When in Rome: Teaching 21st Century Students Using 21st Century Tools

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Abstract

The purpose of this paper was to examine the benefits of supplementing the classroom environment with available technology to engage students both within and outside the classroom. The blended-learning model was the primary context for examination, though both strictly face-to-face and online teaching will benefit from the methods discussed. A review of the literature and contemporary teaching methods provided the foundation. There were indications that the use of engaging and interesting teaching methods provided a learning environment that encouraged student interest in the material and supported student retention. Faculty members will need to independently access the tools mentioned in this paper and independently evaluate their potential.

When in Rome: Teaching 21st Century Students Using 21st Century Tools

Teaching today's students requires communicating with them and keeping their attention while they live their lives in high gear, with access to music, video, and friends on demand. In this world of attention-challenged and tremendously busy scholars (on both sides of the podium), faculty may feel the need to find a solution to this communications problem. Recent technology-based trends and innovations have provided communications tools to assist us with extending the learning environment outside of our classrooms.

This paper will address some of the tools available to engage students in higher education. The idiom "When in Rome, Do as the Roman's Do" was chosen to demonstrate the mindset suggested for today's faculty to ensure we teach the way today's students learn. Only by implementing the tools in use by today's students can today's teachers effectively communicate with them, and effectively teach them.

Why Do Something Different?

Yesterday's college students were primarily "traditional." They were twenty-somethings who had recently finished high school and had chosen to follow the long-standing advice of past generations to continue their education immediately. Their college and university courses were taught using the same teaching methods to which they had grown accustomed in high school, and to which faculty had grown accustomed during their own years in higher education.

Today's college students are different. There are many descriptions used to identify this group, but none seems as effective as "The 'Net Generation" (Oblinger & Oblinger, 2005). This generation is not necessarily one based on age – it is defined by experience, expectations, and exposure to information-gathering techniques that place institutions of higher education in direct competition with such collectors, repositories, and disseminators of information as Google and Yahoo! (Prensky, 2001; Oblinger & Oblinger, 2005). The experiences and tools available to this

group of learners give them the ability and expectancy to acquire information on virtually any subject within moments of thinking about it. They are the users of microwaves, the purchasers of iPods, the members and users of the YouTube video service, and the community members on social networking websites like MySpace and Facebook. They have spent less than 5,000 hours reading and over twice that many hours playing video games (Prensky, 2001). They are digital (Roman) natives, while many of us are digital (Roman) immigrants (Prensky, 2001).

What should we do differently?

One of the goals of higher education is to increase opportunities for interaction between students and faculty (Sreebny, 2007). By increasing interaction, faculty can also increase the perceived value of higher education for students, ensure student satisfaction, and build student loyalty to the institution. Bruning and Ralston (2001) suggested that faculty ensure they are available to students for both formal (in class) and informal (outside the classroom) communication. The challenge, then, is to find out where students are, so that interaction and informal communication can occur. So where do students congregate (known in Rome as 'hanging out')?

Though the answer may be the university food court, the neighborhood coffee shop, or their dorms and apartments, faculty need not look too far from their office desktops to access the majority of their students outside of the traditional classroom environment. Today's learners use modern technology in their everyday activities, and faculty focused on learner-centered activities and approaches can benefit from this predisposition. Most of today's college students have an online presence and regularly communicate online in some form (Oblinger & Oblinger, 2005; Huwe, 2006; Sreebny, 2007).

By using familiar technology environments, today's faculty can cultivate a learning environment in which they can better reach today's students (Kagima & Hausafus, 2001). The technology changes that today's students have embraced give us, as those tasked with "educating"

them, two options. We can embrace their technology, or we can deny its impact on their (and our) lives. The first choice will allow us to maintain our positions (both individually and collectively) and continue to assist students with their desire to learn. The second choice may put us in a class by ourselves – with students avoiding our classes and universities in favor of those who make an effort to understand and attempt to respond to their needs.

There are several options available for creating this learning environment. Perhaps the most logical online option is the extension of the face-to-face classroom by using classroom management software (CMS). CMS serves as a classroom replacement in strictly online classes. The classroom extension suggested here is to use CMS to create what is known as a hybrid, or blended-learning environment (Osguthorpe & Graham, 2003). There are many types of CMS, including Desire2Learn, WebCT, and Blackboard. Each has an area where lecture notes, syllabi, and other files (and grades) are available to students. The addition of an online learning component to a face-to-face class is the most common way of creating a blended-learning environment (Osguthorpe & Graham, 2003).

