessed neither experience nor interest in teaching online courses. When my department chair asked if I would be willing to give online

teaching a try in support of MSU's online Master of Arts in English program, I of course agreed, secretly skeptical. I wondered about such a prospect's efficacy but more, my ability to facilitate learning via a Blackboard-based course. As with my former college teaching and group facilitation work, I would travel a well-worn path to arrive at the same successful place in a virtual environment. I did not, however, arrive at this place by myself. My digital- and tech-savvy co-authors offered the necessary signposts and equipment, such as online course design trainings, digital media tools, and technology workshops. They also enthusiastically encouraged me along the journey.

First, imagine 20 middle school students gathered on a crisp March morning in a Kentucky forest. Imagine a wide path through cedars. Imagine a "ropes course" along the way. Imagine that you will be facilitating both this group's "goals" (as communicated by their leader, either a teacher or youth minister), as well as their harnessed and safety-wired transport through obstacles built into trees forty feet from the ground. They are distracted, hormonal, and perhaps needless to express, hard to keep focused.

These ramped-up mornings are the foundation for what eventually became my expertise in online collaboration and community building. More specifically, my training draws on Project Adventure's classic tenets of the Full Value Contract (FVC). The five major agreements, which have been widely adopted and used with students and groups in various team contexts, include some version of the following criteria: 1. Work together as a group. 2. Respect one another (including no devaluing of self). 3. Create and maintain a safe environment (physical and emotional). 4. Give and receive honest feedback. 5. Have fun! (Project Adventure.org). All participants were required to agree to each by unanimous show of hands before beginning their challenge course experience with me as guide.

I ran through the FVC with too many groups to count. As a result, challenge course facilitation became the foundation for how I worked with groups. These tenets automatically became infused into my college courses when I first taught introductory writing classes as a graduate assistant. As I had done in my twenty-something days as a challenge course facilitator, I once again learned to step out of the spotlight. I acted as a supportive guide

rather than all-knowing leader. I was practicing pedagogy supported by Paulo Freire before I knew of his learning theories. I valued students' experiences of learning within a community, and strove to place students in the center of my classes, rather than enact what Freire has termed "banking," which involves viewing students as objects to be filled with deposited knowledge (32).

In spring 2013, after teaching online classes that lacked the collaboration and community that I easily build into face-to-face courses, I taught two sections of a graduate writing theories course that included productive collaboration and a community of support. These characteristics developed because I engaged in professional development in how to better design online courses, one of which was a Quality Matters workshop that co-author Ericka, facilitated. I also modeled my revised course after practices that I experienced as a student in the Quality Matters Peer Review and the Online Collaborative Experience online courses.

As a result of these positive experiences, two especially meaningful characteristics developed in those online Theories of Teaching Writing sections. I devoted more time to respond to students individually from the beginning of the class, as well as created professional and personal spaces for the community to develop on its own. For example, I responded to everyone's individual Blackboard forum introduction posts within 48 hours of the date that they were due. Additionally, the community forums that I created for students included "Aha Moments," "Job Market," and "Professional Documents." These self-explanatory titles connected to digital spaces where students could post experiences and items relevant to their aspirations and interests as graduate students, teachers, and administrators. As is noted in the article "Using Digital Communities to Enhance Student Persistence and Retention," the authors cite "interaction with faculty" and a "shared sense of community" as among the most important qualities related to student retention (Layne et al. 142-43). This class became and remained a place where students could share and check in with one another, ask questions, and even vent. Compared with previous sections, fewer students dropped the course.

Of no surprise, collaboration and community building are cited as among characteristics of the "best" college teaching practices in Dr. Kenneth Bain's 2004 study as summarized in *What the Best College Teachers Do*. Bain's data were collected from

diverse institutions (private to open enrollment) and cover around 70 teachers. In the section “What Do They Do When They Teach,” the claim is put forth that the best teachers create a “natural critical learning environment,” which includes “challenging yet supportive conditions in which learners...work collaboratively with others” (Bain 18). This idea is threaded through the text, including a later discussion about how to conduct discussions, how teachers read discussion and participation, which positively speaks to a collaborative and community environment in college classrooms (Bain 119). My experiences echo these claims, and as I developed as a face-to-face instructor I strove to accomplish the same within my digital classrooms. Students were able to know one another, and me. I also guided their interactions toward respecting everyone’s ideas and encouraging a diversity of responses to course materials. This commitment harkens back to my days as an outdoor adventure facilitator, and doing so in digital spaces can call for more time and focus, but pays off. As cited in “Maximizing Collaborative Learning and Work in Digital Libraries and Repositories,” the importance of community building through features of quality face-to-face collaboration include “people who do not know one another...[sharing] potentially diverse and novel insights, ideas, and expertise” (Hai-Jew 181). Students within our community felt free to disagree with readings, my ideas, and one other, as well as ask authentic questions, including those arrived at through critical analysis.

Drawing from my outdoor education days and the Full Value Contract, I created a student-centered classroom that fostered active, respectful, thoughtful, and fun engagement toward building a community of self-motivated learners. I align with the assertion that “[a]s a teacher you do not begin to teach, thinking of your own ego and what you know....The moments of the class must belong to the student –*not the students*, but to the very undivided student. You don’t teach a class. You teach a student” (qtd. in Baker 97). Additionally, Bain shares that professors who established a special trust with their students often displayed a kind of openness in which they might, from time to time, talk about their own intellectual journey, its ambitions, triumphs, frustrations, and failures, and encourage students to be similarly reflective and candid (141). I hope to impress upon readers that if I had not learned the value of collaboration and community in helping

groups set and achieve goals, I would not have appreciated and insisted on finding ways to build those concepts into my online graduate course in writing theory. To teach collaboration in digital communities such as online courses, one must understand and embrace community building and student-centered teaching. Additionally, the professional development opportunities and lessons that my co-authors provided immensely enriched my online and digital teaching practices and skills.

Digital Learning Communities of Practice

Community is a large, often universal concept with a variety of interpretations, especially in educational settings and practices. Journalist Rosie Niven, who specializes in communities and regeneration, cites Atiha Chaudry, chair of Manchester Black and Minority Ethnic network, who “has seen how people can belong to many different communities, whether based on geography, ethnicity, religion, interest, or other social factors such as disability or refugee status” (“The Complexity of Defining Community”). Due to community’s ubiquitous and abstract nature, our reflex here is not to (re)define or restate a concept with such varied understandings and characteristics. Instead, it seems useful to explain and contextualize how the idea of community as we engage with it connects with other ways into understanding community, most especially digital communities of practice. As Ericka notes below, she also engages faculty who are new to online teaching in a discussion about community that ideally helps them consider how to design an online course that values and utilizes the concept.

In *Communities of Practice*, Etienne Wenger, internationally recognized author and expert on social learning theory, asserts “The first characteristic of practice as one source of the coherence of a community is the mutual engagement of participants” (74). He adds that the community comes into existence due to interpersonal community negotiations related to its actions and what they mean (74). Wenger summarizes that:

Membership in a community of practice is therefore a matter of mutual engagement. That is what defines community. A community of practice is not just an aggregate of people defined by some

characteristic. The term is not a synonym for group, team or network. (73-74)

A community of practice can also give life to its own unique culture. According to distinguished professors of communication, Dr. Judith Martin and Dr. Thomas Nakayama, culture is learned, involves perception, values, and feelings, is shared, is expressed as behavior, and is dynamic and heterogeneous (31-37). A shared culture becomes a group experience as it is shared with people who experience the same social environments. Dr. Dawn Woodland and her co-authors reference Gabelnick et al. (1990) sharing that:

To take it a step further, a learning community provides students with opportunities for deeper understanding of materials they are learning and for more interaction with each other as well as with the instructor. (70)

In a digital world, another level of complexity is added to the equation when a learning community's social environments occur online through electronic means. A debate is ongoing about the effectiveness of online learning communities compared with those that exist face-to-face; knowledge construction, however, remains a social experience even in an online environment as Woodland cites, quoting Tu and Corry's article "Research in Online Learning Community":

From a social learning aspect, learning community is defined as a common place where people learn through group activity to define problems affecting them, to decide upon a solution, and to act to achieve the solution. As they progress, they gain new knowledge and skills. All of these activities and interactions occur in an online environment. (70)

To summarize, our understanding of and engagement with community is defined by the descriptive modifiers "digital," "learning," and "practice," including the associated concepts connected with each term as related in this section. The communities we refer to exist online; mutually engaged students populate them or participants sharing purpose, learning. They also require practices that include a heterogeneous sharing of ideas, social opportunities, and other interactions with an instructor and

each other in common digital spaces. Finally, the communities we strive to create in online classes (in large part through collaboration) can often be defined by a culture created from experiences of the community as it develops.

**Ericka: Practical Advice for Online Collaboration from an
Instructional Designer's and Student's Perspective:
Tools, Best Practices, and Experiences**

My passion for collaboration can be traced to grade school days in Georgia. As an only child for ten years, I was often excited by the idea of working in teams toward a specific goal. Knowing that I, as an individual, did not need to know all of the correct answers because I was part of team lessened my educational performance anxiety and made school seem less threatening. In this context, my expectations of learning and accomplishment shifted from individual knowledge to collective knowledge, which usually resulted in my pursuit of more complex projects.

Even today, I prefer to work and learn in a collaborative environment. I often wear two hats: instructional designer and student. As a student, I have experienced firsthand how valuable and effective community building and collaboration can be for those who interact and share an online space. As an instructional designer, I understand that orchestrating an online learning atmosphere that encourages and supports a learning community is both an art and a science that requires thought and flexibility.

As a facilitator of face-to-face, hybrid, and online courses, I am aware of how challenging making the transition from onsite classroom facilitation to online facilitation can be for instructors. As an Instructional Designer at Morehead State University, the question faculty and staff who are new to online teaching, like Ray and Carrie, most often ask is, "How do I create an online learning environment that promotes collaboration and community building when most of my students despise group work?" Typically, I respond to their question with a question of my own, "How do you currently promote collaboration and community building in your face-to-face courses?" Followed by a bit of awkward silence, we typically begin a dialogue about the similarities and differences in online communities as well as the type of community, and activities that are important to their particular course(s). The intention of this exchange is not to help the faculty or staff member

replicate online what she or he accomplishes in the face-to-face classroom, but rather to assist the online instructor in thinking about the qualities that will be important to that particular course's digital learning community.

As Carrie suggests, it is imperative for online instructors to grasp the concept of digital learning communities before beginning to design the suitable atmosphere for the course's community. Establishing a beneficial community and fostering collaboration involves much more than simply assigning group work. In fact, requiring group work is not necessary for a successful collaborative digital learning community to exist.

In addition to the conversation mentioned above, I also express to online instructors the importance of experiencing the role of being online student themselves. Designing an environment for a target audience becomes easier when an instructor knows, through experience, what it is like to be a member of that target audience. For this reason, two colleagues and I developed a three-week online course that focuses on collaboration in the online learning environment. The Online Collaborative Experience course, which received a 2013 Blackboard Catalyst Award for Exemplary Course Program, models the use of and exposes faculty to the online collaboration tools available in Blackboard. In a face-to-face classroom, students might collaborate through in-class discussions, presentations, and group projects. In an online classroom, the same activities can be facilitated with tools such as discussion forums, blogs, wikis, and video conferencing. Experiencing these tools as a student ideally allows online instructors to gain a fresh perspective on how to incorporate and leverage them in their digital learning communities. I also encourage faculty to explore other Web 2.0 tools outside of Blackboard.

The Online Collaborative Experience course is designed based on the *Quality Matters™ Rubric Workbook for Higher Education*. The Quality Matters website defines this program as “A faculty-centered, peer review process that is designed to certify the quality of online and blended courses” (“Quality Matters Program”). Of the eight general standards in the QM Rubric, standard five focuses on learner interaction and engagement. Even more specifically, standard 5.2 states, “Learning activities provide opportunities for interaction that support active learning” (2011).

Constructing a digital community to foster active learning is crucial to student-centered teaching. More, active learning involves students engaging in “doing” something. QM suggests three types of interactions: student-instructor, student-content, and student-student (see Ray’s section for specific tools). Use of these interactions should support the course objectives and be purposeful in guiding students to engaging in increasing levels of responsibility for their own learning. As online students become more responsible for their learning and participate in a collaborative and critical learning environment they often need support, and a digital learning community can fulfill this need.

As a doctoral student in the University of Kentucky’s first online School Technology Leadership (UKSTL) cohort, I can attest that digital communities socialize in highly functioning, online academic programs in educational leadership. The online faculty in the UKSTL cohort utilizes multiple pedagogical techniques that engage my peers in critical conversations. In discussion board posts, for instance, we are encouraged to appreciate each other’s perspective but challenge one another’s ideas respectfully, as well as ask probing and clarifying questions. As a result, we engage in extremely rich conversations with each other that more than likely would not have occurred in a traditional classroom environment. For example, one question during the Spring 2013 Digital Age Learning Culture course prompted 147 posts from a mere eleven students and one instructor. These online discussion boards are akin to engaging in ongoing conversations without the need of the same physical space and time constraint.

Outside of these Learning Management System (LMS) discussions, the UKSTL faculty also encourages the use of several Web 2.0 tools including Google Docs, Facebook, Twitter, Tumblr, and Google Hangout. Use of Web 2.0 tools can often blur the lines between academic work and personal life. I must admit that initially I was quite hesitant to allow my classmates into my personal online world outside the LMS. When debating with myself about the level of access and openness I felt comfortable with, I was reminded of the old saying, “Don’t mix business with pleasure,” but soon decided that my engagement in the UKSTL digital learning community ventures beyond the program content and into my personal online space. As a result of this decision, the richness of my community experience developed.

My UKSTL community uses some of the same collaborative tools that I suggest faculty incorporate into their classes. Examples of these tools include Google Docs and Presentations, with which students can edit the same document or presentation simultaneously and easily share it via a hyperlink. Our UKSTL cohort also shares academically and personally through a private Facebook group with posts and comments about upcoming events and activities, relevant articles or blogs, and to ask questions outside of class. Additionally, UKSTL members practice the leadership skills that we are learning through the use of the #UKSTL hashtag across multiple platforms such as Twitter, Facebook, and Tumblr to help curate and organize posts. Several UKSTL members also contribute to a cohort blog via Tumblr.

The diversity of online community platforms as well as the opportunities to collaborate both personally and as a student in this program have resulted in a stronger connection with my online classmates than has been the case with some traditional classes and classmates. It is of significance that my development as a student in excellent online programs and classes has profoundly influenced my professional skills as an instructional designer.

Ray: Fostering Online Collaboration as an Instructor and as a Librarian

Much like Carrie and Ericka, I have undertaken the challenge of creating collaborative communities in the online environment. I have tackled this complex issue from a hybrid professional identity, as an instructor for online courses, and as a librarian who assists faculty with developing aspects of their online courses.

As an instructor, I vividly recall the process of “converting” a face-to-face course into an online version via Blackboard. The natural temptation in this situation is to ask, “What must I eliminate from the course to make it suitable online?” I vowed to avoid this pitfall and instead resolved to find methods for bringing the vitality of in-person teaching and group interaction into the digital learning community. To meet this goal, I investigated the possible ways in which interactivity and community building could be integrated into online courses. Through my research, I discovered that, as Ericka cites, according to the QM framework,

the types of possible interactivities in courses are divided into three categories: student-instructor, student-content, and student-student. Although some overlap naturally exists among the categories, I have discovered particular tools that work to foster collaboration, active learning, and cohesiveness in each of these areas. I share my favorites below.

Student-instructor interaction tools can include creating videos, blogging, and critical thinking queries. For course videos, I have used freely available software, such as Windows Movie Maker. In these videos, I not only introduce myself at length, but also provide a Blackboard course tour and review course expectations. This approach aligns with the Quality Matters General Standard 1: Course Overview and Introduction specifically, 1.1 and 1.7:

Standard 1.1 - Instructions make clear how to get started and where to find various course components.

Standard 1.7 - The self-introduction by the instructor is appropriate and is available online.

Another tool that I use, blogging, promotes student-instructor interaction by allowing immediate response and feedback on writing assignments or other aspects of the course. Blog posts can also be made visible to all class members if desired. In this way, the blog becomes a type of “community bulletin board” (thereby providing student-student interaction). Many simple-to-use blogging sites exist (e.g., Blogger.com or Tumblr.com), but the blog tool within Blackboard is more than sufficient for this purpose. I have also found that taking a critical thinking approach to online teaching, specifically using the Paul-Elder model, is an excellent method for promoting interaction between student and instructor (*Foundation for Critical Thinking*). Using this model, I challenge students to think critically relative to specific queries about Assumptions, Information, and other elements of the Paul-Elder model.

Student-content interaction tools can include: SoftChalk, Camtasia, multimedia, and course-specific software. MSU holds a site license for SoftChalk (Softchalk.com), an eLearning development tool that aids in promoting student-content interaction such as quizzes, drag-and-drop interactions, and surveys about content and concepts. I will freely admit that, early on, my online courses consisted of mostly static, PowerPoint-driven delivery of

content. Once I converted the course to SoftChalk, however, the level of interactivity (and the positivity of the course evaluations) increased dramatically. Among other SoftChalk features, students can be assessed on content while reviewing it, with quiz and other grades imported directly into a class Blackboard grade center. SoftChalk also allows for the easy integration of multimedia elements such as videos, images, and sounds. These multimedia elements can come from outside sources or can be self-created specifically for the course. On a related note, if you choose to use multimedia within other online tools, in the process of creating effective multimedia, a screen capture program such as Camtasia (free trial at Techsmith.com/download/camtasia/) is effective for the creation of visual representations of ideas rather than textual explanations alone. Other recommended screen capture programs include Jing (Techsmith.com/jing.html) and Screenr (Screenr.com).

Of note is that one student-content challenge in online courses is providing access to course-specific software that is equivalent to the access enjoyed by on-campus students. At MSU, our IT department has provided a solution to this problem. MSU has created a cloud-based system for accessing properly licensed software via a virtual desktop interface (VDI). With this system, distance students can use the same software programs that are available on campus, allowing them to interact with course content in a more analogous way.

Student-student interaction tools include: Animoto, discussion boards, wikis, and peer-reviewed assignments. Animoto (Animoto.com) is a web-based program that allows even technology novices to easily create short slideshows for free. Asking students to create and share autobiographical slideshows at the beginning of a course is an excellent way to promote community by encouraging students to learn about each other. Using this method also satisfies Quality Matters General Standard 1: Course Overview and Introduction, Standard 1.8 - Students are asked to introduce themselves to the class.

Discussion boards, if monitored and structured properly, can provide the lively, meaningful, and critically analytic back-and-forth exchanges of face-to-face courses. Proper board management is key. Clear parameters and criteria for student participation (due dates and times, word count, amount of posts)

need to be established, and the instructor **MUST** play an active role in keeping the discussions fueled, focused, and interactive. Wikis provide a slight variation of this type of discussion board interactivity. It is well known that wikis can be edited by all members of a specified group, a fact that makes them perfect for promoting student-student interaction. Most wikis also allow instructors to easily determine which group members have contributed content to the overall project. Many free options exist, including Wikispaces (Wikispaces.com), but again, the Blackboard wiki tool works perfectly well.

Discussion boards and wikis can certainly function as forms of peer review, but a more direct way to promote this interactivity is to build assignments in which peer review is a graded part of the assignment composition process. This approach can be especially useful for writing assignments of any type. In one of my online courses, for example, I require that students create text and images for a website, then review each other's content within groups. The quality of the written material increases substantially as a result of this peer-review process.

Outside of teaching online, I have tried to bring the knowledge gained from facilitating these courses into my "day job" as a librarian. I have found that, as Carrie and Ericka have stated, behind every newly created digital learning community is an existing learning community. One could definitely express that "It takes a village" to serve the needs of online students, and librarians are often an essential foundation of that village. Because my position requires a good amount of focus on technology and instruction, I have attempted to assist MSU faculty in bringing interactivity and dynamism to their online courses.

I use a collaborative approach because I see myself as not only serving the library, but also as a member of a larger academic community. Collaborating with knowledgeable, progressive, and open colleagues, such as Carrie and Ericka, results in ideas that directly promote student success. It is my strong belief that if we practice collaboration and community in our daily work, we can in turn help each other build successful digital learning communities.

Pitfalls and Successes

For instructors with little or no experience in online teaching (like Carrie a few years ago), but who want dip their toes

in the online community and collaboration waters, we list the following pitfalls as we have experienced them (Successes and tips follow):

1. Do not underestimate the time investment that a quality online course requires, especially one that integrates collaboration and community building.
2. Conversely, avoid over extending yourself by investing too much time on tasks that can be completed more efficiently, including through the effective use of LMS platform tools. For example, Blackboard includes a grading center, as well as individual assignment rubric tools. You might also allow the community to develop on its own without micro-management. You do not need to weigh in on every post, comment, or question a student shares. Often, students in online courses answer class concerns before instructors do.
3. Do not set a class up like a correspondence course (or PowerPoints with quizzes), and then check out for the semester, allowing it to proceed on its own.
4. Avoid biting off more than you can realistically chew, as in filling a course with lots of technological bells and whistles without considering how they relate to course goals, learning, and assessment, especially if you are new to online teaching. Proceed slowly, and with purpose.
5. Be aware of technology learning curves and media problems (glitches, dead links, unclear user instructions, and media and software incompatibilities).
6. Is your course user UNfriendly for various reasons including but not limited to: Lack of specificity; too much information; information that is difficult to locate; excessive rigor.

The six items listed here are meant to prime those new to, or a bit intimidated by, online teaching and community building with reflex responses that we view as common concerns. These items include challenges that we had, and continue to overcome, when we design and facilitate distance learning. In other words, you are not alone, and we can help!

Characteristics of Successful Online Learning Communities

As we further reflect on our various experiences with collaboration and online teaching, many of our *successes* relate to methods that also promote community in face-to-face classes.

Additionally, we share the value of placing students at the center of our classrooms. When Ericka posed the following question for our considerations here, “How can we distinguish a successful online course and community from a less successful one?” our responses include:

1. Students actively participate in the community within and outside of assigned tasks. Instructors participate more, too. For example, Carrie checked in on her recent online graduate theories course more often than she had for previous online sections because the community had become lively and because she had experienced the benefit of doing so as a student in an excellent professional development online course.
2. Students voluntarily offer the instructor and classmates either public or private positive feedback. Carrie’s students sent emails expressing their appreciation of her quick responses to questions posed in FAQ forums and the individual attention she gave to grading essays.
3. Less attrition occurs.
4. Students often ask questions about class and assignments of instructors and each other, and with the implied confidence that they will receive a timely, reasonable response.
5. Students often help one another through responding to posts, sometimes before an instructor does.
6. An overwhelming majority of students seem to have a clear understanding about class requirements and expectations.
7. Students understand the differences between various programs and technologies, such as Softchalk and Microsoft Office, and are not overwhelmed by the technology requirements of the course.

These seven signposts of success draw upon our experiences and expertise in community building and collaboration. They touch on The Full Value Contract (Carrie), or connect with Quality Matters certifications (Ericka and Carrie), or come into fruition through the use of collaborative tools like blogs and wikis (Ray and Ericka). Ergo, we also want to provide a list of *how* we have created community as facilitators, as well as the characteristics that we have experienced and adapted as participants in successful learning communities.

How to Create Successful Online Communities

1. Actively participate and provide individual feedback to students in a timely manner.
2. Create and clearly post detailed, straightforward course documents in places that will be easy for students to find and access.
3. Create opportunities for structured, detailed, peer review, including encouragement and commentary on assignments such as web pages, narratives, auto ethnographies, and researched essays. Ray, for example, requires students to view each other's web pages, and Ericka's online course requires students to write and view each other's video auto ethnographies on YouTube. Carrie, too, requires students to post, comment on, and complete peer review guideline sheets related to essay assignments.
4. Once students have introduced themselves, require each student to choose one or more "critical friends," who agree to be a class buddy in brainstorming, critiquing work, and anything else course related.
5. Complete a reputable online course design certification (Quality Matters, Illinois Online Master Teacher Certificate). This professional development opportunity has been critical to Carrie's online teaching skills, and her first Quality Matters certification led to subsequent and related online professional development opportunities.
6. Participate in an online course as a student.

NOTE: Both a positive as well as a negative online course experience can provide instruction in how to best teach online. This, too, was critical for Carrie's online teaching, which changed drastically as a result of her participation in an excellent online Quality Matters Peer Reviewer certification class.

Final Words

We recognize that you may be reeling at the number of potential tools to explore and the ideas about collaboration that we present. You may also be asking yourself how much the Quality Matters team is paying us to promote their services. Given that they are a reputable, faculty-driven, and award-winning non-profit organization, we feel confident in citing their materials and classes. To incorporate some of these methods, give one idea or tool a try. Go slowly. Lean on your institution or community's experts and

resources. Choose one aspect of your online course community that could be further developed, and work on that aspect. Recall your best experiences as a student, and successes as a facilitator of learning, and build from those moments. Finally, remember that technology often creates a learning curve. The challenge is to become comfortable and adept at effectively implementing these ideas to promote student success, an outcome that we believe can occur within thoughtfully constructed digital learning communities.

Afterword

Practicing what we preach: At Ericka's suggestion, we used Google Documents in Google Drive to collaboratively write and edit this article. She uses this tool often at work and in class. Carrie had used this tool only twice previously, and Ray had not used it in this exact manner. We found the process of composing and editing a shared file very straightforward as well as effective despite our varying levels of expertise. By using a Google Document as our primary authoring tool, we were able to view each author as she or he was working on the article and chat simultaneously via the instant messaging tool. Another benefit this tool provides is the ability to view the revision history. We share this fact to provide an example of yet another tool and application that promotes collaboration and that worked well for us within our informal, small writing community.

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STUDENT PERCEPTIONS OF TECHNOLOGY IN THE CLASSROOM: A FACULTY AND STUDENT COLLABORATION

by

Monica Flippin Wynn, Ph.D.*

Abstract

This research examined student perceptions on technological tools integrated into the classroom. The purpose of this study was to determine how students view the integration of technology in the classroom and what technological tools they are most prone to support. There were a total of 30 participants, beginning freshman to graduating seniors, enrolled in freshman seminar and communication courses at a Historically Black College and University in the southern geographic region of the United States. The research utilized an inductive thematic approach based on student self reporting on individual perceptions and concerns. Among the key findings in this research is that, although students value the technological tools integrated in the classroom, particularly those tools that provide visual representation, they believe teachers should consider student perspectives when incorporating new technologies into the curriculum to assure all students are familiar and proficient in working with them.

KEY WORDS: Technology, social media, student perceptions.

Introduction

The college classroom has changed significantly in the last ten years. It may look the same and occupy the same physical space, but the classroom instruction has been completely revolutionized. In most cases if the student has a notebook, it is not the one found in the local discount store, but an electronic version that connects the student to a milieu of applications, social media, and Internet options.

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Technology in the Classrooms

Throughout academia, the key priority continues to be one of adapting the classroom to effectively engage digital learners. Universities have continued to invest in technology to support the many technological demands of a growing student population and academic environment, including reviewing what technology faculty, staff, and students utilize and its perceived merit. However, Ertmer and Ottenbreit-Letwich contend that universities and colleges should acknowledge the significance of technology to effective teaching instead of emphasizing it as a supplemental tool for classroom instruction. Additional research conducted by Dahlstrom (2012) found that blending different platforms in the classroom can make a positive combination.

So the digital technology has arrived on our college and university campuses, and administrators throughout the country are reassessing how to productively integrate the digital platforms into the classroom learning environments. These digital tools are normally defined as computer-based hardware, software applications, and social media utilized in the classroom (Carle, Jaffee, & Miller, 2009). The motivation for these all-encompassing transformations is to discover effective methods to connect with and engage the new type of student—the Digital Native—arriving on our college and university campuses.

Marc Pensky (2001) argues that the “Digital Natives” popping up in the nation’s college classrooms are a new breed of student so different, in fact, that they may have spent only five thousand hours reading, but they have logged more than thirty thousand hours watching television, playing video games and surfing the Internet (8). These new arrivals have been raised on a daily dose of these new technologies, and it would seem to follow that they would expect their classrooms to be technologically outfitted and their teachers to be technologically savvy (McCabe & Meuter, 2011).

As a result, we have an assemblage of educators with very diverse technological capabilities, rushing to integrate some facet of digital technology instruction into their classrooms. McCabe and Meuter (2011) state that with more and more classrooms being technologically enhanced, teachers are expected to utilize institutionally mandated course management software; in addition, they are strongly urged to also include videos, blogs, podcasts, and

social media for optimum student engagement. Accordingly, research asserts that incorporating these and other technological tools in the classroom can increase student engagement and learning effectiveness across disciplines (Ertmer & Ottenbret-Leftwich, 2010; Kazley, Annan Carson, Freeland, Hodge, Seif, & Zoller, 2013; Ranasinge & Leishe, 2009).

Yet not everyone has jumped on the proverbial bandwagon for the overwhelming invasion of technological infusion into our classrooms. For instance, DeMillo (2013) is cautious about advocating the importance of technology to reform student learning. He states, “If technology could help rebuild public confidence it would have already happened” (Para. 4).

Despite the naysayers, there is much excitement and conversation within academic communities about the extraordinary options available for incorporating technology into learning spaces; however, the target of these educational transformations seems to have been omitted from the discussions.

There is a dearth of research focusing on actual effectiveness of the instructional technological expansion within the classroom, and even more perplexing is the lack of investigation on student perceptions toward the cavalcade of technological innovations introduced into the classroom. There are explorations, yet there are very few that provide detailed descriptions on what students want in the classroom and on which methods engage students the most.

Purpose Statement

The idea for this research began with this author’s initial attempt to incorporate connectivity and technology into the instructional classroom. Three years ago, as a soon-to-be-minted Ph.D. in a full-time teaching position, I had done extensive research on the Digital Native and was primed to establish my curriculum to engage the next generation of students I would be teaching. The courses included creating blogs and posting on Twitter and Facebook. I videotaped lectures, archived them in YouTube and on Podcasts, and created course websites. Yet I was disillusioned by the initial lack of enthusiasm and willingness of the students to acclimate themselves to technology. Research Pensky (2001) had stated that if faculty were going to be effective

in teaching this new generation, they would have to reconsider their methodology and their content.

After the first two weeks of classes, it became apparent that I had overlooked something, so I decided to just ask the students about the teaching methods and the technology in the classroom. Subsequently, what one student revealed became the basis for this research. The answer was so apparent that I had plainly ignored it. One student, Jaylen, simply said:

To find the perfect mix of technology, the best thing a teacher can do is ask the students. All students learn differently. Some students are hands-on learners, while others learn better by hearing lectures. If a teacher asks the students in their class what they prefer and actually take the things said into consideration, they could probably get a lot accomplished.

Dalstrom (2012) found that students are quite clear on how they view technology in the classroom. In fact, Dalmstrom argues that understanding what technologies are most effective and motivational for students can lead to into decisive instructive applications.

Hence, the significance of acknowledging student perceptions has clarified the following research questions for this study.

1. What do you believe is the perfect mix of technology in the classroom based on your experience?
2. What methods will keep you engaged in your courses?
3. What can your teachers do to find the ideal mix of technology to keep you engaged in the classroom?

Methodology

This examination utilized qualitative research to identify views and perceptions of technology in the classroom. Nkwi, Nyamongo, and Ryan (2001) suggest that qualitative research is most often any research that does not rely on or produce numerical values. Qualitative research does not rely on statistical concepts and generalizations, but instead depends on the essence and the nuance of the narrative based on participant experiences.

The research design employed qualitative surveys utilizing an inductive thematic approach. Guest, MacQueen & Narney (2012) outline the applied inductive approach as

A rigorous, yet inductive, set of procedures designed to identify and examine themes from textual data in a way that is transparent and credible. Our method draws from a broad range of several theoretical and methodological perspectives, but in the end, its primary concern is with presenting the stories and experiences voiced by study participants as accurately and comprehensively as possible. (15-16)

In addition, a questionnaire requesting basic demographic material also was dispensed.

Participants

This research was conducted over two academic semesters. The 30 participants ranged from beginning freshman students to graduating seniors. Students were enrolled in communication and freshman seminar courses at an urban Historically Black University in the southern geographic region of the United States.

Research Procedures and Protocols

At the beginning of study, students were provided with both a paper instrument, which they could complete and return, and the link where they could find the materials, complete, and send to the investigator via email or link on Twitter. The materials were also available on the class website. Included in the research package was a university IRB informed consent form, which students had to sign, date, and return. In addition, they also had to complete a permission form, which gave the investigator permission to utilize the responses in this research. Finally, a short demographic survey was included; however, completion of this form was not required.

Validity

Students were asked to respond honestly and openly to the research questions. To avoid student anxiety and concern of grade retribution for possible participation in this survey, the research project participation became an extra-credit option. Previous

research has considered (Rosenthal & Rosnow, 1975; Padilla-Walker, Thompson, Zamboanga, & Schmiersal, 2005) options employed by academic institutions that provide extra credit for research participation. This participation not only provides educational research expertise and honing of critical thinking skills for undergraduate students, but also provides a valuable resource for faculty researchers. Although the participation in this research project was voluntary, it was attempted by more than three-fourths of the potential student participants.

Data Collection

Data were collected and coded based on the three study research questions. In the findings illustrated in the next section, the responses classify the perceptions students have on technology in the classroom and how open interaction and collaborative dialogue between teacher and student can inform the discussion and add to the curricular pedagogy.

Findings

The student responses collected on technology in the classroom are illustrated in this section. Students' responses are provided in their entirety, captioned with appropriate citations. Pseudonyms are employed to protect the anonymity and confidentiality of the students.

Research Question 1: What do you believe is the perfect mix of technology in the classroom based on your experience?

Based on the overall student responses, technology is a valued addition to the classroom. Students appreciated the variety, the flexibility, and the convenience of some technologies that are utilized in the classroom. Blogs were considered options of expression and opportunities to communicate the students' grasp of the course material. Shannon explains:

I feel that blogs are great for teaching because they allow the instructor to see what the student really thinks or how they really feel. Teachers can assign topics and the students can freely discuss them.

A key finding throughout these student responses was the appreciation of the visual representations. Incorporating visual content into a lecture or on a website provides students the

opportunity to get a more concise understanding of the concept or course content being discussed. Several students indicated the ability for visual illustration as the most important technology addition to the classroom. For instance, Jeremy suggested, “If a teacher uses visuals or gives examples through storytelling, then my brain recognizes the information easier.”

Crystal is more illustrative of what she believes is the right mix of technology based on her perspective, which includes visual signs. She wrote that,

The perfect mix of technology would be for the teacher to lecture on the information that students need to obtain and show a web video that enhances the lecture. The professor can then have students describe their understanding of the lecture in a short web video.

The response suggests that the visual technology utilized by the teacher can also be employed by the student to demonstrate content knowledge.

Student responses also illustrated that they were familiar with some of the new technological innovations in the classroom and understood they would add substance to the coursework. Sean believed clickers could be added to some of his courses. He stated,

I would also like for them find ways to use the clickers and also the Internet to correlate with their lectures. An example would be when talking about a certain subject, trying find an article on the Internet and pulling it up on the Smartboard so that students can see it and engage in discussion.

Students were also interested in finding interesting and substantive ways in which to include social media into their classrooms. Kayla stated,

I think a good example is using Twitter and Facebook within some of the classroom projects. Ask questions and have them answer on Twitter or Facebook or engage in discussion on these sites instead of writing with a pen and paper. This type of technological interaction helps the teacher in class participation, but it also caters to the students’ desires to participate on these type of sites and makes them look at school work in a different way.

The addition of social media could encourage student classroom participation and inform how students approach their school work from a different point of view.

Student responses also included YouTube, PowerPoint, and streaming video as possible options to incorporate into the classroom. But there were also students who were apprehensive about the incorporation of most technology in the classroom. Patricia acknowledged that,

To be honest I don't really like it when technology is pushed upon me because I am not really quick in that area yet. They should just keep in mind that not everyone is big on technology.

This response demonstrates that while the majority of the students may be more inclined to want some form of technology in their classroom instruction, assuming that every student does and more importantly, is proficient, can affect that student's learning experience in the classroom.

Yet overwhelmingly students wanted some form of instructional technology in their classrooms. Andrew argued that,

Times are moving forward, and technology is what is on young people's minds today. This is a digital era, and the more gadgets and technology we use, the more we can learn.

Research Question 2: What methods will keep you engaged in your courses?

Most of the student responses for this question included general practices that students would like teachers to include to keep them involved and engaged in the classroom. Interestingly enough, technology was not predominately seen as a consideration for this question. For instance, William affirmed that,

Methods such as class discussions, research, presentations, and projects related to the real world --depending on the topic--will keep me engaged in my course and classes.

Another student, Robert, agreed and added:

I prefer a professor that uses methods such as: class discussions, debates, inviting professionals to speak on topics related to course studies, and allowing the students to actually teach what they know to the

professor and students to ensure understanding and knowledge on that topic.

Yet some students could envision that technology would only enhance current curricular practices. Anthony asserted he was engaged in the classroom,

When teachers bring the excitement of the world wide web, the media, and other modern technology in combination with traditional classroom lectures.

Research Question 3: What can your teachers and professors do to find that perfect ideal of technology in the classroom to keep you engaged?

Student responses ranged from really simple solutions to responses with several different strategies. Mario gave a concrete option for teachers to consider before adding new technologies to a course. He stated,

The first thing a teacher could do is survey the class. This would allow the teacher the opportunity to find out which method works best for the students. The teacher could then include both technological and traditional methods to make it a better learning environment.

The findings from this study suggest that students have real concerns about accessibility, and conducting a survey at the beginning of a class can help to ensure all students can participate effectively.

Education and updating skills was a popular response, indicating students were concerned about the latest innovations and the correct ways in which to integrate them into the classroom. Shelia wrote that,

Professors can look on YouTube and Google to look at new ways that teachers learn how to have a perfect mix. Go to teaching workshops on how to improve teaching methods being held on other college campuses.

Whereas Latoya suggested a more traditional venue of academic support for teachers. She said,

Teachers should be forced to take a technology class prior to the school year beginning. Technology changes every day. Teachers should be familiar

with the latest technology, especially at the rate we are going with computers and apps and things.

Students want technology in the classroom, but they want the teacher to be proficient and current above all for the technology to have relevance with the course content.

Finally, student responses suggested students were open to new options and wanted teachers to try out the new technologies in the classroom. Evette wrote,

Technology is interesting to students, so teachers have to try new things and see what works. They can implement different ways to teach as well as creating workshops of some kind to see what the students like the most.

Conclusion and Future Implications

In this research project, student perceptions of technological integration into the classroom were investigated utilizing students enrolled in several seminar and communication courses. The initial purpose for conducting this research was to determine why there was such lackadaisical student support and participation with the technological tools included in the author's courses. The data collected were analyzed utilizing an inductive thematic approach. The findings of this research provide some awareness into student perceptions and confirmed the importance of promoting interactive collaboration between students and teachers.

Most students want and anticipate technology in the classroom. They expect tools that will assist with understanding and comprehension of course content. Visual representations, blogs, YouTube, and Wiki pages are applications that students anticipate to provide visual illustrations and help students not only express themselves but also communicate their knowledge attainment to peers and teachers.

Students want teachers to incorporate certain social media, but with purpose and connectedness to the curriculum. Twitter, specifically, was mentioned as having numerous uses in the classroom, including increasing student participation and integrating tools that students utilize in their personal spaces.

It was not surprising to discover that not all students want the plethora of technological tools to be inserted in their classroom.

The questionnaire allowed students to indicate accessibility and capability concerns, and illustrated that additional training or different options might be conceivable in these circumstances. Additionally, students who were not eager to use technology in the classroom have dropped or changed classes because they were expected to have a certain aptitude and did not want to be embarrassed or fail the class.

Students today still consider technology basically a tool in the classroom and continue to appreciate interpersonal interaction with teachers, in-class presentations, and, most importantly, real-world applicability to course content. Students want teachers to interact and make use of the technology to supplement their expertise and exchange of ideas.

Most students specified that faculty should consider communicating with students initially on integrating technology in the classroom. A simple survey would allow students to share with teachers their perceptions and include their concerns and other issues that they may not be comfortable sharing in open classrooms. Yet simply asking students would engage discussion and increase the student-teacher collaboration. For example, if an instructor is going to use clickers in the classroom and is going to require students to purchase them, it would be a good idea to discuss that requirement with the students.

The study provided some concrete examples of what technological tools students want in the classroom; however, there were some notable limitations in the study design, including the research questions. The vagueness in the research questions may have been responsible for the low completion rates by study participants. Future research will most definitely incorporate a mix-methods approach, in that both the descriptive and frequency of practice could be examined. However, as an attempt to become more familiar with the views and perceptions of students, this research project accomplished that objective.

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MICROCOMPUTERS AND COMPOSITION: A RHETORIC OF CHOICE

by
Chet Breaux, M. A.*

Abstract

Recent scholarly efforts aimed at teasing out the complex mediation between composer, text, and interface have challenged the traditional link between author and text. From analyzing technology in relation to narrative, to complicating our understanding of intellectual property, platform studies has, and will continue to be, a central aspect of composing with technology. In this vein of scholarship, however, problems arise in relation to composer and text through technological access and interface choice. These choices are decidedly rhetorical in nature, from both the design and use perspectives. The emergence of microcomputers, whether fully functional Android platforms housed in a dongle or other Linux-based solutions, presents a new opportunity, and challenge, for composing with technology. In this project, I examine the Raspberry Pi, a credit-card-sized Linux computing platform. At 35 USD, the Pi's low price challenges the expensive entry point for computing. The Pi's variety of outputs, portability, and flexibility allow it to contend with more traditional platforms used in the composing process. I use the Pi as an example device to argue that interface choices should be rendered more visible and more accessible within a writing process. First, I argue concerns over copyright and freedom over our own work should extend fully to operating system and software choice. Many of our student composers mistakenly link polished product to polished software, and this notion extends, often uncomfortably, into their writing processes. Open Source alternatives often appear messy and complex, yet I argue this mirrors the same complexity of a writing process. Second, I argue technological barriers should be seen as problems located within a writing process rather than a secondary concern, and we can view software and platform choice as a kind of pre-writing decision and a rhetorical choice. Third, the

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development of a heuristic to solve problems in an Open Source platform can work in relation to developing writing heuristics, and facilitate engagement with a broader notion of text, one that includes possibilities created or denied based on software and hardware. This low-cost hardware and software solution opens possibilities for increased access and decreased dependence on institutional funding, a growing concern at this moment in particular. Exposing writers to these alternatives expands the rhetorical stage upon which composing choices occur, thus allowing technological choice to extend throughout the writing process.