By having an area outside the traditional classroom where students can access course documents and information, faculty can provide added opportunities for students to reflect on course material and classroom discussions. In addition to file storage, a CMS has areas for synchronous and asynchronous communication (also known as ‘chat’ and ‘discussion areas’). Though synchronous communication may be useful to replicate the real-time interactive feeling of the classroom in online courses, for supplementing face-to-face courses the asynchronous method is more appropriate, as higher education transitions to a flexible, asynchronous mode (Aggarwal, Adlakha, & Mersha, 2006). By allowing (or suggesting) periodic contributions to an online discussion environment, faculty can provide added opportunities for students to participate in the course and reflect on course topics between face-to-face class meeting times. Though many feel that technology enhancement of the classroom is beneficial, few faculty use web-based CMS to supplement the classroom interaction

(Haas & Senjo, 2004). As a result, students' exposure to course material may be limited to class sessions and the times they devote to reviewing the material between class sessions.

As Bush (1994) observed, faculty "live on the brink of change" (p. 2). In order to keep up with changes, creative faculty members may find it helpful to find innovative ways to keep students actively engaged in learning (Moskal, Dziuban, Upchurch, Hartman & Truman, 2006). The process of *engaging* students, as used in this paper, includes using the benchmarks identified by Smith, Sheppard, Johnson, and Johnson (2005): encouraging achievement by setting high expectations, including activities to promote active and collaborative learning, increasing opportunities for student-faculty interaction, and displaying a focus on learning opportunities, in a supportive campus environment.

A simple way for faculty to engage students in the traditional learning environment is to bring relevant websites into the classroom in real-time. In the alternative, providing the web address for sites in the CMS discussion area would serve the purpose in a blended-learning environment. Websites that have relevance to the material can often be easily located – just before, or during, class – as can videos that are available from public access sites like YouTube.com.

It takes additional time and effort to incorporate technology into the traditional classroom and to establish and maintain a CMS-based classroom extension. This obviously takes a commitment to and demonstration of personal creativity on the part of the faculty member (Bush, 1994). By expending the added effort, faculty demonstrate a commitment to go beyond the minimum, as students will need to do in the real world (Bush, 1994).

Is What We Are Doing Working?

The placement of a classroom supplement in an online environment appears appropriate for most students. Over 80% of 18-34 year olds have an online presence (Sreebny, 2007). By creating an area where students can engage in dialogue about classroom topics outside the classroom, faculty

can provide opportunities for students to solidify their understanding of the course material. In the traditional classroom, students' attention, interest, and potential for interactivity is lost in a relatively short time (Robinson, 2000; Oblinger & Oblinger, 2005). In order to capture and retain their attention and increase their potential for learning, faculty need to know how to reach students in their natural environment (Carnevale, 2006).

Faculty can engage students by providing relevant information using the traditional lecture method. Lectures give maximum control to faculty, but do little to assist the student in developing critical thinking skills (Robinson, 2000). The primary reason faculty use this teaching method is that it is familiar. The exclusive use of this method can hinder the learning environment. Imagine an encounter with someone who speaks a different language. The alternative to learning the language of another is often to speak loudly and slowly in hopes they will somehow be able to understand. The exclusive use of familiar teaching methods is the academic equivalent of speaking louder and slower. Today's faculty have many options available for use in providing information to students. Traditional lecture style can be used, but it should be mixed with activity (Robinson, 2000). Activity in the classroom could consist of brief periods of student discussion, a short video (provided by faculty or a previously identified student volunteer), or even a preplanned collaborative project.

Creating an environment for interaction (also known as *active learning*) provides opportunities for faculty-student interaction, both within and outside the classroom. Faculty should look for and capitalize on opportunities to develop relationships with students (Bush, 1994). Students have been urged to build relationships with professors (Emery & Tian, 2002). Recently, focus groups reported personal relationships with faculty enhance the student's academic experience (Bruning & Ralston, 2001). Osguthorpe and Graham (2003) suggested using learning activities to increase the engagement of students and faculty in both online and face-to-face environments. That focus allows for (and requires) thoughtful preparation and course design.