Microcomputers and Composition: A Rhetoric of Choice

My first computer was a Packard-Bell. It was an all-in-one, but looked nothing like the svelte all-in-ones with touch screens, minimal wires, sleek edges, and metro. It had a CRT display, two large speakers running down the sides, a CD-ROM drive, and a 3.5 disk bay. The keyboard and mouse were plugged in with their old ports (no USB here). The monitor had separate controls for contrast, tint, and sharpness. The thing made ghastly noises constantly. The processor and disk seemed to moan and groan under the yoke of a game of solitaire. My PC came loaded with the newest innovation, a thing called Windows 95. It supposedly made computing much easier. I'm still unsure as to why my parents purchased this monster, and when I asked them about it, they just shrugged and explained that they thought it would help us with school. It did, in a way. Between my brother and myself, we typed a total of two term papers in Microsoft Works. We never used the Encyclopedia Britannica, included with the machine as a CD-ROM (our teachers insisted that we use print encyclopedias only, of course). Other than those noble academic pursuits, my Packard Bell mostly sat unused, until I learned that one could play games, like not-solitaire games, on it. My mother bought us a copy of *Earthworm Jim*, and it could run only through DOS. Thus began my pursuit of digital literacy. I studied the game manual to learn the command lines necessary to run the game, and I was fascinated by this black window, this very real window into the computer itself. The computer did very little, so I had to learn *how* to make it do what I wanted. I grew up in an interesting time. Some of my earliest memories involve the digital, mostly playing *Super Mario*

Brothers, *Duck Hunt*, and *Excitebike*. From the beginning, my world was partly digital, but not wholly. I was a “native” but also a “migrant.” While I grew up with an NES controller in hand, I also watched VHS tapes. While I wrote term papers on my Packard Bell, I still hand-wrote my drafts. While I had a computer, it did surprisingly little. I believe that many of us can’t be described in simple terms of native or migrant, or immigrant, or any other geopolitical metaphor. The role technology plays in our lives is slightly more complicated than that. My first computer served as a frustrating initiation into the realm of the digital, I look back and realize that surprisingly little has changed. Technology has accelerated, and continues to do so, at a rapid pace, but we have changed remarkably little.

Hawisher and Selfe identified the paradox of technological optimism in the seemingly distant 90s, a time when computers were poised to dramatically revolutionize the teaching of, well, everything. Hawisher and Selfe caution against the overwhelmingly positive rhetoric surrounding computers and writing, and argue that “along with becoming acquainted with current composition theory, instructors, for example, must learn to recognize that the use of technology can exacerbate problems characteristic of American classrooms” (35). Problems of access still plague many school districts across the nation, but we must also be cautious of ignoring problems inherent in our teaching strategies. We must recognize that, in many cases, “computer use simply reinforces those traditional notions of education that permeate our culture at its most basic level: teachers talk, students listen; teachers’ contributions are privileged; students respond in predictable, teacher-pleasing ways” (35). Even in research focused on “technological” literacy narratives (Kirtley), problems of positivism are still pervasive. What is a technological literacy narrative? How does it function in an environment where traditional teaching practices still reign?

Going Micro

In this project, I examine the Raspberry Pi, a new microcomputer manufactured to help better educate contemporary students in coding and technological literacy. I present the Pi as a legitimate object of study and as a possible device for inclusion in composition classes. First, I will examine the Pi, and explain some

of its key limitations before moving on to present implications. Micro computers are not new. In fact, Hawisher and Selfe use the term in “The Rhetoric of Technology and the Electronic Writing Class”: “Since the mass production of the first fully-assembled microcomputer in 1977, technological change has influenced not only the ways in which we write but also, for many of us, the ways in which we teach writing” (35). Their use of microcomputer is noteworthy. While Hawisher and Selfe refer to advent of the personal computer, a computer that did not require an entire room to operate, we can see the framework for an acceptable definition of microcomputing in the present. Computers have become significantly smaller since 1977, and, of course, most of our smartphones can now process data on par with desktop computers. The tablet and smartphone revolution has pushed devices into increasingly smaller form factors, most of them touch-enabled, but, very recently, a new kind of microcomputer has surfaced, one that forgoes touch and gestures toward a replacement for more traditional desktops.

The Raspberry Pi’s newest model, the “Model B” is a credit-card-sized computer that plugs into your TV and a keyboard. It’s a capable little PC which can be used for many of the things that your desktop PC does, like spreadsheets, word processing and games. It also plays high-definition video. We want to see it being used by kids all over the world to learn programming. (<http://www.raspberrypi.org/faqs>)

The model B comes equipped with 512MB of RAM, and an ARM processor, making it a capable platform for most basic computing tasks. The USB 2.0 slots allow for computer and mouse input. An HDMI and analog output for video ensure output to a broad number of devices. It takes a standard micro-USB power supply, and also has a port for an ethernet connection. The Pi comes with no operating system, and an SD card must be purchased separately before installing a Linux based OS (though many enterprising individuals are now selling cards preloaded with an acceptable OS. The most attractive aspect of the Pi is its price point; the model B costs only 35 USD plus shipping.

RASPBERRY PI MODEL B

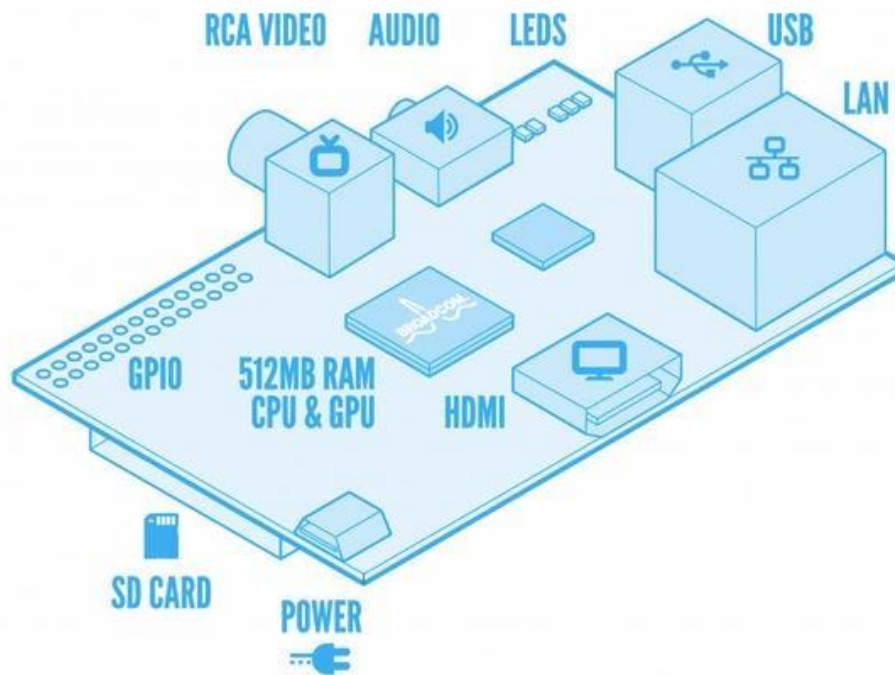


Figure 1. Raspberry Pi

2. The Android Contenders

Another strand of microcomputers is also gaining attention in the tech sphere. These are also small, extremely portable, functional, and relatively inexpensive. These dongles, like the one pictured below, are commonly referred to as Android mini-PCs or Android dongles. They are extremely compact, and plug directly into an HDMI on a display.

The dongle pictured here is the Rikomagic MK802IV. This particular model boasts a quad core processor, two gigabytes of DDR3 memory, and eight gigabytes of internal flash memory. The Rikomagic also has built-in wifi and Bluetooth, removing the need for cable input space. This particular model retails for 79 dollars, and turns any display into an Android 4.2 computer. The Android mini-PCs are still relatively new, but prices for older models with lower end specs have fallen into the same range as the Raspberry Pi. With these mini-PCs, no installation of an operating system is

required, and the familiar interface would no doubt seem more friendly to the uninitiated. I discuss the Rikomagic only to forward



a possibility. We often build our courses with the assumption that students will have consistent access to technology when this isn't always the case. Recently, a student came to me and explained that her laptop had crashed and she was wondering about competing solutions. I suggested the droid mini-PC as a possible solution because the student had a TV with an HDMI input. She purchased an older version of this stick along with a Bluetooth keyboard and mouse combo. The larger tech culture embedded in many college campuses will always market full-fledged and expensive computing solutions as the standard. With microcomputers currently available for a fraction of the cost of a desktop or laptop, we can now begin to urge others around us, particularly the cash-strapped college student, to consider such options.

Implications

Reshaping the Landscape

In "Teaching English Across the Technology/Wealth Gap" Charles Moran and Cynthia Selfe present a pivotal critique of edutech, one that highlights the reality that "schools primarily serving students of color and poor students continue to have less access to computers or access to less sophisticated computer equipment than do schools primarily serving more affluent white students" (48). While this trend still holds, microcomputing can function as something of a partial solution to this monumentally complex problem. While I remain skeptical that such technologies can fully level the educational playing field for most students, we can begin a process of embedding more, cheaper technology

directly into our classrooms, and better yet, into the hands of our students. Moran and Selfe argue that “educators quite properly try and level the playing field by becoming the students’ technology provider of last resort,” but this is often complicated due to the often prohibitively expensive cost of technology (49). The surge of interest in New Media study troubles me deeply. When we consider the insurmountable cost of high-end computers, equipped with the newest processors and licenses to robust media creation software, we often ignore or forget that “when we lobby for technology in our schools, we are implicitly lobbying for the removal of something else” (Moran and Selfe 49). Even technology purchased through grants must be maintained, and that money is often coming out of a budget.

Exposing students to high-end computing solutions in a classroom is also something of a duplicitous gesture. We invite them in to play with our shiny new equipment, but those computers will never leave with them, nor will the software (provided it could even run effectively on a low-end machine, license fees for something like Photoshop don’t run cheap). The high-end portion of new media thus becomes something of a temporary illusion. I argue that we should aim much lower in new media. Yet, do we just throw out these software packages entirely? Impossible. Our students are increasingly entering our classrooms with, in some cases, more technology literacy than instructors. They *use* social media. They are *on* Facebook, or Tumblr, or Instagram. Most of them have experience with Word and PowerPoint. They have grown up in an age of interface, wherein even a phone call is mediated by such designs. We need to move past a definition of technological literacy that hinges on using polished, commercial software, and “we need to recognize that we can no longer simply educate students to become technology users--and consumers on autopilot--without also helping them learn how to understand technology issues from socially and politically informed perspectives” (52). To understand the technology is wholly different.

We now live in the moment of *Kickstarter*, in a moment where DIY computing has moved out of the garage and into the market. Many of our students, armed with access to SDKs, are now creating their own apps and sending them off to the App Store or Google Play. Selfe and Moran suggest

as educators, maybe we can think--at least on an occasional basis--more about how to create increasingly effective teaching and learning opportunities with the technology we already have than about how to stay up with the very latest technology. If we were to take this direction, we'd want to say that we were educators first and technology-lovers second. (52)

I argue now, perhaps for the first time, we can be technology lovers first. While the open-source movement has been around since the advent of the PC, it has taken on a new and remarkably visible role in our contemporary technological landscape. The Raspberry Pi is evidence of this movement in action. The people behind the device specifically designed the Pi as an educational machine, a space for students to learn, but the DIY impulse surrounds this device entirely. The Pi website has a robust number of beginner guides, links to supported Linux builds, and user forums wherein people are encouraged to collaboratively solve problems. YouTube has grown significantly and now boasts visual tutorials for initial device setup and far beyond. The Pi has an active Google+ presence with individuals essentially blogging their progress through various projects (such as turning the Pi into a wireless blood pressure monitor). At the very core of this community are technology enthusiasts. Their passion for the device and for the DIY approach inevitably means these individuals are as much consumers as they are creators, hobbyists as much as teachers. With a price point of 35 dollars, why not consider staying up to date with the newest trends?

Praising the device, and using it, will not go far enough. While we should "work locally, and constructively, with the low-end technology that is out there," it will, at the moment, be "an underground technology that gets very little press because there's not enough profit in it" (Moran and Selfe 52). The democratizing impulse behind the app movement, and the crowd-sourced/funded nature of many contemporary tech innovations has done much to place alternative consumption models, and the DIY movement on the map in consumer culture. The lingering problems inherent in the university technology funding system will need to be rigorously lobbied by a new kind of academic and technological literacy advocate, one who is familiar with emerging trends in the

tech landscape, and one who knows this landscape intimately. Many

advocates for technology often have an agenda that has nothing to do with out students' learning. If one is a politician or academic administrator in this decade, it is almost mandatory to call for technology in our schools...because technology is seen as a potential quick and cheap fix for the perceived problems in our educational system. Anything associated with technology has a special glow these days. (Moran and Selfe 50)

The major tech trends, ones that are foregrounded in consumer culture, still typically require premium price for premium product, and buying into appearances can be remarkably expensive. Yet, at the contemporary moment, universities seem remarkably concerned with appearance. The master plan movement will no doubt change the landscape of many institutions, but not necessarily the technological landscape. We need to work to counteract the notion that prettier, shinier technology will work to solve actual problems on our campuses. Moran and Selfe call for vigorous opposition to short-sighted technology spending, and it appears as though our opposition has wholly failed. The case we've had to make in the past has been difficult. Trying to persuade politicians and administrators that potential investment in technological infrastructure can be negative is ultimately unhelpful. We risk losing funding for needed maintenance and purchasing of needed equipment. We also risk appearing to be Luddites. What we can do is harness the rhetoric surrounding the DIY movement and Kickstarter. We are poised, perhaps for the first time ever, to make an argument *against* software like Windows 8. We can cite the horrible adoption statistics and reviews of such software packages in order to stay ahead of the technological curve. Moran and Selfe forwarded their critique at a moment they saw as critical in technology adoption patterns:

If we are on the horns of a national dilemma--caught between the contending forces of technology and literacy, poverty and race--it is a dilemma that is of our making, one that we can unmake. We can, through individual and collective action, work

against the patterns and trends we have delineated here. (Moran and Selfe 53)

At this moment, we may actually be able to fight these battles and begin to win. In order to do so, we must push past a simple praise model. We need hobbyists to bring their experience to bear on the contemporary classroom and notions of the lab.

Confronting Limitations

While microcomputers can help us to further alleviate concerns in relation to access, they do function as a silver-bullet solution. The Raspberry Pi serves as a *tabula rasa* platform of possibility. It can become a fully functioning desktop replacement, a media center, a wireless thermostat control, or a server. The problem is not in what the machine can do, it's how we get the machine to function in these roles. The 35-dollar price point is remarkably deceptive. In order to attain some basic functionality, users must also have an SD card, a keyboard, a mouse, a suitable monitor, and a power cable handy. If one relies on a blank SD card, another machine is necessary in order to load a version of Linux onto it. It doesn't even come with a wireless antenna on the board, which means a user would have to free up one USB port and also purchase a wireless dongle. All of these parts begin to add to a mounting cost, a deceptively cheap device suddenly costs 500 dollars, and, as many users have pointed out, purchasing everything for a Pi runs close to the cost of a full PC tower. In the end, the Pi is inert in its manufactured form. It doesn't even come with a case.

We cannot assume, even for one moment, that such innovations will dramatically impact the education system without sustained and coordinated effort. Big solutions are presented as commonplace and uncomplicated. A Windows machine just works right out of the box, and this has largely become the expectation of all of our devices. This view will be difficult to counteract, even while attempting to build a case for alternative models by utilizing the wave of positivism attached to cheaper computing solutions. We will need to consider several critical questions if we want to reach success.

1. Rethinking the Space of the Lab

Traditionally, computing spaces embedded in educational environments have sought to section off technology into discrete locations, the computer lab. Conversely, we can also see an inclusionary impulse in the classroom via projectors and smartboards. Much of this technology, though, is fixed. Confronting the stationary architecture model will prove to be a difficult task in adoption of microcomputing. For a Raspberry Pi lab, we would actually need a flexible architecture, one that hinges on openness and mobility. The traditional lab-class model involves a rank-and-file assemblage of workstations, but I believe a Pi lab would benefit from more flexibility. I envision a room that requires only adequate power needs. All other concerns can be addressed as needed. The goal of such a laboratory space would be to foster collaboration.

2. Rescuing Technology

The lack of capability with the Pi would need to be addressed before any large scale implementation. One of the primary goals of relying on such a device is to dramatically reduce computing costs in an educational environment. Following from this, we wouldn't want to require students to purchase one of these devices and also expect them to purchase a wide array of other components. A partial solution to this problem, and imminently possible on smaller scales is to coordinate with the IT branch on a campus. This would require only increased communication, and could possibly help administrators better understand that old technology still has use. By coordinating across campus, and perhaps even reaching out to the surrounding community, we could adopt outdated monitors, or even old CRT televisions given the Pi's analog output. We could also track old keyboards and mice, spare power cables, really anything that's just lying around. The ideal space of a flexible lab would allow for the creation of a customizable, non-standardized workstation.

The New Technological Literacy Narrative

The technological literacy narrative has been touted as an assignment designed to uncover the hidden relations between the individual and the machine, and to encourage students to probe these relations and reach conclusions about their use of technology

and the impact of technology on the writerly self. Susan Kirtley has featured prominently in these discussions, and her landmark article “Rendering Technology Visible: The Technological Literacy Narrative” outlines a framework of the technological literacy narrative. In her introduction, she asks us to consider that “as our students compose on computers, and for that matter, on smartphones and iPads and BlackBerries, what, if any, challenges do they face? How do these new writing activities, such as texting, tweeting, and posting on social networking sites, fit into a student’s writing life?” (Kirtley 191). This is commonly how we view technology in the writing classroom, mostly through student composition in relation to new devices and software. Students now have the ability to compose on a variety of devices, and they are increasingly choosing to compose in non-traditional methods, outside of Word and PowerPoint. Social media has also become the primary mode of expression for an entire generation.

Kirtley makes the case for a technological literacy narrative following closely from the recommendations provided by Selfe and Moran, a kind of assignment aimed to “encourage students to explore the often unexamined technologies that influence their writing processes, rendering technology visible in students life stories and illuminating the link between the tools of composition and our writing practices, ultimately urging the students toward revelations about their identities as writers and helping them better understand their best writing practices” (192). These narratives thusly focus on the writerly self in relation to technology. They also possess the all too familiar life-story impulse, a narrative of how our students have come to know technology. My criticism of this assignment rests in the position it forces students into. They are still subjected to the technology, still related to being consumers and users rather than producers. This is apparent when we think of all the technologies we know our students use in their composing practices. A BlackBerry is a powerful tool, but writing a narrative about using a BlackBerry, no matter how critical, seems to tie the student to using the technology. We can no doubt discover much about composing, and the relationship of composing to a BlackBerry, but we seem to awkwardly follow the lead of major tech companies in this model.

Kirtley’s technological literacy narrative is also firmly grounded in very traditional notions of literacy, and her model for

teaching and discussing narratives is surprisingly non-technological. She explains,

the narratives can initiate dialogue about contexts of literacy within the classroom, yielding thought-provoking information for class discussions that allows students to recognize and appreciate differences in technological literacy. Moreover, the narratives invite discourse between teachers and students, encouraging instructors to expose themselves to new literacies, learning from and with the students. (192)

Urging students to consider differences between the technological access of themselves and others can surely help them to understand the often uneven distribution of technology. Classroom discussion is still the best vehicle to voice these differences, but, again, we would only be discussing literacy in relation to the writer, not necessarily the tech user or creator.

Here I want to propose a different model of a technological literacy narrative, one that includes the use of microcomputers to foster an expanded definition of technological literacy. My literacy narrative includes the process of attaining a microcomputer like the Raspberry Pi, and guiding students through the process of assembling the machine before having them write a narrative on the process they used. Such a narrative would shift focus away from student consumption of technology toward actual production. I believe my model will better fit the best practices of teaching with technology outlined in the CCCC “Statement on Teaching, Learning, and Assessing Writing in Digital Environments.” In this position statement, we are called to “introduce students to the epistemic (knowledge constructing) characteristics of information technology, some of which are generic to information technology and some of which are specific to the fields in which the information technology is used” (16). Traditional technology narratives typically focus only on the epistemic characteristics of writing, not necessarily the traits specific to information technology. Tasking students to interact with hardware rather than just software can acclimate them to concerns specific to the technology rather than just features of narrative. The statement also calls for providing “students with opportunities to apply digital technologies to solve substantial problems common to the

academic, professional, civic, and/or personal realm of their lives” (16). Requiring the assemblage of a microcomputer can teach students to advocate for low-cost solutions to computing problems as experienced in their academic and social spheres. Most importantly, the statement calls for hands-on experience with technology. For many students, this is a given (their hands-on use often extends into moments when we would prefer it didn’t). The problem identified in much scholarship in writing technology is that students often uncritically use tech. Tasking our students with a hands-on approach to building a functioning computer can foster critical awareness of use. The narrative component of the assignment does, however, meet with the final recommendation on the statement which involves preparing “students to be reflective practitioners” (17). I will present some benefits before including a possible assignment build.

1. The Google Heuristic

I recently had a student approach me on the day an essay was due. He informed me that he was unable to produce a copy of the essay for peer review, or a copy for my review, because the essay wouldn’t print. He had recently purchased a new laptop, and claimed that his printer simply didn’t work with the Windows 7. I asked if the student had done any research on why this particular problem would manifest. He did not. I saw an opportunity to teach in this moment, and had him follow me to my office after class. I plugged his laptop into an old Epson printer (that I keep in my office for just such an occasion). I guided the student with some suggested search terms in Google, and within about ten minutes he had successfully navigated the process of installing printer drivers and was able to print his essay. This anecdote is common in the writing class. Faced with problems, students often assume that any solution to the problem would be impossible, or prohibitively difficult. I believe this mode of thinking is reinforced by the contemporary landscape of interface. Apple, in particular, has forwarded a wildly popular design methodology that is primarily motivated by a desire to simplify interface designs. Contemporary touch-screen culture further reinforces these design choices by hiding menus and pushing more of the OS into the back end of the software. Cynthia and Richard Selfe observe this process at work

in their landmark article “The Politics of the Interface: Power and Its Exercise in Electronic Contact Zones.” They argue

This way of representing knowledge within computer environments, although not essentially limiting or exclusive by itself, becomes so when linked to a positivist value on rationality and logic as foundational ways of knowing that function to exclude other ways of knowing, such as association, intuition, or bricolage. This validation of positivism, rationality, hierarchy, and logic as the only authorized contexts for “knowing” and representing knowledge continues to inform--and limit--many formal aspects of computer programming. (492)

In reference to the example above, we can see that this process of equating interface to logic was at work in my student. I believe this is perhaps the most significant danger facing the digital compositionist. What’s at stake in digital composing environments is losing exactly what we strive to teach, creativity in a rhetorical situation. Without questioning interfaces, such as those present in social media, our students will no doubt continue to view technology as an innocent or overwhelmingly positive force at work in the larger culture. Tasking students with creating their own functional microcomputer will force them to interact, in some way at least, with non-shiny hardware and ugly software. What we gain is precisely what Kirtley advocates in her work, albeit on a different level:

One great strength of the narratives is the heuristic nature of the assignment. The students take the lead in documenting and analyzing their stories, thus the information and the understanding is guided by the students themselves, rather than an outsider looking in. When given the opportunity to do so, my experience has shown that students are eager to discuss new and evolving technologies and how they help or hinder the writing process. (200)

I seek to amplify the heuristic-building potential of such narratives, and not only ask students to document their stories, but document the process by which they constructed their machine. This will shift the conversation away from the remote past and place it in an immediate context, the context of building, of

creating. The process of installing a printer driver, or assembling a microcomputer, or writing an essay don't differ all that much on a conceptual level. They are problem-solving activities. When students have issues in the writing process, I encourage them to undertake the same kind of actions I would when faced with an error message--return to research, ask for help, experiment with solutions, revise the approach. While the heuristic nature of Kirtley's narrative applies only to writing, mine would apply equally to writing and building in an effort to foster connections between these two processes and encourage moments where students can transfer knowledge of a writing process to technology used in that process and vice versa.

Much of the interaction with technology in the writing classroom pivots around writing rather than computers. Hawisher and Selfe observed this awkward integration in their article "The Rhetoric of Technology and the Electronic Writing Class." They note

The use of technology in these classes, far from creating a new forum for learning, simply magnified the power differential between students and the instructor. Ostensibly computers were being used to "share" writing, but the effect of such sharing was to make the class more teacher-centered and teacher-controlled. Hence, describing technology as a mechanism for increasing the sharing of texts or bringing students and teachers together on a more equal basis again told only a part of the story.

Rather than assuming that a technological literacy narrative will increase in-class collaboration, we can model the behavior of IT support and encourage students to share their processes of overcoming difficulties, or even failing to overcome them. We must act as a collaborative, crowd-sourced technical support operation in order to teach this heuristic.

2. Centering Access

The remarkable strength of the Pi is the low price point and design focused on student learning. When we position the device next to current textbook prices, we can begin to see the full advantage. While many students may not have the money to purchase a full desktop computer, we can ask them to spend the

much smaller amount on a Pi and an SD card. Focusing the narrative on the process of building the Pi would ensure, to some degree more than traditional narratives, a kind of equality of access in the classroom. Kirtley observes that “[w]hile the students I have worked with thus far have all been very forthright about their histories regardless of prior circumstances, I sometimes feel apprehensive that some individuals might be uncomfortable sharing past difficulties resulting from race, class, or gender and that they might feel compelled to censor their words and lives in a public forum” (200). Requiring students to purchase their own microcomputer could work to provide a space for writing about technology that allows all students, regardless of background, some ability to speak. This will hardly repair their past experiences, but it can place all of our students, regardless of background, in a similar situation. The process of building and installing an operating system on the Pi will no doubt be difficult for many, but if we were to task students with solving some of these problems, they could unite under the umbrella of confusion. Rather than simply assuming that computers always “work,” we could ask students to critically approach that assumption in their writing. Their process of building a Pi could also be interrogated, and we could ask that they consider the application of such technology outside the classroom. This centers the question of access back on the student, and we could frame this question with actual solutions.

3. Entering the Global Conversation

Working with new digital literacy narratives will prove difficult for many of us who aren’t trained to use emerging technology. Kirtley’s literacy narrative doesn’t necessitate the actual use of new media, and she admits that

the technological literacy narrative was developed from my perspective as an academic trained in more traditional venues; therefore, the assignment takes a more conventional form as an extended, three-part narrative. While I believe this format does offer many distinct advantages, it does not allow students to use these new technologies as part of the assignment. (200)

For most of us, the literacy narratives that we are accustomed to are located in print literacy, wherein we feel very comfortable. Relying on a device such as the Pi will be difficult and confusing, but this is not to be retreated from; difficulties and confusion are simply part of the broader landscape of technological use. In addition, newly emerging technologies will always be harder to work with than established tech. In order to alleviate and enrich this process, I suggest integrating the larger support networks that have arisen around these technologies such as YouTube tutorials and social media (Forms, Google+). By treating these crowd-sourced texts as subject, we further locate the use of emerging technologies in the social. This can enrich the typified writing process in the networked classroom. Many of the tutorials and user guides that individuals have written for the Pi are freely available, but we must also recognize the fact that these items were authored for a purpose and a specific rhetorical situation. We can ask students to identify any resources they found helpful and also ask for some basic rhetorical analysis. By tasking our students to interact with these sources, we can also show them a dynamic portrait of writing, one that is grounded in a community, a community that is responsive to its members needs. I believe this to be a helpful analogue to a traditional research process, except it shows writers in motion rather than static agents.

The Narrative

The assignment I would propose giving students in conjunction with a microcomputer assembly would focus directly on problem-solving experiences. I would ask students to consider any past experiences with technological problem solving: In this introductory section of the assignment, I would ask that students consider a moment when something didn't work quite as they expected (a problem printing an assignment, a computer that wouldn't turn on, experiencing frequent error messages). Even a brief written response or discussion about problems with technology would begin to work against an overly positivist rhetoric in relation to computing. Considering problems publicly would allow us to view computer errors in much the same way as we view writing errors, features of a text rather than a text itself. Problems in computing could then be normalized and demystified just as we do with problems of error. Next I would have students

narrate the process of assembling their microcomputer. They would be prompted to explain the process in much the same way as tutorials guide users through an action. With this step, students who were initially successful could also assist other users, both hands on and in writing. Finally, I would have the students identify how they would use their microcomputer in the future. Hopefully, by the end of a media course, students could leave armed with their own machines to bring their knowledge to bear outside of the academy. Training our students to confront these issues in the classroom is only the beginning.

Limitations

In an ideal world, support for such classroom instruction would be easy to find. Implementing this assignment, in that world, would be praised and even encouraged by administrators, but we have a difficult task ahead in advocating for this kind of work in the contemporary university. We will have to convince those around us that technological literacy can be more than the ability to write about technology, that it can, and perhaps should, involve contributions by students to the device. The creation narrative can help train us to recognize what the traditional technological literacy narrative has missed. There will, however, be failures along the way. As with any process that involves tinkering, we run the risk of confronting failure at any step. SD cards may fail, boards may fry. We would normally view these failures as catastrophic, but we will need to rethink the place of such failure. Tinkering with a device often means inevitably breaking something, then discovering ways to repair and move forward. If I were teaching such an assignment, I would encourage my students to shed the fear of failure. If a device breaks, the student could simply narrate the process of breaking it, and then continue with trying to fix it. We will also have to work on availability of this technology. We would need to work with the academic institution in order to secure such devices on a campus (preferably in a bookstore--this would help to forward the idea of teachable tech).

To conclude, many of us, with our complicated experiences of with technology defy the entire “native” distinction. Though our students have arguably grown up in such an environment, this does not necessarily indicate their competency with navigating the

technological landscape. As a child, my computer barely worked the way I wanted it. As an adult, my computers never work in the way that I wish. This lack, though, becomes motivation. We must become motivated to break, to reforge, to rethink, and to teach our students to approach technology not as some infallible entity in the human condition, but one that is subject to the social. Some individuals have access to iPads, while some may have only a simple phone. This does not preclude us from bridging this gap on a university campus. What are we afraid of?

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CYBERLEARNING: THE IMPACT ON INSTRUCTION IN HIGHER EDUCATION

by

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Abstract

Web 2.0 cyberlearning tools are changing the world and in particular, education (Richardson, 2009). Technology is having a significant effect on how people work together, how they communicate, and how they lead organizations. The shift is from a world of fragmentation to one of connectivity and integrated networks (Downes, 2007). This transference is fueled by the trend toward a global economy and by the increased use of technology and mass communications in the everyday world, and specifically, in the use of cyberlearning as an educational tool (Katz, 2008). The National Science Foundation Task Force on Cyberlearning (2008) defined cyberlearning as “learning that is mediated by networked computing and communications technologies” (2). Montfort and Brown (2012) suggest the National Science Foundation’s cyberlearning definition was focused “clearly on the networking technologies that are defining the Information Age (e.g. cloud computing and social media)” also positing the term could encompass new and emerging forms of technologies that can be used for education (2). The authors propose to investigate how educators can make this change happen in complex educational organizations.

Introduction: What is Cyberlearning?

Cyberlearning, then, by definition, provides a potential tool for the acquisition of knowledge (Van Merriënboer & Stoyanov, 2008). Social media technologies are used as a method of communication and collaboration, to verbalize thoughts, comments, images, and videos, and to learn (Bonk, 2009). Approached from Papert’s (Papert & Harel, 1991) constructivist philosophy, cyberlearning in the form of social media provides methods for students to learn by doing (Jones, Morales, & Knezek,

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2005). Students engaged in the process of learning become more self-directed in their own learning and are more likely to develop a deeper understanding of the knowledge and skills expected of them. Kelm (2011) suggested that the benefits of collaborative learning facilitated through Web 2.0 technologies could be applied to many contexts and subjects; therefore, social media tools used for instructional purposes provide new methods to facilitate and expand students' knowledge (Hew, 2011; Mix, 2010).

Higher Education versus Cyberlearning

Higher education professors are subjected to immense social and political pressures to improve the educational outcomes of students (U.S. Department of Education, Office of Educational Technology, 2012). Questions related to the quality of higher education and teaching practices are currently receiving high visibility in both professional and political venues (Anderson & Borthwick, 2002). Technology, like all innovations, is only as efficient and effective as the person who uses it. However, the question remains, how will technology, specifically social media, impact instruction?

Oblinger (2004) and van Horn (2006) suggest the digital practices of millennial students need to be taken serious and used by post-secondary education teachers (Barnes & Lescault, 2011). The authors argue that technology can provide a valuable key to teach twenty-first century students (Brennan, 2008), particularly those with limited access or proficiency. The improved access and availability of electronic technology has enabled more adult students to participate in the learning process (Bjerede, Atlins, & Dede, 2012). Web-based instructional programs are proliferating through almost all higher education institutions, providing access for any learner to become a participant; however, cyberlearning needs to be used "mindfully and effectively" (Rheingold, 2008, p. 9). The author posited both educators and students should use digital media "to express themselves, socialize, advocate, organize, educate, and grow collective intelligences" (p. 10) and not use technology for the sake of technology.

While cyberlearning as an instructional method presents formidable tools for use by higher education instructors, cyberlearning also comes with multiple challenges (Chu & Meulemans, 2008). One of the primary challenges originates from

higher education instructors who are apathetic toward integrating any form of technology into instruction (Boud & Prosser, 2002). While students arrive on campus as digital natives (Prensky, 2001) and active users of myriad technologies, there are higher education instructors who have no wish to deviate from older, more established teaching practices (Oblinger, 2004). Rather than incorporating cyberlearning in instruction, some faculty focus on ways to keep students from using mobile learning tools during instruction (Hagood, 2001) as they disdain and discount cyberlearning processes as educationally irrelevant (Ajayi, 2010; Knobel, & Lankshear, 2009).

Optimizing Higher Education Instruction

The educator's role is particularly important in fostering learning for all segments of the population, especially when utilizing technology (Junco, Heiberger, & Loken, 2010; McDermott & Kowalsky, 2011). To keep pace with technological development, educators should assume a leadership role in optimizing instructional technology (Roschelle & Pea, 2002). Educators around the world should provide students with the knowledge and skills necessary to function in society (Richardson, 2012). Now that society has assumed a global focus, supported by technology, higher education institutions are asked to offer the highest quality education, especially technology literacy, to a widely diverse audience (Pierson, 2001). Educators in higher education institutions should recognize the importance of incorporating technology into the delivery of instruction so that graduates can possess the skills required by a global, technical society (Blin & Munro, 2008; Yu, Tian, Vogel, & Kwok, 2010).

Technology should not be an end for education; it should be a means to achieve the end (Lever-Duffy, McDonald & Mizell, 2005). This requires educators to use technology as a learning tool, to assist the learner with the task of learning (Gess-Newsome, Blocher, Clark, Menasco & Willis, 2003). Technology can be used in the classroom to transform the way students learn and the way educators teach (Brennan, King & Lebeau, 2004). Pushing reluctant educators to use technology requires professional development that acknowledges that the use of technology must support the teacher's goals for student learning (Dziuban, Moskal & Hartman, 2005; Zhao & Czikowski, 2001). Unenthusiastic twentieth

century educators acquiring requisite twenty-first century technological skills necessitate support, encouragement for development of technological skills, and in today's world of diminishing monetary resources, recognitions that educational careers may hinge on the incorporation of twenty-first century teaching competencies (Young, 2004; Zhao & Zinko, 2001).

Technology has also changed the face of education. According to Jukes and Dosaj (2006), both computer and other communication devices become a bridge between students and teachers at different locations without time and energy being wasted in travel by either student or teacher (Zuhadar, Yang & Lytras, 2012). Advances in computing and telecommunications technologies have opened up the possibility of personal and group interaction through web-based education (Mense, Crain-Dorough, Stringer, & Richardson, 2013). In effect these technologies permit the student to turn the teacher on, or off, at will, as lifestyle permits (Jukes & Dorsaj, 2006).

Advocates of educational change promote a learning environment that prepares students to deal with changes as they occur, and optimistically, to help create needed societal changes (Hemmi, Bayne, & Land, 2009; Mense et al., 2013). To address these concerns, educators have turned to cyberlearning tools such as social media for increasing student achievement (Keengwe, Onchwari, & Onchwari, 2009). Through the use of social media, students and teachers find themselves playing different roles than is the norm in traditional education (Bennett & Pye, 1998; National Science Foundation, 2008). The teacher is no longer the sole source of knowledge but instead becomes a facilitator to support student learning, while the student actively participates in what and how knowledge is imparted (Darling-Hammond et al., 2008; Mishra, Lemoine, Campbell, Mense, & Richardson, 2013). Web-based learning has the potential to create a wealth of learning for students that is not readily available in textbooks and faculty lectures (Hrastinski & Aghaee, 2012).

Wesch (2011) suggests social media establishes architecture for participation, in his words, to connect, organize, share, collect, collaborate, and publish. With the push to ensure that students are workforce ready, digitally knowledgeable, and able to work collaboratively, Wesch (2010, 2011) suggests that information obtained from university student interviews

acknowledges that students purchase textbooks that remain unopened and unused and bring laptops to class for social media engagement (i. e. Facebook) rather than note taking, while using social media forums to engage in peer communication, check on current events and sports, and listen to music during classes (Ingeman, 2012). Without the use of digitally relevant tools, higher education instruction may offer only traditional, teacher-directed instruction (Edwards, Mayernik, Batcheller, Bowker, & Borgman, 2011); using social media as a relevant tool for engagement prompts students to generate information promoting participatory and responsive learning experiences (Zucker, 2008).

Depending on the nature of the course content and delivery medium, the choice of appropriate technology depends on learner needs and course requirements (Soloway et al., 2001). Teachers in the virtual environment often need additional time for interactive communication. Face-to-face communication compared to typing messages sent through email requires more time in order for virtual teachers to communicate with their students (Zhuhadar, Nasraoui, & Wyatt, 2008). Students can feel isolated very quickly without a response to email (McDermott & Kowalsky, 2011).

Instructor attitudes toward technology-based instructional methods also affect a student's experiences with web-based courses (Keengwe, Onchwari, & Onchwari, 2009); therefore, specific provisions should be provided to ensure that students receive sufficient feedback in a timely manner (Lemoine, Richardson, Mense & Lane, 2013). Instructors should be prepared to promptly respond to student queries. Virtual office hours can be held using chat rooms (Scott & Rockwell, 1997). Because both are essentially asynchronous, they continue to leave the student in charge of setting his or her own work times—a critical success factor for the web-based coursework (Persson, Fyrenius, & Bergdahl, 2010). Frustrations resulting from problems with communication between student and academic institution are factors of which web-based educational planners should be well aware (Jenkins, 2006).

Educators need to place technology in a proper perspective, i.e., as a means to improve the curriculum and student achievement (Cuban, 2001; McCabe & Meuter, 2011). In some cases, educators have become so enamored with technology that it is often an end in itself without a vision for its role in improving education

(Lankshear & Knobel, 2003; Woodard, Shepherd, Crain-Dorough, & Richardson, 2011). Educators need to analyze the curriculum first and then use technology where it will enhance the curriculum (Klopfer & Squire, 2008; National Science Foundation, 2008).

Social Media as an Instructional Tool

What are the results of using social media in the classroom? Can social media be incorporated into instruction? One of the largest technology developments over the past few years has been the global rise in online social networking (Mishra et al., 2013). Students use social media outside the classroom (Kirschner & Karpinski, 2010); students are familiar with the technology and how they use it to learn on their own (Jones, Ramanau, Cross, & Healing, 2010). Therefore, teachers who have the capability can use social media to customize their teaching methods to meet the individual needs of students and permit them to learn at their own speed (Klopfer, 2008).

Using social media forces teachers to change how they teach and how students learn (Long, 2009). Most students are familiar with social media because many of today's students have grown up using technology (Jones et al., 2010; Wesch, 2010, 2011). Typically students are excited about the use of technology and will likely respond with excitement when social media is used in the classroom (Queirolo, 2009). These students already possess the basic knowledge of how social media functions and will not be required to incorporate learning new instructional techniques in addition to learning new concepts and information (Parameswaran & Whinston, 2007; Selwyn, 2009).

Social media is essentially a hands-on enterprise, which means that it is based on participation and active involvement (Subrahmanyam, Reich, Waechter, & Espinoza, 2008). By using social media, students have the opportunity to be actively engaged by responding to learning and by contributing to their own learning with each other as well as with the instructor (Smith, 2007; Kirschner & Karpinski, 2010). Engaged students are more focused on developing a deeper understanding and developing abilities to become critical thinkers (Karlsson, 2010). If students are given the occasion to personally influence their own knowledge attainment in a learning procedure they already know, use, and enjoy, the potential for meaningful learning dramatically increases (Yu, Tian,

Vogel, & Kwok, 2010). Junco, Heiberger, and Lokent's (2010) study on the use of Twitter, a microblogging and social networking platform, suggests "a positive connection between social networking website use and college student engagement" (p. 3) measured through the use of interactive teacher-to-student and student-to-student social media discussions, class reminders, academic support provided by higher education professors, interactions with class members, and increased numbers of study groups emerging from social media interaction.

The Evolving Role of Cyberlearning in Higher Education

Historically, teaching involved imparting knowledge and teaching students to think; however, today teachers have to make a paradigm shift (Davidson, 2006). Professors still teach students to think, but instead of just imparting knowledge, teachers help students understand where and how to find information through the use of technological resources (Hemmi, Bayne, & Land, 2009; Woodard et al., 2011). Exposing students to information sources available through today's technology becomes the teacher's primary job (Coley, Cradler, & Engel, 1997). Consequently, higher education instructors should understand the technology, use it in their classrooms, and make it available to students (Nicolini, Mengis, & Swan, 2012). Success demands a proliferation of means (Einstein, 1950). The proliferation of means presents challenges, as does the other part of Einstein's statement, for a confusion of goals pervades in the world of higher education (Zucker, 2008; Woodard et al., 2011).

The world is now in an age of digital technology where information is available at any time. The rationale behind the use of social networks as a tool for professional learning includes the idea that the Internet is this generation's defining technology for literacy (Jones et al., 2010). Social media technologies allowing students to connect to educational contexts in new and meaningful ways beyond the traditional classroom environment have the potential to blur the line between formal and informal learning (Boyd & Ellison, 2007; Bush & Hall, 2011). For instance, third-party social media tools, such as WordPress, Wikipedia, and LinkedIn, can include members outside the class beyond the one-semester time duration and connect learners with communities, experts in the field, and peers across the world (Persson, Fyrenius,

& Bergdahl, 2010). It also provides engaging channels to facilitate student-student, student-instructor, and student-content interactions in multimedia formats (Bryer & Chen, 2010). It also entices users to collaborate on projects in real-world situations (Karlsson, 2010).

One of the most distinct advantages social media offers in respect to education and learning is that it has the ability to significantly increase the level of engagement and interactivity among students (Nicolini, Mengis, & Swan, 2012; Zhao & Kuh, 2004). One reason is because of the familiarity with technology as many of today's learners have grown up using video and computer games as well as online virtual worlds and simulations like Wii Sports, Sims Online and World of Warcraft (Ingeman, 2012; Wankel, 2009). Similarly, even though the ages of social media users do vary to an extent, the majority are younger generations and like with most other things in life, the more these students use social media, the more comfortable they become with it (Kirschner & Karpinski, 2010). It appears logical that when social media is integrated within classroom instruction, there is a likelihood of eliciting more motivated students, given that they already possess the basic knowledge of how social media functions and like to use it (Al-Bataineh, Anderson, Toledo, & Wellinski, 2008; Zhuhadar, Yang, & Lytras, 2012).

In essence, social media, among other things, is based on participatory interchanges and active involvement (Rheingold, 2008). As such, Facebook, Twitter, blogs and many other forms of social media work the same way in that the individual user does not solely sit at the computer and passively view what others have shared (Ellison, Steinfield, & Lampe, 2007; Selwyn, 2009). Users, too, have the opportunity to be actively engaged by responding and contributing their own commentary, data, pictures, and visual images (Shein, 2012).

Using any type of social media and incorporating it within educational instruction would likely result in a higher level of interactivity (Ullman, 2012). This, in turn, would offer a more valuable effect on student learning, as expressed in Seymour Papert's philosophy of constructionism that speculates "learning by doing is better than learning by being told" (Jones, Morales, & Knezek, 2005, p. 1). Through its self-manipulative properties, social media can efficiently be used to gain the sort of meaningful learning advocated by constructivists and is why many educators

are currently embedding social media as a strategy in instructional designs (McCabe & Meuter, 2011; Wallace, 2004).

Interactivity and engagement are positively correlated both to each other and to learning as they generally teach students to subconsciously become responsible for their own knowledge building (Davidson, 2006; Li, 2012). This occurs when a student is expected to independently interact with instructional materials; however, students simultaneously tend to care more about their individual progress, making it more important for them to succeed (Mense et al., 2013). In other words, when students are more engrossed and self-directed in their own learning, they are also more likely to develop a deeper understanding of critical course concepts (Guile, 2001).

Since communication forms the basic framework of teaching and learning, regardless of the type of social media, interactive communication becomes essential (Wagner, 2011; Wallace, 2004). For example, the intent of Facebook and Twitter is to provide a platform for people to connect and share aspects of their personal life with profile details, text, images, and videos (Kaplain & Haenlein, 2010). Blogs and YouTube, on the other hand, are geared towards content sharing with more thought-out ideas and information or videos (George & Dellasega, 2011). Yet despite the variations in purpose, what they do have in common is that through consistent use, unique communities develop, allowing people from all over the world to easily communicate with one another in a more social and relaxed environment (Lane, Lemoine, Tinney, & Richardson, in press).

At the same time social media also presents the possibility to have a distinct impact on all different users in that they feel more comfortable and at ease to open up and share their thoughts, feelings, and experiences with others (Lane et al., in press). In the educational setting, if various social media are integrated into the methods of instruction, students, especially those who are shy to speak in front of others, could be more participative (Van Merriënboer & Stoyanov, 2008). In particular, allowing learners the chance to share their thoughts and creative abilities in a more relaxed and less direct environment would help them to develop and shift their private voice to a more public voice (Bonk, 2009), in turn, leading to a higher degree of self-confidence and comfort in individuality along with more effective public participation and

self-expression (Rheingold, 2008).

In addition to augmented communication, social media also provides the benefit of increased collaboration, which can be applied in many contexts and subjects (McAndrew, 2010). Promoting group work and collaboration in and of itself implies a greater opportunity to amplify the amount of intelligence and knowledge gained, since data obtained as a collective group will always outweigh the limited amount an individual can absorb (Kelm, 2011). Therefore, using social media tools that inherently create a collaborative environment in education instruction will most likely make the goal of expanding the student's wealth of knowledge through sharing that much more attainable (Steinfeld, Ellison, & Lampe, 2008). In a broader sense, using social media (e.g., Facebook) can generate class discussions (So & Brush, 2008). Blogs can also be used to have students work on a collective research project or even just to share relevant information on course topics. Similarly, students can use YouTube to share a video project or Twitter to track a particular concept, keep a learning diary, or even to take a quiz (Junco, Heiberger, & Loken, 2010; Shih & Waugh, 2011).

In a separate light from other benefits, integrating social media within education instruction helps better prepare students for their future careers. In many ways this can be attributed to the many companies and organizations expanding their use of social media as a business strategy (Hallouche, Tapp, Hansen, & Hansen, 2012). Businesses have begun to create entire jobs based solely on overseeing and managing social media relations. Companies that take advantage of social media tools do so because that is where their consumers are; in order for them to successfully reach their target markets, it is necessary for them to continuously find new ways to connect and advertise through those same social media (Chan, Crain-Dorough, & Richardson, 2012; Selwyn, 2009). The longer social media, as business strategies, continue to expand and stay popular, the more companies will continue to participate in social media in order to stay competitive (Queirolo, 2009; Ullman, 2012).

Overall, integrating social media in educational instruction allows for many significant benefits in student learning (Zuhadar et al., 2012). One such advantage is that it can easily increase the level of interactivity and engagement among learners because it

essentially is a personal experience and most students today are already acquainted and at ease with it. As well, social media has the natural capacity to strengthen collaboration and communication among students by participating, constructing, and giving power to their public voice in a social and indirect environment (Bonk, Whiting, Jung, Kim, Altuwaijri, Tan, & Wang, 2012). Social media also provides students with realistic preparation for their careers as it is now and will continue to be an integral tool in the future (Proserpio, 2007).

Opponents of Technology

Technology implementation is meeting resistance from educators who cannot or will not accept the new reality of teaching thinking **AND** application and not thinking **OR** application (Dron & Anderson, 2007). While there is a perception that the use of cyberlearning media will improve the delivery of knowledge to students, haunting questions remain even to those who use technological advancements (Sourin, Sourina, & Prasolova-Ferland, 2006). The integration of technology as a learning tool goes beyond having computers in a classroom (Ferdig, 2007). Cyberlearning implies that the teacher has the flexibility to use technology to improve and expand learning opportunities for students, which infers the willingness to incorporate new discoveries into the curriculum (Nicholson, Nicholson, & Valacich, 2008). Educators should recognize that technologies such as social media are a means to improving instruction through enhanced delivery systems and improving student performance (Hew & Cheung, 2010).

There are two strong potential arguments against technology utilization in schools (Roschelle & Pea, 2008). The first is that technology will not save schools or teachers. Technology can be positive but, if the educator does nothing else to improve instruction except to provide technology, then educational experiences will not improve for students (McAndrew, 2010). Improving instruction takes planning first and foremost so that everyone is working toward the same goal; technological innovations can make positive differences in the classrooms (Culp, Honey, & Mandinach, 2005). Staying abreast of emerging technologies is a formidable task for every teacher and especially today for a teacher who may not be comfortable in the quickly

changing world of technology (Conole & McAndrew, 2012). The reason is easily seen in the proliferation of technology media so evident in this technological world (Lever-Duffy, McDonald, & Mizell, 2005).

Another argument concerns the effectiveness of the inclusion of technology. As yet, there is no method to measure that effectiveness (National Science Foundation, 2008). The impact of technology on the academic progress of the student is an unknown (Albright & Nworie, 2008). While teachers can anecdotally note that students are “turned on” by the technology, and that they are involved in their learning, teachers cannot with certainty show that learning has increased because of the technology (Baird & Fisher, 2005; Kirschner & Karpenski, 2010).

There is also the possibility of not utilizing all of technology’s potential (Richardson, 2012). Some of these problems arise from a lack of training, some from the instructor’s attitudes about using the technology, and still others by hardware problems (Byrom & Bingham, 2001; Jones, Ramanau, Cross, & Healing, 2010).). Instructors need to be trained to use instructional technology, but too often they are not (Keengwe, Kidd, & Kyei-Blankson, 2009). Some educators perceive that the technology itself will improve the instruction. Advancement in technology does not lead to effective instruction (Mense, Fulwiler, Richardson, & Lane, 2011). Instructional practices depend on creative, well-informed instructors. Newer technologies are not inherently better than old ones. The instructor should be trained to take advantage of his or her experience and be able to adapt that experience to the new environment of cyberlearning (Boud & Prosser, 2002; Zhao, Alexander, Perreault, Waldman, & Truell, 2009). Instructors should be trained to use technology and deliver material in a new contemporary manner (U. S. Department of Education, Office of Planning, Evaluation, and Policy Development, 2010).

Access to technology is also a concern for higher education instructors (Keengwe, Kidd, & Kyei-Blankson, 2009). Other complaints about using social media in the classroom are even more basic (Kim, Jeong, & Lee, 2010; Rishel, 2011). Some teachers are adamant about their refusal to use social media as they feel it blurs the relationship between instructors and students (Blankenship, 2011). Privacy and security issues are also concerns

(Foulger, Ewbank, Kay, Popp, & Carter, 2009). Class discussions using social media sites could reveal information about students and their identities. Mazer, Murphy, and Simmonds (2007) and Fogel and Nehmad (2009) also noted concerns with faculty members trying to protect their professional identities. Additionally, there were concerns with identity theft. Fogel and Nehman (2009) also noted “friending” situations also created ethical issues when changing instructor professional-student interactions into quasi-social relationships (Wagner, 2011).

Implications

Digitally-mediated information and electronically distributed data have transformed, and will continue to transform, the design and delivery of instruction, how academic outcomes are measured, and the way learning itself is conceived, represented, and studied (Kingsley, 2007; Kingsley & Boone, 2008-2009). Technology is a learning tool, a means to assist the learner with the task of learning; technology can be used in the classroom from kindergarten to doctoral programs. As technology use began to proliferate in the 1990s, Drucker (1993) suggested technology could transform the way students learn and the way educators teach in the coming decades, arguing that educators can learn lessons from an earlier technological revolution—the printed book. The lessons:

1. That embracing the new technology of learning and teaching is a prerequisite for national and culture success--and equally for economic competitiveness.
2. Technology itself matters less than the change, which it triggers in substance, content and focus of schooling and school. (p. 194-95)

Teachers can become overwhelmed by the complexities of trying to learn social media while at the same time trying to teach it in their classrooms. Teachers need guidance in formulating critical approaches that will fit with the culture and context of their schools, while at the same time acknowledging content-related learning that takes place outside of school (Lewison, Flint, & Van Sluys, 2002).

Lenhart, Madden, Macgill, and Smith (2007) suggest many higher education students actually prefer multichannel communication, such as text messaging, instant messaging, and

communication through social network sites, to traditional email and face-to-face communication. Indeed, 55 percent of online teenagers are using Web 2.0 technologies, such as social network sites, outside of school and visit their social network sites daily or several times a day, devoting an average of nine hours per week to the network (Lenhart, Madden, McGill, & Smith, 2007). A recent national survey of college undergraduates (ages 18 to 24) indicated similar trends (Salaway, Borreson, & Nelson, 2008).

Social media sites offer places to exchange messages, form groups, request information, articulate or develop personal connections, post or remix digital content, and create or comment in blogs (Parameswaran & Whinston, 2007). Contrary to most assumptions, online social activities are not devoid of intellectual activity. Researchers and educators observe students engaging in formal, informal, and nonformal learning across a wide range of contexts and exercising considerable authority over how, when, and with whom they learn. Features allow learners to link up, create, consume, and share independently produced information, media, and applications on a global scale (Chan, Mense, Crain-Dorough, Richardson, & Lane, 2013).

In social operating systems, the emphasis on data and information is equal to or replaced by an emphasis on creating, developing, and sustaining human relationships (Katz, 2008). Technology executives predict this next wave of social networking, social operating systems, will move technology systems away from restricting users to walled-off membership in a few sites (e.g., Facebook) toward a more open and flexible sharing among numerous niche communities (Chu & Meulemans, 2008; Connell, 2009).

Students who live in the twenty-first century need to know how to learn, and technology can provide a valuable key (Hemmi, Bayne, & Land, 2009). If educators merely train students and give them a bag of tricks or skills, those skills may very well be outdated in five or ten years. Educators should be providing experiences in how to learn and helping students develop learning attitudes and attributes (White, Rigstaff, & Kelly, 2002). Emerging research and institutional practices highlight the possibilities and pitfalls of Web 2.0 for teaching and learning (Bush & Hall, 2011; Conole & McAndrew, 2012; Eschenbrenner, Nah, & Siau, 2008).

Whether Americans lead the world in this educational transformation or play “catch-up” with more enterprising cultures will in large measure determine whether the United States will continue to have a leadership role in the ever more competitive world of the twenty-first century (Chan et al., 2013; Partnership for 21st Century Skills, 2009). The implication for American educators is clear for this new millennium; educators should critically examine how students are taught (Edwards et al, 2011; Halluche, Tapp, Hansen, & Hansen, 2012). Educators should understand that learning is truly a life-long process, for them just as much as for their students (Woodard et al., 2011). They should be willing to change and incorporate new ways of reaching learners because educators should be facilitators of learning (Ingeman, 2012; McCabe & Meuter, 2011).

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BLOGGING IN THE CLASSROOM: USING TECHNOLOGIES TO PROMOTE LEARNER-CENTERED PEDAGOGIES

by

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Abstract

This article presents the current literature covering the educational opportunities of blogs in classroom settings. Drawing on Celsi and Wolfinbarger's (2002) argument for innovative technological teaching methods, it focuses on how current research illustrates the ways in which blogs can challenge traditional patterns of pedagogical approaches to technology use in educational environments. Based in a wide body of research, this article defines the characteristics of blogs, maps out the key uses of blogging, evaluates their limitations in educational settings, and offers recommendations to teachers about how to overcome those limits, based on an evaluation of the current research.

Introduction

"The Digital Age is synonymous with rapid change. If the way in which we communicate is changing, then educators need to adapt to the new literacy context" (Sweeny, 2010, p. 122). Not only do teachers need to adopt technologies in classrooms, but they must adopt Wave 3 technologies—ones that are used "to develop innovative learning situations and make learning more active, engaging, and ultimately better for students (Celsi & Wolfinbarger, 2002). In Wave 3, students and faculty work together to create the learning process" (McCabe and Meuter, 2011, p. 156)—as a co-emergent process (Park, Heo & Lee, p. 152) rather than one handed down by the teacher. According to Celsi & Wolfinbarger (2002), Wave 1 does not challenge traditional teaching practices, instead focusing on the technology behind the scenes of teaching—for instance, using Excel to calculate grades. Wave 2 focuses on technology use that replaces current teaching methods but does not change the logic behind the pedagogical methods—for instance, using PowerPoint presentations to replace lecture notes or

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overheads. Wave 3 technology use, however, challenges conceptions of traditional classrooms and transforms “the classroom from a teacher broadcast-centered medium to a learner-centered and interactive teaching experience” (Celsi & Wolfinbarger, 2002, p. 69). In this age when students bring with them new literacy skills and also require new literacy skills in order to be successful in the learning and work environments in which they will find themselves, teachers need to adapt their classrooms to incorporate Wave 3 technologies uses and philosophies.

Blogs are one way to help students deeply engage in Wave 3 technologies in a way that “gives students a sense of ownership” of the class and their work within it (Celsi & Wolfinbarger, 2002, p. 69). Blog assignments acknowledge changing definitions of what counts as literacy and literacy practices. The world teachers are preparing students for is not the same one they were preparing students for ten years ago. Clark (2010) argues that the Digital Imperative means that students must be immersed in “analyzing digital media, in exploring the world beyond the classroom, in crafting digital personae, and in creating new and emerging definitions of civic literacy” (p. 28). Teachers must leverage cyberlearning pedagogies in order to meet students’ needs and to approach students where they are at—i.e. to draw on their current, effective learning strategies. “By tapping into behaviors students already possess, teachers can engage students in more meaningful, and thus more productive, writing lessons, all of which have been proven to be valuable assets” (Dredger et al., 2012, p. 87). This does not necessarily mean that assignments currently taught will be completely replaced by new technological ones like blogging, but Wave 3 does suggest that, in addition to some assignments changing, approaches to teaching and learning should change. The whole class becomes interactive and learner-centered, no matter what assignments are given. Blogs are one good example of this sort of interactive, learner-centered approach because they can shift the class to learner-centered knowledge construction, create a broader, authentic audience for student work, encourage student ownership for texts, and promote critical (analysis, evaluation and synthesis) thinking. As teachers integrate cyberlearning assignments like blogs into their classes, there are both opportunities and limits that must be considered and negotiated.

The article provides a review of literature of the educational opportunities of blogs in classrooms. I lay out the definitions and benefits of blogs; the uses of blogs; the limitations of them; and recommendations for teachers on how to incorporate them effectively into their classrooms. I do not offer specific blogging assignments because I want to make my framework for incorporating the cyberlearning technology applicable to as many disciplines as possible.

Definition of Blogs

Blogging is a commonly used form in our culture today. “Essentially a form of personal publishing (Downes, 2004), the blog is a text-based online environment which allows for embedding links to other online resources and in which the author’s posts appear in reverse chronological order” (Halic, 2010, p. 206). Many blogs started as a sort of online personal journal, but now blogs encompass many purposes, most of which are social. As Wheeler (2009) points out, “even though they can be intensely personal in nature, blogs have communication with others as their central purpose” (p. 5). Blogs typically include comment boxes that allow readers to submit responses to the initial blog posts, an interactive feature that “is fundamental when thinking of blogs as ‘social and not only textual practice’ and when approaching them from a ‘network orientation, rather than simply a writing orientation’ (Burgess, 2006, p. 109-110)” (Halic, 2010, p. 206). In the classroom, this means that “a blog is interactive in the sense that readers can respond with comments which will be beneficial in promoting a collaborative learning environment” (Ahmad & Lutters, 2011, p. 4) in which students participate in a network of interactions rather than just listing their own thoughts on a given topic or just writing to the instructor.

Students want to communicate with others, particularly with their peers and a more global audience, rather than just posting their own ideas. In fact, they spend a great deal of their time doing so through blogging on their own time. Fifty-seven million Americans (39% of Internet users) read blogs, twelve million Americans maintain their own blogs, with 54 percent of American bloggers under the age of thirty (Lenhart & Fox, 2006). These numbers, which have certainly grown exponentially since 2006, suggest that many students bring with them prior

experiences with and interest in blogs, and teachers can capitalize on this interest and experience by recognizing that they bring not just technical skill but an attitude--a particular vision of the world. In the classroom, new technologies such as blogs require not only different literacy skills than traditional essayistic ones, but also new attitudes which require learner-centered practices rather than teacher-dominated ones.

Downes (2005) defines Web 2.0 as “an attitude, not a technology” (p. 10). Perhaps it is important to extend Downes’ claim and suggest that Web 2.0 tools such as blogs entail a different type of learning attitude that extend education from preset content and rote learning into the realm of open educational resources which learners can quickly access, link to and extend. With such an attitude, each learner has some power, some voice, and some control over his own learning (Kang, Bonk & Kim, 2011, p. 233).

Thus, blogs provide a different way of approaching not only writing but of approaching education, requiring that students take ownership of their ideas, giving them power over their learning. When teachers incorporate technologies that students are already interested in, students are more likely to take ownership of their own learning and are more likely to be intrinsically motivated to blog in class rather than seeing blogs as assignments to be completed for a grade.

Blogs are distinctive from other types of educational technologies for other reasons besides many students’ extensive experience with them. Blogs are distinctive from discussion boards—a technology which is often used in educational environments. It is argued that blogs are different from discussion boards and provide wider options for students (Yang & Chang, 2012; Ellison & Wu, 2008; Kang, Bonk, & Kim, 2011; Hall & Davison, 2007; Zhang, 2009). Students have more control over their blogs since they own their blogs and can customize them and shape the direction of the conversation in a much more direct way (Hall & Davison, 2007). In discussion boards, the teacher takes much more control over posting the topics, monitoring the discussions, and setting the parameters of the discussion; in blogs, students and their peers take on these responsibilities to a much greater degree (Yang & Chang, 2012; Hall & Davison, 2007). Further, discussion boards are primarily text-based whereas blogs

“leave more room for students to present their results in multiple forms of media other than text” (Yang & Change, 2012, p. 128), a feature which provides them with experience in using multi-modal methods to develop and support arguments—important skills in digital literacies. While there are some common factors between blogs and discussion boards (Gill, 2006), “the fact that student writing reaches a far greater audience (the Internet public) and the fact that the blogging format highlights the individual and unique authorial voice (as opposed to newsgroups which are typically organized by discussion thread, not author)” (Ellison & Wu, 2008, p. 102) make blogs distinct from discussion boards. As a result, “self-publishing encourages ownership and responsibility on the part of students who may be more thoughtful (in content and structure) if they know they are writing for a real audience. This same degree of personal responsibility is lacking in discussion forums” (Zhang, 2009, p. 67) because there is a more group authorship/anonymous feel to discussion boards (Zhang, 2009, p. 67).

Another way to see how blogs are distinctive is to realize they are a genre. Gallagher (2010) argues that blogs are a recognizable genre with four key themes: *informal language*, *intertextuality*, *the personal address*, and *the rhetoric of the provisional*. *Informal language* is dialogue-like language that seems to “duplicate the thought process that led the writer to her position, a kind of talking aloud to friends” (Gallagher, 2010, p. 288, my emphasis). *Intertextuality* refers to the fact that blog entries frequently link to other texts, visuals, and videos. “There is a genuine feeling of interchange here, of writers/readers reacting to and with each other” (Gallagher, 2010, p. 288). The benefit of intertextuality is that “readers can follow links to broaden their sense of any given rhetorical situation” (Gallagher, 2010, p. 288). *The personal address* refers to when the author directly addresses the reader, a move that “highlights the personal nature of the blog” and illustrates the way blogs “make an effort to *sound* like spoken language” (Gallagher, 2010, p. 289). *The rhetoric of the provisional* stresses that what is important in blogs is questioning, rather than fixed answers, responses, rather than “thesis driven-analysis” (Gallagher, 2010, p. 291). Unlike traditional academic writing which values pre-determined, support-based answers, “what is valued in the blog is insight and opinion rather than fact

and extended analysis . . . The provisional is valued over the final” (Gallagher, 2010, p. 291).

It is clear from Gallagher’s (2010) commonplaces blog themes that they are distinctive from traditional academic writing. As Kirkup (2010) writes, “blogging is a process where ideas are developed and expressed, but often in a concise and accessible form quite different from the traditional, long, analytical and discursive academic texts that are the products by which most academics are assessed” (p. 95). These features of blogging are one of its significant benefits because they draw on where students are and value their current practices. Students are already writing extensively in their daily lives but are not necessarily writing essays and reports—or valuing them. An important part of classes should be harnessing the work students are already doing. “New literacies work to integrate these forms of communications into literacy instruction in an effort to bridge the writing students do naturally and the writing schools typically require in the classroom” (Dredger et al., 2010, p. 86). Incorporating the commonplaces of blogging has the benefit of drawing on the style of writing students are familiar with in order to explore course material and to deepen their understanding of their connections to the learning material. It allows them to take ownership of their learning because they are drawing “upon the funds of knowledge [they] bring with them to the modern day classroom” (Dredger et al., 2010, p. 86) rather than simulating “expert” discourses imposed upon them by the instructor. This is not to suggest that formal language cannot be taught; it is to say that blogs are a useful genre in themselves, and they can also serve as an important bridge to writing students will do in other assignments (Dredger et al., 2010; Gallagher, 2010).

These distinctive features make blogs’ social features useful in preparing students for the cyberlearning skills they will need in their future careers (Sweeny, 2010; Clark, 2010). In the next section, I provide an overview of the key uses of blogs in educational environments as presented through current research in order to show how blogs can achieve the possible distinctive benefits of the genre.

Uses of Blogs

Blogs are used in multiple ways—delivery of learning materials, gathering resources and sharing them, documenting

learning, recording everyday life, collaborating with others, and mentoring students. Perhaps the two most significant overarching categories of use described in current research, though, are reflective learning and social communication. In this section, I discuss the various aspects of these two categories, illustrating their significance to educational environments.

Self-Expression and Reflection

One of the key ways that blogs are used is for self expression (Dredger et al., 2010; Kang, Bonk, & Kim, 2011) of individual opinions and ideas (Williams & Jacobs, 2004; Kerawalla et al., 2009; Hall & Davison, 2007); of emotions and self-disclosure (Hall & Davison, 2007; Freeman & Brett, 2012; Kang, Bonk & Kim, 2001); and of records of daily events and experiences (Kirkup, 2010; Sim & Hew, 2010; Freeman & Brett, 2012). At the heart of these kinds of blogs is personal experience with the subject matter, i.e., connections between the subject matter and one's life. Personal experience is considered highly important in blogging in a way that it is often not valued in traditional academic writing. Likewise, discussing emotions is encouraged whereas they are usually expected to be left out of academic writing.

While describing experiences and expressing opinions is important, self-reflection is a key for this type of blogging (Deng & Yuen, 2011; Brescia & Miller, 2006; Ferdig & Trammell, 2004). Reflection is considered to be "an active and deliberative cognitive process involving sequences of inter-connected ideas which take account of underlying beliefs and knowledge. Reflective thinking generally addresses practical problems, allowing for doubt and perplexity before possible solutions are reached" (Hatton & Smith, 1995, p. 34).

Further, reflective writing deepens students' understanding of their experiences with the subject matter they are studying (Hall & Davison, 2007; Zhang, 2009; Stiler & Philleo, 2003; Williams & Jacobs, 2004) because it allows them to explore multiple perspectives on it. In the process of reflection, students connect their current experiences with previous ones, thus situating the new within existing structures, helping students make sense of their self-expressions. The purpose of reflection, then, is "to synthesize the new experience/knowledge and be able to relate with previous

knowledge, forming a coherent perspective toward an issue or phenomenon” (Ahmad & Lutters, 2011, p. 4). Reflective writing is determined to be successful when “the student is critically questioning their own beliefs and practices” (Freeman & Brett, 2012, p. 1034).

It is commonly accepted that there are different types of reflective learning (Hatton & Smith, 1995; Freeman & Brett, 2012; Deng & Yuen, 2011; Schon, 1983, 1987;) Freeman & Brett (2012) outline Hatton & Smith’s (1995) categories to illustrate the way that reflection can be both personal and social. Hatton and Smith (1995) lay out four types of reflective writing:

- *Descriptive writing (unreflective)* which involves “simply reporting” and “writing concerned with skills in a given experience” (Freeman & Brett, 2012, p. 1036);
- *Descriptive reflection* which works to “provide reasons for events” and give “reasons for actions taken” (Freeman & Brett, 2012, p. 1036);
- *Dialogic reflection* which focuses on “stepping back from events” to analyze and integrate multiple perspectives, “recognizing inconsistencies, weighing competing claims and viewpoints; exploring alternative solutions” (Freeman & Brett, 2012, p. 1036); and
- *Critical reflection* which sees “events as located in multiple historical and socio-political contexts” and considers “ethical and cultural outcomes and influences” (Freeman & Brett, 2012, p. 1036).

Through Hatton & Smith’s (1995) framework, the forms of reflection move increasingly outward from individual personal experiences to cultural experience, situating individual opinions and experiences within larger cultural frameworks. These maneuvers can help students position themselves within larger social contexts while still valuing their own personal reflections. One type of reflection is not necessarily valued over another in this framework, though; they work together and can overlap. Students do not necessarily have to complete all versions for their reflections to be complete; the type of reflection that is most important depends on the goals established for the project.

Reflective learning in blogs helps promote critical thinking, including analysis, evaluation, and synthesis (Glass & Spiegelman, 2007; Oravec, 2002; Williams & Jacobs, 2004; Zeng & Harris,

2005; Sim & Hew, 2010; Zhang, 2009). Students must analyze the connections between their experiences and the course material--descriptive reflection--and between these experiences and others--dialogic reflection. They also have to synthesize multiple perspectives on issues when they receive feedback on their reflection, input that encourages them to rethink their own reflections. Further, reflective writing encourages learner-centered focus because "the learner is not simply a passive recipient but rather an active contributor within the learning process" (Ahmad & Lutters, 2011, p. 4). By actively engaging with the material rather than just passively consuming teacher-provided material, students take more charge of their learning process.

Reflective writing in blogs successfully illustrates Gallagher's (2010) generic commonplaces as well. In blogs, students typically use—and praise the usefulness of--informal language to explore their experiences and critically reflect on them. Also, teachers can encourage students to intertextually link to other texts throughout their blogs, thus encouraging them to practice dialogic reflection. Further, the purpose of reflective blogs is to think through issues, not to prepare thesis-driven answers, encouraging the rhetoric of the provisional. Reflective blogs, then, highlight the distinctive features of the genre and allow students to engage deeply with them in a way that encourages student-centered knowledge construction that can lead to a deeper sense of student ownership of that knowledge.

Social Communication

Research points out that another key use of blogs centers on its use for social communication. In their study, Deng & Yuen (2012) found that "blogs themselves are very social-oriented. That is to say, blogging was not just about capturing experiences or releasing emotions, but also about reaching out to get in touch and initiate communication with their fellow students" (p. 480). Blogs are not just places for personal expression, but also to interact with others for a variety of purposes in educational settings: 1. to communicate with other students in a way that makes the class more learner-centered and collaborative (Dredger et al., 2010; Hall & Davison, 2007; Kang, Bonk, & Kim, 2011; Freeman & Brett, 2012; Zhang, 2009; Yang & Chang, 2012); 2. to expose students to multiple perspectives to help with knowledge building (Leslie &

Murphy, 2008; Ellison & Wu, 2008; Ahmad & Lutters, 2011), and 3. to build a wider sense of community and audience that leads to a greater sense of student ownership of texts (Zhang, 2009; Halic et al., 2010; Ahmad & Lutters, 2011; Paulus, Payne, & Jahns, 2009; Bouldin, Holmes, & Fortenberry, 2006).

Learner-Centered Engagement/Collaboration

Too often classrooms are teacher-centered, with the instructor delivering information and students receiving it. Even in classes that use technology, teachers can still replicate these traditional patterns as they introduce the technology into the class. Blogs, as a potential Wave 3 technology, can offer a chance to shift this focus to a more learner-centered focus (Celsi & Wolfinbarger, 2002). As Yang & Chang (2012) point out, traditional “classroom discussion is often teacher-student centered, rather than a student-student dialogue. The blog is a vehicle to ensure that everyone has a voice and is a valued member of the learning community” (p. 127). When blogging, students get to select and explore topics that are of importance to them and receive feedback from their peers, thus participating in conversations with others about their interests. In this way blogs can decentralize power and emphasize student-centered learning, provide multi-directional and multi-layered interactivity, and encourage student feedback, co-participation, and negotiation (Kang, Bonk, & Kim, 2011, p. 232). All of these features emphasize a learner-centered classroom that focuses on communication between students rather than teacher-student which benefit students’ learning: “In that Internet-based communication technologies allow students to create and share their writing, as opposed to merely consuming texts selected by the instructor, these tools are inherently well-suited to support these kinds of constructivist, peer-focused experiences” (Ellison & Wu, 2008, p. 101). In these situations, students receive feedback quickly from their peers, thus becoming empowered as others value their ideas enough to engage with them. “This kind of environment makes a blog a learner-centered instructional site”(Glogoff, 2005; Higdon & Topaz, 2009) wherein students as individuals and as a group engage in an internal locus of control over their blogging (i.e. their learning) activities” (Kang et al., 2011, p. 228). The class, then, becomes much more collaborative and based on student-to-student communication.

Multiple Perspectives/Knowledge Building

By communicating with each other through blogs, students gain access to multiple perspectives that help them rethink their own position and construct new knowledge. As Hall & Davison (2007) point out,

Giving learners access to each other's work exposes them to a range of different perspectives on the same subject matter, thus providing additional opportunities to challenge their own understanding. Allowing learners opportunities to give one another comments and feedback enhances the possibilities around a subject area; it opens the further possibility of peer learning and peer support. (p. 168)

The benefits of being exposed to multiple perspectives, then, are twofold. First, students see the multiple ways of interpreting course material, thus having more perspectives to draw on as they critically reflect on their own understandings. Doing so helps them to engage more thoroughly in descriptive reflection and dialogic reflection because they now have more competing opinions and alternate views to consider (Freeman & Brett, 2012, p. 1036). Secondly, receiving feedback on their own posts helps to change their thinking about the ideas and their view of knowledge construction as well. Having peers engage with their ideas helps them see how knowledge is not a fixed entity but is constructed through ongoing negotiations within discourse communities.

Social construction of knowledge “happens by means of sharing knowledge, asserting different perspectives and interpretations, and critiquing viewpoints” (Halic et al., 2012, p. 207). Thus, posting their ideas and opinions and then refining those ideas through interactions with their peers helps students build their own knowledge, rather than just using blogs to communicate already formed answers. As Gallagher (2010) claimed, one of the key features of blogs is the rhetoric of the provisional—i.e., that the work of a blog is to question rather than to provide answers. Engaging with peers in sustained conversations around ideas can encourage them to see that knowledge construction is ongoing and ever changing. Learning thus becomes a co-emergent process (Park, Heo, & Lee, 2011, p. 152), based on engagement with multiple perspectives. Students interact collaboratively with each

other's ideas to construct knowledge rather than "find" already established truths.

Wider Community Audience/Student Ownership

Students want to communicate with others, to be a part of a community, and to feel connected to each other. Being part of a community motivates students. Shen and Chiou (2009) found that the stronger the link that people felt to the community, the greater the motivation they felt to post in their blogs (p. 403). Deng & Yuen's (2011) research showed that blogs helped students feel more connected to their peers and encouraged them to be more active participants in the class and in their blogging posts. They found that the blogs enabled social connectivity (Deng & Yuen, 2011, p. 450). Further, "Web 2.0 fulfills the need for relatedness as it allows students not only to interact with their instructor and peers but also to make connections with readers beyond the classroom audience (Baker, Rosendal & Whitenack, 2000)" (Park, 2013, p. 50). There is no guarantee that their posts will reach an audience beyond the class, but there is a potential, and this potential can transform the audience "from one person (i.e., the teacher) to a larger social community" (Sweeny, 2010, p. 127). This kind of interaction allows students to receive feedback on their ideas from at least their peers, thus making their blogs a part of a classroom community conversation—and perhaps a community beyond that. "The use of blogs gives students a chance to participate in a community. They learn that posted content can be read by people other than their teacher and classmates. The world can provide encouragement or feedback on student writings. Students interact with an authentic audience" (Zhang, 2009, p. 69), thus feeling like their ideas are important to people other than themselves and thus increasing their feelings of competence (Park, 2013, p. 48).

Knowing that they are writing for a wider audience/community has many benefits for students. First, it can encourage them to focus on writing better (Ellison & Wu, 2008, p. 106). "Creating content on the Internet with an awareness of audience enables students to experience autonomy and take ownership and publish quality work on the web (Lee 2001)" (Park, 2013, p. 50). When students realize that multiple audiences are reading their work, they often take extra care in producing it.

“Because students recognize that there is a social context for their work online, they often conform to certain roles or expectation without teacher prompting, because they want to impress their peers (West, 2008)” (Sweeny, 2010, p. 128) and the other groups who might read it. Further, Zhang (2009) points out that students often produce higher quality work because they want their readers to see their posts as valuable enough to respond to them. “Publishing in blogs motivates some students because they want to make an impact on readers with topics that were important for her. Posting makes them feel emotionally connected, happy, and eager to get audience responses” (Zhang, 2009, p. 69), therefore intrinsically impacting the quality of their writing.

Secondly, this care in writing can lead to a stronger sense of ownership, thus the public nature of the blog can help students take responsibility for their part in community interactions, making them active participants rather than passive watchers/readers. As Gallagher (2010) argues, “the most important contribution to writing pedagogy that blogs can provide might be intangible—giving students a feeling of ownership over their writing process—something that many students claim not to feel after too much formalistic writing” (p. 292). This sense of ownership helps them to participate in communities in ways that encourage them to see themselves as responsible members of the community, even as they feel a sense of ownership of their ideas—hence the unique public and private nature of blogging. Ownership is important because it helps students feel that they are engaged with and connected with others while still having a sense of autonomy with their work—an important combination not always achieved through other technologies like discussion boards.

Combined, reflection and social communication make blogs a distinctive genre that enact Wave 3 principles, principles that share similarities with learning theories like Self-Determination theory. As described by Deci and Ryan (2000), Self-Determination theory argues that everyone has three basic psychological needs—autonomy, competence, and relatedness. Technologies like blogs can accomplish all three aims because they provide a space for students to engage with a community of their peers (relatedness) while still maintaining their own voice in their blog (autonomy) and receiving feedback on their ideas to determine the value of the ideas (competence) (Park, 2013, p. 48)

The technical aspects of blogging . . . become the enabler of personalized and collective learning networks of integrated communication. Such a system functions when bloggers use the blog both as their individual online diary for self-presentation and individual learning as well as a networked space for communication and collaboration among themselves. In other words, the experience of blogging in an educational environment reveals many interesting and pedagogical possibilities. (Kang, Bonk, & Kim, 2010, p. 233)

These possibilities can be achieved when students engage with and connect to communities of peers and outsiders who value individuals' ideas. The interaction around the posts encourage collaborative knowledge making that still values individual contributions while acknowledging the social nature of those contributions.

Limitations

While blogs offer many promising uses, there are limits that must be addressed. In this section, I address the following key limitations that teachers face when implementing blogs into educational environments: how and why students should write in blogs; how much and what kind of guidance teachers should provide students with; how teachers and students should deal with lack of comments/feedback on blog posts, and how teachers should encourage students to see intrinsic value in blogging even though it is assigned by the teacher.

How and Why to Write in Blogs

Students are often confused about expectations about the blogs. Kerawalla et al. (2009) found that students lacked awareness about "what to write in them and why" (p. 32). Students are also not familiar with writing in the informal style, in the personal address or in the rhetoric of the provisional when they are writing in the academic space (Gallagher 2010). Farmer et al. (2008) found that "students might have benefited more from some direction in experimentation with style and point of view, as it proved difficult for students to conceptualize the task of blogging about their own personal interests and experiences within the context of a course" (Freeman & Brett, 2012, p. 1039). Since students are not often asked to draw on personal experiences in

academic writing, being asked to do so can seem foreign, and they may not have any precedence upon which to draw in order to guide them. Further, students often do not receive encouragement to use blogs on an ongoing basis, typically receiving help at the beginning and then being left on their own. “The novelty factor creates student interest in starting to use blogs. It is claimed that blogs work best when learners get into the habit of using them. Finally, if learners are not encouraged, blogs can quickly be abandoned” (Zhang, 2009, p. 66). Students are often not able to answer the questions, “Why am I blogging?” and “What’s in it for me?”

How Much and What Kind of Guidance to Provide

Another limitation to blogging is a debate among researchers about what kind of guidance to provide students (Park, 2013; Ellison & Wu, 2008; Kerawalla et al., 2009; Buzzard et al., 2011; Freeman & Brett, 2012; Minocha, 2009). Students need some guidance in how to use blogs in an educational environment because even if they are familiar with blogging, they are typically not familiar with blogging in academia the amount and kind of guidance is not as clear.

In the analysis of student perceptions, Chu et al. (2012) found that when the cohort was given no guidance about frequency there was limited usefulness because the blog relied on student initiative and when the cohort was required to post weekly there was a sense that the blogging process was too formal (Freeman & Brett, 2012, p. 1034).

This is but one paradox that plagues blogging assignments in classes when the teacher’s goals are to encourage students to feel a sense of ownership for and responsibility to their blogs rather than seeing it as only an assignment. Since blogs in educational settings are still fairly new, students often need guidance, but too much guidance can stifle creativity and ownership; yet, too little guidance can mean that blogging flounders, students lack focus, and they become frustrated with the process. Further, guidance that may work early on may not be as effective later in the semester. Freeman & Brett (2012) found that students determined some kinds of prompts to be useful in the beginning of the semester, but saw them as constraining later on (p. 1039). Finding

the exact balance of guidance is a tricky matter when adopting a new technology into an educational environment.

How to Deal with Lack of Comments/Feedback

As we saw earlier in the article, one of the distinctive features of blogs is the conversational nature of them, achieved through the comments feature. The benefits of peer feedback and interaction have been touted by many (Deng & Yuen, 2011; Park, Heo, & Lee, 2011; Hall & Davison, 2007; Xie, Ke & Sharma, 2008; Kerawalla, et al., 2009). However, achieving these benefits is not as easy or as universal as it may seem from the claims listed earlier. One of the biggest limits faced in the blogs was the lack of student comments on blogs (Krause, 2004; Hamik & Melis, 2006; Williams & Jacobs, 2004; Diviniti et al., 2005). Kerawalla et al. (2009) argued that “minimal communication between students through blogs” plagued courses (p. 32). In the course they studied, because students received very few comments from their peers, “the blogging activity failed to generate socialization, so many students thereafter either blogged for themselves or gave up” (Kerawalla et al., 2009, p. 40). In their study, Park, Heo & Lee (2011) found “the blogging was not perceived as an activity that can play an important role in creating membership in communities” (p. 158) because there was little interaction between participants. Even though blogs have the potential to build communities, many studies found that students did not comment on each other’s work (Ellison & Wu, 2008; Deng & Yuen, 2011; Freeman & Brett, 2012). In fact, students found that reading each other’s blog posts was more useful than writing their own posts, reading comments to their posts, or writing comments on other’s posts (Deng & Yuen, 2011; Ellison & Wu, 2008).

Research reveals that there is a tension between the potential for peer feedback and interaction and the difficulties of achieving that goal (Halic et al., 2010; Ellison & Wu, 2008). Part of the difficulty lies in the fact that students are hesitant to provide feedback because they do not want to critique each other’s ideas (Deng & Yuen, 2011; Ellison & Wu, 2008). Another part of the problem is that students do not see their peers’ comments on their own posts as valuable to themselves, so they do not place value on commenting on other’s work. Yet another aspect of the problem lies in the fact that when peers do make comments, the original

writer rarely makes a response to the peer; thus the conversation stops with the first responder (Deng & Yuen, 2011). Perhaps the overarching difficulty, though, is that blogging has new social norms associated with it, and teachers do not necessarily make those norms explicitly clear to students. It is not just a matter of learning how to use the technology, but to learn the norms associated with blogging—for example, the norm of having healthy debates about the issues posted rather than acquiescing to each other's points. To accomplish these goals requires students to switch from Wave 1 and 2 thinking to Wave 3 thinking (Celsi & Wolfenbarger, 2002) and, as Downes (2004) says, develop a new attitude toward thinking and learning. These meta-narrative conversations about cultural norms are often lacking in classrooms that adopt blogging technologies.

How to Encourage Students to See Intrinsic Value in Blogging

Perhaps the biggest limitation of using blogs in an educational setting, though, is the paradox between asking students to willingly participate in writing blogs while requiring them to do so. As Grell and Rau (2010) write, “The fundamental question is: Is it possible to achieve participation, self-reliance, maturity and autonomy through control and heteronomy?” (p. 7). When assignments that are meant to be learner-centered are obligatory, can the assignments encourage the kind of learner-initiated participation teachers want? “Learners’ views and teachers’ views of the situation, interaction and environment are different . . . the key problem or challenge in a teaching and learning environment that is based on self-direction and participation—following constructivism, situated learning, pragmatism, or similar contemporary theories of learning—is to balance these interests” (Grell and Rau, 2010, p. 7). Teachers want students to be intrinsically invested in blogging and so they create assignments that encourage students to blog about their interests; yet students still realize that they are required to complete the assignments, whether they are intrinsically motivated or not. No matter their best intentions, teachers still control the academic situation. “Teachers initiate the collaborative learning process by setting the rules. Due to the assessment criteria external control and compulsion become part of the learning environment” (Grell and Rau, 2010, p. 1). As a result, “Ebner et al. (2010) found that

students may pretend to participate when they were forced by obligatory assignments: ‘students appeared to be “playing the game” rather than using the tool for their own purposes (p. 97)” (Grell and Rau, 2010, p. 4). This situation poses quite a challenge to teachers because the students’ interpretations of the assignments are often in direct opposition to the teachers’ pedagogical goals. All of these limitations pose challenges to instructors who are working to implement cyberlearning into their classrooms in an effort to create learner-centered pedagogy. In the next section, though, I offer recommendations for teachers that work to overcome these limitations.

Recommendations for Teachers

Using Blogging to Meet Pedagogical Goals

While blogging can provide many benefits, teachers must think carefully about how to use them. “Blogging (like any new technology) is not a panacea and will not independently or autonomously increase student learning. . . . Instructors need to utilize instructional blogging in ways that support the particular content area being taught and are also pedagogically sound and technically sound” (Ellison and Wu, 2008, p. 117). As Ellison & Wu (2008) point out, the power of technology use comes when it aligns with our pedagogical goals. Since technology itself is not a panacea, it is important for teachers to consider why they are adopting the particular technology and how it meets their pedagogical goals. As Celsi and Wolfinbarger (2002) write, “perhaps the most important argument for facilitating the adoption of new technologies and new uses of technologies is that they can result in better achievement of learning goals” (p. 69). However, it is crucial that teachers ask what the pedagogical goal is and then determine if the blog is the best way to achieve it. A goal for Wave 3 technology is for students not only to “respond with traditional comments to the instructor and to one another, but more importantly, they also begin to take an active role in creating and directing class content” (Celsi and Wolfinbarger, 2002, p. 68). Students’ use of blogs, if encouraged to be interactive, can achieve these goals. Once the instructor has determined the pedagogical goals for the blogs, she/he needs to make those goals explicitly clear to the students.

What goals should teachers focus on at the current moment when there are rapid changes in what counts as literacy? According to Sweeney (2010), the new skills students will need are as follows: “problem-solving and critical thinking; collaboration across networks and leading by influence; agility and adaptability; effective written and oral communication; accessing and analyzing information; curiosity and imagination” (p. 122). Some of these look very familiar to traditional pedagogical goals, but they are going to be located within digital media, as Daley (2004) points out. According to Daley (2004), in the future students will need “the ability to negotiate through life by combining words with pictures with audio and video to express thoughts will be the mark of the educated student” (cited in Yancey 305). If teachers align blogging with these pedagogical goals, they will be serving students’ needs as they move forward into a world that will require new literacy skills.

Providing Guidance on How to Use Blogs for Posting and Commenting

Students need guidance on how to use the technology, how to write for the medium or genre, and how to provide effective feedback that promotes interaction (Park, 2013; Ellison & Wu, 2008; Kerawalla et al., 2009; Buzzard, et al., 2011; Freeman & Brett, 2012). Before writing blogs, students benefit from technical instruction about how blogs work: “Even if students are digital natives, they still need guidance on how to use the technologies in educational settings” (Buzzard et al., 2011, p. 138). Since the genre of blogging asks students to draw on personal experience and opinions about course material—tasks students might not be familiar with or comfortable with because of the traditional academic writing they are used to—teachers should provide guidance in how to write for this genre (Gallagher, 2010). Teachers can provide examples, effective prompts, and guidelines that explicitly explain the specifics of the genre.

Finally, since feedback and interaction are crucial aspects of blogging and are often ones that are not achieved thoroughly, teachers need to provide students with guidance about how to provide useful feedback and to respond to their peers’ feedback in order to create authentic conversation and interaction. Ellison & Wu (2008) found that “instructors wishing to implement peer

feedback should give students guidance about how to provide constructive criticism. Instructors should emphasize that respectful disagreements are acceptable and helpful” (p. 118). Often, students are hesitant to post feedback because they do not want to critique each other’s ideas, so learning to respectfully engage with each other’s ideas—even when they disagree with them—is an important process for students. Also, students must learn that they need to respond to the feedback they receive. All too often, students do not respond to the feedback from their peers, thus the dialogue stops abruptly (Deng & Yuen, 2011). Teachers need to encourage students to continue the conversation over time, emphasizing the potentials of sustained interaction rather than one-time posts. Such sustained interaction encourages a learner-centered focus where the class focuses on peer-to-peer interactions rather than instructor-to-student delivery of information.

Writing Effective Prompts for Blog Posts

Studies have found paradoxical results about the most effective ways to create prompts for blogging assignments (Ahmad & Lutters, 2011; Halic et al., 2010; Kerawalla et al., 2009). Some have found that structured posts are best while others found that students consider structured prompts constraining (Freeman & Brett, 2012, p. 1039). What is clear, though, is that teachers should provide some sort of prompts to guide students with their blogging. It seems best that prompts in a class should be a mix of structured and unstructured (Halic et al., 2010). Structured blog posts seemed to be useful because they resulted in “more focused course-specific blogging” (Halic et al., 2010, p. 211) while unstructured posts “may result in conversation among students” (Halic et al., 2010, p. 211)—both of which are useful in achieving classroom goals. Presenting the prompts as a series of questions can also provide guidance without prescribing how students should write the blog. In order to best meet students’ needs, though, teachers could begin with prompts and then survey students to determine what they find useful and less than useful, adjusting the prompts throughout the semester in order to meet students’ desires. Doing so will make the blogs student centered and appropriate for a particular group of students. If one of the goals for and uses of blogs for students is to critically reflect on their learning, asking them to reflect on the success (or lack thereof) of the blogging process to date in the

course is a good step to encourage them to step back from their experiences and reflect on them, thus enacting the descriptive reflection that Hatton and Smith (1995) describe. Further, asking students to engage in conversations with each other's blog posts can lead to Hatton and Smith's (1995) dialogic reflection in which they weigh multiple perspectives on their learning experiences. Both descriptive reflection and dialogic reflection are valuable to students because they help to evaluate their learning experiences and consider other possible learning strategies to use as they continue to work on their blogs. These student reflections are also useful to the instructor as she or he decides how to progress with the structuring of the blog prompts (Wheeler, 2009; Chang, 2009; Halic et al., 2010).

Developing Clear Student Purpose/Motivation for Blogging:

In order for students to see intrinsic value in the blogs and complete them because they see value in them rather than just for course credit, "students need to develop a purpose for blogging that is of clear benefit to them." (Kerawalla et al., 2009, p. 32). They have to be able to have a good answer to the question "what's in it for me?" and the answer needs to be something other than "a good grade." It's helpful to look at what motivates real-world bloggers and see how those characteristics can be applied to educational blogging. Freeman and Brett (2012) define effective educational blogging that draws on real world blogging characteristics as writing that

1. repeatedly demonstrated the interests of the writer beyond that of course content;
2. explored personal beliefs and experiences outside the confines of the course topics;
3. and showed effort beyond that of fulfilling a course requirement by frequently following topics with timely posts. (p. 1035)

Their definition of educational blogging illustrates that internal motivation is at the heart of it. Students who draw on these characteristics are more likely to complete the assignments because they are interested in the task and see personal value in it. Thus, research shows that it is important to draw on student motivations and make them a central part of the course (Freeman & Brett, 2012; Dredger et al., 2010; Grell & Rau, 2012). Dredger

et al. (2010) argue that asking student what motivates them is an excellent way to create blog assignments that mean something to students. When asked “what would you like your English teachers to know about what motivates you to read and write?” (Dredger et al., 2010, p. 91), students responded “make it interesting, make it relatable to me, and make it fun” (Dredger et al., p. 91). Students want to write on topics that they find intrinsically interesting and that allow them to practice the skills Sweeny (2010) argues are important—“curiosity and imagination” (p. 122). They want blog assignments that emphasize “agility and adaptability” (Sweeney, 2010, p. 122) rather than ones based on fixed, pre-determined answers. Assignments that draw on these aspects will motivate students. Engaging students’ “enjoyment, curiosity, and sense of efficacy” (Dredger et al., 2010, p. 87) helps students interact actively in blogging and motivates them to write for their own purposes rather than just for completing an assignment. Students need to ask, “Why do I want to blog?” (Kerawalla, p. 39) and have an answer that motivates them.

Conclusion

Current research shows that “it is important that teachers are aware of and able to use new literacy practices, such as blogging, instant messaging, website creation, and social networking” (Dredger et al., 2009, p. 87). Teachers’ uses of this technology should be based in a Wave 3 philosophy of discontinuous innovation, meaning that it “results in a fundamental change in what the classroom is and a significant change in the behaviors and meanings associated with it” (Celsi and Wolfenbarger, 2002, p. 67). Rather than using technologies to replicate traditional pedagogical practices, new technologies should be introduced in ways that challenge those traditional conceptions of learning, literacy, and literacy practices.

Researchers have found that blogs are a good example of one such technology that can be introduced into the classroom to achieve the goals of Wave 3 technology use and the learner-centered goals that attend it. Blogs are well-suited to educational environments because blog writing and comments can help students see divergent points of view which can lead to critical thinking and analytical skills; students can become more invested in their writing because they are reaching an audience larger than

the instructor; through blogging, they learn to express themselves in a digital environment, and gain important digital literacy skills; and the learning space is decentralized and participatory (Ellison & Wu, 2008, p. 105). Blogs can draw on the kind of writing students are already doing. As Sweeny (2010) points out, “writing is an integral part of students’ lives today due to their use of texting and social networking sites, but most students do not recognize this type of communication as writing. In fact, they see it as separate from the writing they do in school” (p. 124). Teachers should “integrate these forms of communications into literacy instruction in an effort to bridge the writing students do naturally and the writing schools typically require in the classroom” (Dredger et al., 2009, p. 86)—no matter what the discipline. Thus, “to create authentic spaces for learning, teachers must work to integrate preexisting literacy practices that build upon the funds of knowledge students bring with them to the modern day classroom” (Dredger et al., 2009, p. 87). Students can then become more engaged in their education and may feel that their practices and the knowledge associated with them are valued. In order to do this, teachers will have to take a “‘network orientation rather than simply a writing orientation’ (Burgess, 2006, p. 109-110)” (Halic, et al., 2010, p. 206). In this network orientation, writing is less about fixed notions and more about exploring ideas; less about text-only and more about intertextual, multimodal linking and engagement.

And how do teachers prepare *themselves* to teach students to be reflective cyberlearners and to use blogs critically? There are multiple approaches that teachers can take, but ultimately, they should themselves be bloggers and have their own blogs. In addition, they can blog with their students, perhaps creating a class blog, doing the blog assignments the students are completing and giving them access to the teacher’s blog, and being an active participant in students’ blogs. It is not enough, however, to only be a participant in students’ blogs; teachers must have their own blogs in the class and perhaps, more importantly, outside the class to show that they maintain a blog in a sustained way. They must do this in order to have the literacy skills that are necessary to help students who might need guidance and to engage with students who already have extensive experience with blogging. Doing so will also provide them with an interest in and perhaps a passion for

blogging that they can then extend to their students. One could say that having a blog lends credibility and authority to the instructor and that is the reason a teacher should have one; that is certainly one way to look at the situation. However, I would encourage us to think of it in terms of joining a community with our students, of seeing ourselves as part of a community of bloggers. If teachers espouse the value of blogging for learning and if they espouse the fact that the classroom is a two-way learning environment (i.e. they learn from the students just as much as the students learn from them), then it only makes sense for them to have a blog as well. If teachers want their students to be intrinsically motivated to write blogs, teachers themselves must model that behavior by being interested bloggers themselves.

A review of research on blogging helps us understand both the benefits and limitations of using the medium in academic settings, along with ways of overcoming those limitations. Students can benefit from engaging with writing in this medium because it allows them to critically reflect on themselves as writers and on their writing. In order to achieve these benefits, though, teachers must approach blogs from a critical perspective. Through conscious, critical effort, “the experience of blogging in an educational environment reveals many interesting and pedagogical possibilities” (Kang, Bonk, & Kim, 2011, p. 233) that teachers should consider taking advantage of in writing classrooms.

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STUDENT-INITIATED CONTACT WITH PROFESSORS: A COMPARISON OF FACE-TO-FACE, HYBRID, AND ONLINE STUDENTS

by

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Abstract

The researchers compared the student-initiated interactions with the professor across three course-delivery methods for a single course throughout a full semester, looking at the modality of those interactions, the amount of time required by the professor for engagement (or response to) for the interactions, and the purpose of the interactions. The researchers found that the students in the hybrid and online course-delivery methods initiated more interactions and required more of the professor's time than did the face-to-face students. Email was the modality used most by the students. Content clarification and tech issues were the most common purposes for the interactions.

Introduction

One of the researchers was assigned four sections of a single course with three delivery methods (one face-to-face class; one hybrid class; two fully online classes) for the Spring 2009 semester at a large Southern university where she was a full-time faculty member. This provided her with the opportunity to compare the interactions students initiate with the professor based on the way the course information was delivered.

The Emerging Role of Electronic Communication Between Students and Professors

In 1996, Gilbert stated that "1995 was the year when student and faculty use of electronic mail exploded" (p. 412). He further stated that the use of electronic mail and the World Wide

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Web in the mid-1990s was analogous to the revolution that had occurred in the 1980s when word processing had brought computing to general usage in the academy. In what was considered revolutionary at the time, he stated:

More faculty members began offering their email addresses to students and inviting them to ask course-related questions via email, as well as during regular office hours. Although neither the faculty nor the students consider this a marked departure from traditional practice, many faculty members report even this simple use of email increases the participation from categories of students usually underrepresented in class discussions. (p. 412)

He went on to indicate that while most faculty reported that usage of email provided significant increases in their workload, they added with what he called “pleasure and pride” the fact that the interactions increased the learning that took place in their classes as well.

By 2005, Biesenbach-Lucas confirmed Gilbert’s prediction when she determined that email had become one of the most frequently used ways that students used to consult with faculty, and that it was replacing to a large extent the traditional office hours in which students and faculty interacted in a face-to-face manner. She purported that students chose this means because of convenience based on the fact that their schedules may not have intersected well with the faculty members’ established office hours. She indicated that the messages of the email interchanges she examined fell into the three major communication topics of facilitative, substantive, and relational, and that the communication strategies that students used were primarily those of requesting, negotiating, and reporting.

She found that there were of course both advantages and disadvantages related to email interaction between faculty students. The major advantages involved the transmitting of assignments, getting announcements out quickly, and receiving instructor input between classes. She stated the disadvantages as “absence of paralinguistic clues, uncertainty of successful electronic transmission of messages, and lags in response time, or lack of interactional coherence” (p. 24).

Two years later, Biesenbach-Lucas (2007) refined her statements, with “While some research claims that email, due to absence of non-verbal cues, encourages informal language, other research has claimed the opposite. However, email technology also allows writers to plan and revise messages before sending them, thus affording the opportunity to edit not only for grammar and mechanics, but also for pragmatic clarity and politeness” (p. 59). She further found that the primary reasons for usage of email by students included the primary purposes of: building a relationship with the professor, asking for information about course materials and about what will be on quizzes, explaining reasons for late assignments or missed classes, questioning grades, and discussing the course content.

Glaser (2006) determined that email at universities has made professors more approachable, but that some professors indicate that it has erased the boundaries that were appropriate between faculty and students. In addition, students now expect faculty members to be available around the clock and feel that they can send numerous emails that are informal and sometimes inappropriate. He quoted one professor who felt that sometimes the tone of the emails was too familiar and seemed to border on the imperative. He felt that it was difficult to accommodate students appropriately while still maintaining the power structure that authorizes the professor to make demands on the students instead of the students making demands on the professor. However, he also found that, in the case of every professor that he interviewed, each stated that instant feedback could be invaluable, especially in terms of clarifying content.

Sheer & Fung (2007) studied the email interactions of 400 undergraduate students with their professors. They found that email communication made a positive contribution to the relationship between the professor and the student as well as to the teaching evaluation given by the student to the professor. The chief factors leading to this positive contribution were the professor’s helpfulness in the email, how promptly he or she replied, and the frequency of social-relationship emails.

A study by Arbaugh (2001) concluded that, if instructors were able to lessen the distance between the students and their instructor, student satisfaction was found to be higher. Brooks (2003) determined that one of the leading factors that could lessen

that distance was the amount of communication between the instructor and the students. She further indicated that email was the most common form of electronic communication. But, according to Smith, Ferguson, and Caris (2002), it is more than the professor simply responding to the students via email that counts the most. It is the online presence of the instructor, and the feeling for the students that the instructor is available in the same way as a face-to-face professor that counts. In other words, she is present on a regular basis as if the course were actually meeting.

Brooks (2003) indicated that the live interaction that exists in a classroom is superior to other communication because nonverbals can be measured instantaneously, the instructor can capture the full attention of the students at one time, and he or she can answer student questions immediately. O'Quinn and Corry (2002) add that the new types of communication can be challenging for traditional faculty members who are used to doing most of their communication with students in a face-to-face situation. Still, they believed, even back in 2002, that these new ways of communicating could be as dynamic as in a traditional classroom and that faculty could adapt to them.

The Purpose of the Study

The purpose of this study was to determine if the delivery method of the course (face-to-face, hybrid, or fully online) affected the student-initiated interactions that took place between the professor and the students. In this study, the number of interactions that were initiated by the students, the modality of the interactions that occurred, the purpose (or content) of those interactions, and the amount of time required of the faculty to engage in the interaction were compared.

Design

In this study, the researchers maintained a log of all student-initiated interactions between the professor and her students in four sections of a single course over the course of the 2009 spring semester. The logs included the student's name, the student's course section, the modality of the interaction, the purpose (or content) of the interaction, and the amount of time required of the professor for engagement in the interaction.

Analysis

The researchers determined the overall number of interactions, the amount of time required for those interactions, the modality of the interactions, and the purpose of the interactions. They also determined averages for those factors per student and they compared those factors across the three types of classes (face-to-face, hybrid, online).

Subjects

The course for the study was an undergraduate assessment course for pre-service teachers taught at a large public university during the regular spring semester. All four sections were taught by the same professor (who was also one of the researchers). It was a required course for both secondary and elementary majors, and contained fourteen weekly modules, a midterm, and a final exam. The modules were presented fully online for the online courses using the Blackboard platform. The modules were presented partially online and partially in class for the hybrid class. The information in the modules was presented in class for the face-to-face class, but the assignments and assessments were all submitted on Blackboard for all four sections.

The researcher had experience teaching in all three course delivery methods, and maintained both an on-campus and online presence (SKYPE and email) for her students throughout the semester. She provided PowerPoints with voice-over narration for her online students that mimicked her presentations in class. All assignments were submitted via the Blackboard platform for students in all sections. In addition, the two exams (midterm and final) were taken on Blackboard as well.

The students whose interactions were logged were all juniors and seniors in a teacher education program leading to teacher certification at the elementary, middle school, or secondary level. The face-to-face class contained 26 students; the hybrid class contained 15 students, and the two online sections had a total of 31 students.

Classification of Interactions

Duran, Kelly, & Keaton (2005) stated “In spite of the potential of email to enhance faculty-student interaction, there is a limited amount of actual research on instructional uses of email,

and even less research on email exchange between faculty and students” (abstract). In their report, they found that the primary usage of email by students directed to their professors was to make appointments, to clarify and gain information about course material, and to offer excuses for late or missed submissions of assignments.

Bloch (2002), in writing about email communication between graduate students for which English was a second language and their professors, found that not only did email serve to help students develop fluency, but that it was also used to create and sustain relationships, as it allowed the student and professor to interact outside the classroom. He found that the student-initiated emails sent to their professors could be classified into the four areas of:

- 1) phatic communion
- 2) asking for help
- 3) making excuses, and
- 4) making formal requests.

Phatic communion is a linguistic term meaning that the purpose of the interaction is simply social in nature.

Keane (2007) stated that her reason for doing her dissertation on the role of email in faculty-student relationships was that there was a dearth of information regarding the impact of email communication on the relationships between faculty and students in spite of the fact that it has widespread usage. Using a survey, she determined that students preferred to contact faculty by email rather than face-to-face, and in follow-up interviews she found that it was a result of some students feeling intimidated during face-to-face interactions with professors. Interestingly, she also found that gender played a role, and that female students were more likely to email female professors while male students were more likely to email male professors. She also found that students’ trust in the professors increased as a result of being involved in email correspondence with their professors.

Purpose of Interactions in This Study

In this study of the interactions students in the four sections of the assessment course initiated, the researchers determined that the purpose of the student-initiated emails sent to the professor fell into the broad categories of: content clarification, assignment

clarification, technology issues and questions, deadline extension requests or explanations, assignment submissions, grading clarifications, phatic correspondence, and a non-specific category. Once the emails had been classified, the researchers further looked at the non-specific category and determined the further categories of special requests, no textbook notification, and a category the researchers left as *other*. The researchers assigned each email to one or more categories. If an email addressed more than purpose, the email was counted as only one email and was given either 0.5 for each category if two purposes were addressed or 0.33 for each category if three purposes were addressed.

Content clarification. Interactions that were classified into this category represented those that asked the professor about actual concepts taught in the class or asked for help in figuring out answers for formative assignments and formative quizzes that students could take multiple times until a pre-set deadline.

Assignment clarification. This category involved the clarification of an assignment from one of two viewpoints. In most cases, students were *asking* specifics about assignments before they submitted them. However, in some cases students were *explaining* some aspect of the assignments they had submitted.

Technology issues and questions. This category is self-explanatory. Common emails concerned having difficulty submitting an assignment via Blackboard or Taskstream, needing an assignment cleared so the student could re-submit an updated version, or having problems completing a test because the computer screen froze or locked the student out.

Deadline extension requests or explanations. This category involved two basic types of interactions, but they were related in nature. Students were either asking if a deadline could be extended or explaining why they had missed a deadline or possibly a class.

Assignment submissions. Although assignments were to be submitted via the Blackboard platform, some students sent assignments via email instead. The researcher would respond to the students that they should submit the assignments via Blackboard. The emails in this category tended to stop after the first few assignments as students learned the Blackboard platform.

Grading clarification. This category primarily involved students questioning why points had been deducted or why a particular answer to a quiz question was not the one they had chosen.

However, some of the emails in this category involved students explaining why they had answered a question a particular way (which was encouraged) or their belief about why a particular answer should be accepted.

Phatic correspondence. As described in the introduction to this section, this category involved interactions that were sent simply for the purpose of building a relationship with the professor. If a student sent an email that involved another of the categories, and simply said, “Thank you for _____,” that email was not categorized into phatic correspondence. However, if a student went further and wrote an email that was clearly for the purpose of building a relationship, it was counted in this category.

Modality of Interactions. The student-initiated interactions were classified into the following modality categories:

1. in-person
2. email
3. synchronous electronic (SKYPE)
4. phone

In-person. The student-initiated interactions that took place in person occurred before or after class in the classroom, or in the professor’s office.

Email. This category involved emails that were sent by students to the faculty member.

Synchronous electronic. The tool used for this was SKYPE. Interactions via SKYPE were further delineated as audio, video, and text.

Phone. All student-initiated phone interactions involved calls placed by the student to the faculty member’s office, or the return of a phone call by the professor if a student had left a message.

Results

The researchers determined that 883 individual student-initiated communication events took place during the semester, and those interactions involved 2444 minutes of the instructor’s time. This meant that the average time spent for each interaction was 2.8 minutes. Since there were 72 total students, the average number of interactions per student was 12.3, and the average amount of time required per student was 34.0 minutes.

By Modality

The interactions were classified into four categories. These were in-person, by email, through synchronous electronic (SKYPE), and via phone call.

Percentage of interactions per modality. The largest percentage of the interactions was by email, with 82 percent. The second largest modality was in person, with 11 percent. Electronic synchronous communication represented 6 percent, while only one percent was by phone.

Time required by the different modalities. Seventy-three percent of the time the instructor spent involved with student-initiated interactions was by email. The second most common method was in-person, with 14 percent. Eleven percent of the interaction time was using SKYPE, and the remaining one percent was via phone.

There were differences among classes. While the highest percentage of time spent was via email for all the sections, there were differences in the breakouts. The face-to-face sections used email the most, with 80 percent. This was higher than the percentage of the other course delivery methods (67% for the hybrid students and 73% for the online students). Not surprisingly, the second highest modality for the face-to-face and hybrid sections was in person with 15 percent and 27 percent respectively. Those interactions took place before and after class as well as in the professor's office. Only 7 percent of the interaction time was in person for the online sections, and of course, all of those interactions took place in the professor's office. They used SKYPE more than the other sections with 19 percent of their interaction time via SKYPE. For all sections, the phone interactions involved only one percent of the professor's interaction time. Table 1 shows the specifics for each modality for each of the course delivery methods.

Table 1: Percentage of time spent per modality for each course delivery method.

Percentage of Time Spent Per Method For Each Course Delivery Method			
	F2F	Hybrid	Online
Email	80.09	67.21	72.67
In Person	14.63	26.33	7.22
Phone	1.28	1.08	1.46
SKYPE	4.00	5.39	18.65

Number of interactions per student. There were 72 total students in the three sections. Since there were a total of 883 interactions, that equates to approximately 12 interactions per student. However, the number of interactions per student in the face-to-face section was approximately 11 interactions, while the hybrid section had 15 interactions per student, and the online sections had 12 interactions per student.

Amount of time per student. There were 72 total students in the three sections. Since there were 2444 minutes of interaction time by the instructor, the average amount of time spent for each student would be approximately 34 minutes. However, the amount of time per student for the face-to-face section was the lowest amount of interaction time required at 27 minutes per student. The hybrid section was significantly higher with 43 minutes per student, while the online sections were 35 minutes per student.

Purpose of Interactions

The researchers classified the interactions into seven specific categories and a non-specific category called *other*. The seven specific categories were content clarification, assignment clarification, technology issues and questions, deadline extension requests or explanations, assignment submissions, grading clarifications, and phatic correspondence.

Number of interactions for each purpose. The purpose of the most interactions was content clarification, with 189 interactions representing 21 percent. Tech issues were the purpose of 165 interactions, representing 19 percent. Phatic communication included 128 interactions, representing 15 percent. Two other categories (assignment submission, grading clarification) were 12 percent and 13 percent. The remaining categories (deadline extension, assignment clarification, and other) were all less than 8 percent.

Time spent for each purpose. In terms of time, the purpose of the interactions that required the most time of the professor was content clarification (714 minutes, which was 29% of the time).

Two other categories represented 16 percent of the time each. They were tech issues and grading clarification. The next highest category was assignment submission, representing 10 percent of the faculty member's time. The remaining categories

(phatic communication, deadline extension, assignment clarification, and other) were all less than 9 percent.

Since there was a difference in the number of students in each section, the researchers determined the percentage of time that would be expected per section and compared it to the actual amount of time spent on each purpose. Table 2 shows the breakout.

Table 2: Breakout of time by purpose across course delivery methods.

	F2F n = 26	Hybrid n = 15	Online n = 31
Expected %	36%	21%	43%
Content Clarification	30%	24%	46%
Tech Issues	33%	20%	47%
Phatic Communication	39%	24%	37%
Assignment Submission	32%	28%	40%
Grading Clarification	35%	24%	41%
Deadline Extension	38%	36%	26%
Assignment Clarification	35%	30%	35%
Other	25%	32%	43%

Of note (determined to be more than 3 percent away from the expected percentage), the face-to-face section required less time on content clarification than would be expected, while the online and hybrid sections required more. The online sections also required more time than would be expected on tech issues, but they required less time for phatic communication. The hybrid section required more time for assignment submission than would be expected while the face-to-face section required less. In terms of deadline extension, the hybrid section required a lot more time than would be expected while the online section required a lot less time.

Discussion

There was a difference in the number of interactions per student across the course delivery methods with the hybrid section having 15 per student, while the online section had 12, and the face-to-face section had 11. However, that does not tell the whole story. The amount of time spent in interactions shows greater disparity.

The amount of time spent by the professor in or responding to student-initiated interactions was a total of 2444 minutes, or approximately 41 hours. Over a 15-week semester, that meant the faculty member spent approximately 2.7 hours per week doing this work. However, the amount of time spent in those interactions was not evenly distributed across the course delivery types. Again, the hybrid section involved the professor the most with an average of 43 minutes per student required, while the online sections required 37 minutes per student and the face-to-face sections required only 25 minutes per student. Possibly, the larger amount of interaction in the hybrid section occurred because the students had both the opportunity to interact with the professor before and after class during the occasional meetings of the course, but they also interacted with her using electronic means. Still, it is important to note that the amount of time spent per student on this part of a professor's work required 72 percent more time for the hybrid students than for the face-to-face ones, and 48 percent more time for the online students than for the face-to-face ones.

Also of note was the fact that SKYPE was used for 19 percent of the time the professor spent in interactions with the online students, but included in that, most of the interactions (16 of the 19%) were via text. This, combined with the fact that the majority of the interactions for all sections was by email would lead one to the conclusion that the students preferred to interact using the written word. While SKYPE was available to all students, it was not used extensively by the face-to-face or hybrid sections, and the online students were the only ones who decided to use the video-conferencing function of SKYPE with the professor.

Purpose

In terms of purpose, the online students needed more content clarification and had more tech issues than the students in the other course delivery types. Interestingly, they had fewer communications related to deadline extensions and assignment clarification.

Content clarification. The researchers postulate that the online students had only the written assignment guidelines to use to create their assignments and submit them on time while the face-to-face and hybrid students had both information that was communicated

in class as well as the written assignment. With more inputs, there was more opportunity for miscommunication of the expectations. Another possible explanation was that the online students may have been taking more ownership of the course.

Tech issues. Since students in all the delivery methods had to access some materials online, and submit all assignments online, the fact that the online students had more tech issues was surprising. The researchers assumed that students self-selecting to take the course online would be more tech savvy than the other students, but this proved not to be the case. On the other hand, *all* the materials had to be accessed online for the online sections so there were more opportunities for there to be issues.

Relationship-building. The online students also had fewer phatic communications. Possibly, that was related to the fact that the online students had fewer opportunities to “know” the professor so they spent less time working to develop the relationship. Also, this finding aligns with the fact that the online students seemed to take more personal responsibility for the course (e.g., not seeking deadline extensions, but seeking content clarification).

Conclusion

In this study, the researchers analyzed the student-initiated interactions for an entire semester across four sections of students in the three course-delivery methods of face-to-face, hybrid, and online. The amount of time required for the student-initiated interactions was greater for the hybrid and online sections than for the face-to-face section. Email was the preferred modality of interaction for all the sections, and online students used SKYPE more than the other students did. There were a variety of purposes for the student-initiated interactions, but content clarification and tech issues were the top two, and online students required more time on those two purposes.

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LEVELING THE PLAYING FIELD OF EDUCATIONAL OPPORTUNITY THROUGH THE DEMOCRATIZATION OF CYBERLEARNING

by

Robert Blaine, D.M.A.¹ and William McHenry, Ph.D.²

$I(C)=E--Innovation \text{ multiplied by creativity equals empowerment}$ --this is the formula for Jackson State University's CyberLearning initiative. Through the incorporation of technology into the curriculum, Jackson State University is democratizing its learning environment to empower innovative teaching and student creativity. The result of this equation is an enhanced learning culture--one that is inquiry-based and student-centered, that fosters intellectual curiosity and encourages lifelong learning.

In the fall of 2012, Jackson State University initiated the JSU CyberLearning Strategy. Through a partnership with the Mississippi eCenter and Apple, Inc., the Technology Advantage Scholarship Initiative (TASI) was commenced. TASI delivers a democratic learning environment by providing students equal access to the latest scholarship through the latest technology. This scholarship provided tablet computers (iPads) to every first-time, full-time freshman. In conjunction with TASI, JSU began the process of mainstreaming the curricular program, Global Education through Analytical Reasoning (GEAR), designed to inculcate global awareness and twenty-first century skills through curriculum and technology. The conjoining of TASI and GEAR has resulted in CyberLearning at JSU, producing a new learning community for digital natives with focus on global inquiry.

CyberLearning at JSU is an examination of the JSU learning community designed to stimulate creativity and innovation in teaching and learning. This examination of curriculum, methodology, and delivery focuses on the development of a learning culture dedicated to the active engagement of today's learners to develop skills for careers in the twenty-first century. Through a focus on foundational skills (reading, writing, speaking, and listening) and analytical reasoning

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skills, the CyberLearning community engages students through the process of active learning in the classroom. In the CyberLearning community, mobile technology provides a vehicle for student engagement, the expansion of the classroom learning environment, the integration and development of primary source materials, and the extension of teaching practices that move beyond the traditional lecture format.

Jackson State University has recognized the shift towards a new culture of learning, focused on the integration of technology into the curriculum and the attainment of twenty-first century student learning outcomes. As such, Jackson State University has developed a senior-level position in the Office of the Provost. In July, 2013, a Special Assistant to the Provost for CyberLearning was appointed. This position provides leadership for the University's development of digital initiatives and organizes JSU's transition to a learning culture focused on twenty-first century learning outcomes.

Innovative Learning and Teaching

Faculty development has been integral to the development of CyberLearning. Through the Global Inquiry Faculty Teaching Seminar (GIFTS), participating faculty members have developed customized multi-touch books and iTunesU courses, designed to implement a student-focused, technology-infused, active learning environment. GIFTS faculty receive one month of highly focused training, designed to deliver a published multi-touch book and an iTunesU course. These published digital materials are organized by twenty-first century student learning outcomes and delivered within a framework of global inquiry. Using a set of global analytical exercises as the organizational structure for a scaffolding presentation of discipline specific topics, GIFTS faculty redesign their course materials as multi-touch ebooks, embedded with strategies for student engagement, interactive digital materials, and expansions of the traditional curriculum that allow students opportunities to explore areas of individual interest. To date, Jackson State University faculty members have authored more than forty (40) multi-touch books, and the first cohort of peer-reviewed, published, digital teaching materials will reach students this fall.

Ongoing Professional Learning

The goal of CyberLearning at JSU is to create a holistic educational ecosystem which facilitates faculty teaching and student learning for today's learners. Focusing on a curricular-based implementation strategy, CyberLearning at JSU provides a democratized platform for equal access to the latest scholarship through the latest technology, leading to an educational environment where intellectual curiosity is supported and fostered. Shifting from a culture of lecture to a model of active student engagement has required investments in faculty capacity. Support of this transition has required resources to encourage and facilitate faculty innovation and creativity and will require faculty evaluation which brings emphasis to new, innovative, and creative teaching models. To this end, JSU is transforming our library into a modern digital intellectual commons. The first phase of this transition will occur in the fall of 2013 with the opening of INNOVATE. INNOVATE will serve as the new home for academic IT and distance learning. This new facility will function as a "one stop shop" for the creation and dissemination of digital content and will serve as a location for continual faculty development, training, and enrichment.

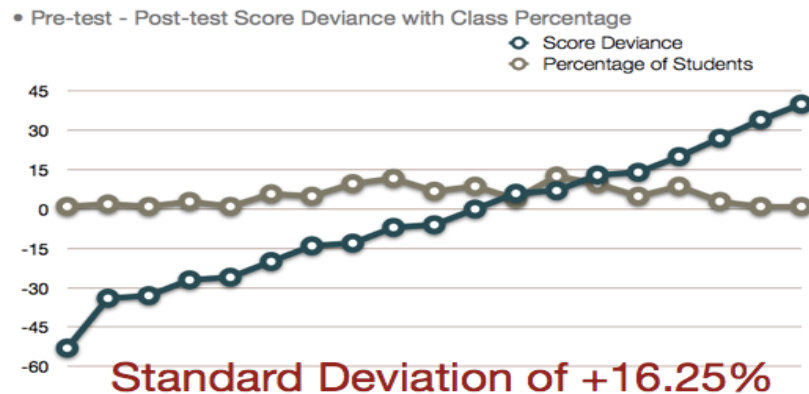


While this new faculty space provides resources for the new, innovative digital materials, projects, and assignment that faculty will develop, the next phase of development will produce a student center: CREATE. In CREATE, students will engage with faculty-created digital materials and complete the digital projects and assignments developed in INNOVATE. The physical spaces of INNOVATE and CREATE provide the architectural resources to facilitate the curricular goals of CyberLearning. Through faculty innovation, multiplied by student creativity, teaching and learning empowerment can be achieved.

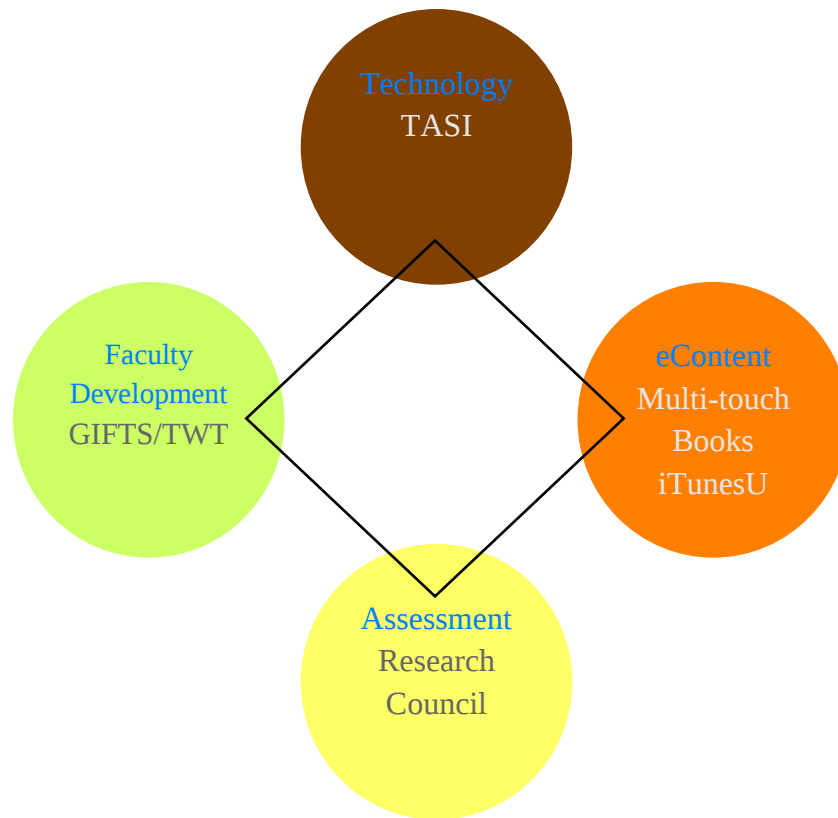
Compelling Evidence of Success

While Jackson State University is early in its assessment of the effectiveness of the CyberLearning initiative, the early data are promising. Commencing in 2011, curricular evaluation demonstrated a rise of analytical reasoning scores through our enhanced curriculum developed by JSU faculty during the Global Inquiry Faculty Teaching Seminar (GIFTS). The curriculum focused on foundational skills (reading, writing, speaking and listening) and used global inquiry as a lens through which discipline content was introduced. Using our internally designed pre-test and post-test of analytical reasoning, students recorded a 16.25 percent improvement in proficiency. The results of this study provided evidence for the continuance of faculty-developed texts through the GIFTS framework. To date, JSU has authored more than 40 multi-touch books through the GIFT Seminar. Faculty content is peer-reviewed and beta-tested in the classroom. This year JSU will publish its first cohort of multi-touch books through the University Press of Mississippi. Additionally, peer-reviewed, faculty authored, published multi-touch books now count as publications for tenure and promotion.

Analytical Reasoning Scores - UNIV 100



Further evidence of success has been observed in our pilot of eTextbooks in partnership with *Educause*. At JSU, upwards of 90 percent of our students use some sort of financial aid. For our students, this means that the exorbitant cost of textbooks provides a barrier to student success. Often students will use their federal educational loan refunds as the vehicle to purchase class materials. The delay between the initiation of the semester and the issuing of refunds can be as long as six weeks into the semester, causing students to struggle with course achievement without the necessary materials. The *Educause* pilot embedded eTextbooks into our Learning Management System (Blackboard), resulting in a seven-point rise in student achievement in the spring 2013 semester. This cohort of students was compared against a similar cohort of students taught by the same professor in a previous semester.



In an effort to coordinate the study of the effect of CyberLearning on the JSU learning community, the University has convened a research council led by Dr. Melvin Davis, Executive Director of the Mississippi Urban Research Center and consisting of members Dr. Emorcia Hill, Director of Converge, Research, and Evaluation, Harvard Medical School; Dr. Daniel Sarpong, Research Professor of Biostatistics, School of Health Sciences, Jackson State University; Dr. William McHenry, Executive Director, Mississippi eCenter; Dr. Loretta Moore, Interim Vice-President for Research and Federal Relations, Jackson State University, and Dr. Robert Blaine, Special Assistant to the Provost for CyberLearning, Jackson State University.

Flexible Learning Environment

CyberLearning at Jackson State University is providing a learning-centered culture of innovation and creativity to provide student learning outcomes germane to careers in the twenty-first century. Using mobile technology as the hub for these curricular enhancements has provided students access to the latest scholarship through the latest technology in an environment of

“on-demand,” 24-hour access. The flexibility of this environment means that learning is not constricted to the classroom, laboratory or lecture hall, but rather, happens at any time and in any place. It is through this new culture of learning that Jackson State University seeks the cultivation of minds that challenge conventional thinking, create new potentials, and stimulate innovation.

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