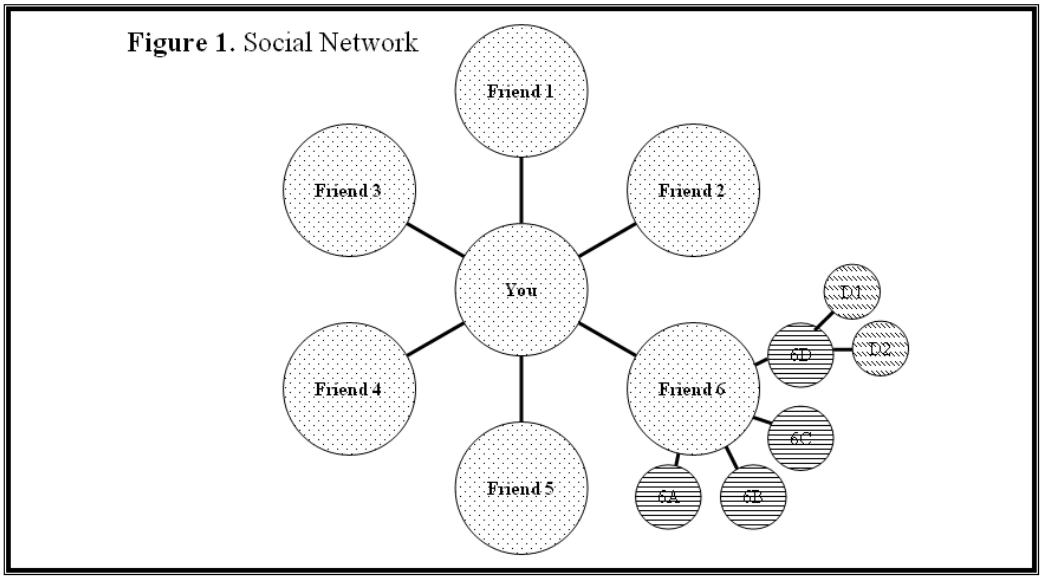
Developing personal relationships with students requires an interest and investment in the student's academic and personal well-being (Bruning & Ralston, 2001). If the interest exists, the investment might well come easily. Faculty members set the tenor of the relationship early in the semester (Bruning & Ralston, 2001). By ensuring students know they are available, faculty members can lay the foundation for a more productive learning experience.

How Can We Do It Better?

Students need active learning methods to help them grasp the complicated and controversial content inherent in the professional community in which they plan to work (Robinson, 2000). Most of our learning, especially in higher education, comes from a secondary experience (Jarvis, 2006). Faculty, when they have professional experience in their discipline, often use that experience as a foundation for explaining concepts and theories to their students. This method, though widely used, is often deemed ineffective, or at least inferior, to primary experience (Jarvis, 2006).

So what can be used in our teaching repertoire that students have primary experience with? One of the recent scholarly contributions of the organizational behavior discipline is in the area of networking. Communities of practice (Millen, Fontaine, & Muller, 2002) and social networks (Gulati & Gargiulo, 1999) are examples of work done recently in this area.

A social network is an “explicit representation of the relationships between individuals and groups in a community” (Finin, Ding, Zhou, & Anupam, 2005). Figure 1 depicts a basic social network. Woods and Ebersole (2003) noted a direct link between optimal learning and social networks where collaborative learning was occurring. Oblinger & Oblinger (2005) observed that today’s students prefer working together and learning in a team environment.



The primary position in the figure is the individual in the center ('You'). From there, connected to the individual, are 'friends' (also known as contacts), depicted here as Friend 1-6. A friend is someone you invite or allow to join your list of friends; though not necessarily someone you have met (Winn, 2005). Connected to each of the individual's friends are their friends (depicted here as 6A-D, to represent your Friend 6's four friends). If you also know and connect with one (or more) of these friends, they could be linked to you, as well. Figure 1 also depicts Friend 6's friend 6D's friends, represented here as D1 and D2. Social networking sites abound on the Internet. The challenge is to find out where, how, and with whom students congregate and find ways to incorporate learning opportunities into those areas – outside the classroom.

Social interaction was one of the six goals of faculty who design blended-learning environments (Osguthorpe and Graham, 2003). It is important for students to understand the potential benefit of interaction and community (Hon & Brunner, 2002; Smith et al., 2005). Faculty should bear in mind that participation in social networks requires an initial introduction. Once in the network, there should be little difficulty encouraging students to interact with each other (what often comes naturally). This can be accomplished by sharing relevant news articles, commenting or

following up on conversations in class, acknowledging student's birthdays, and other common communication starters. Students integrate their personal technology into their educational and personal lives (Moskal, et al., 2006). As a result, students have the right to expect faculty who have a stake in their learning experience to implement technological advances that are useful in higher education.

How do we know it will work?

The learning curve for faculty who are not technological adept may be an issue. Keeping up with technology can be a significant source of stress – comparable to the demands to publish and conduct research (Haas & Senjo, 2004). This becomes especially difficult when combining the power of the internet with the face-to-face classroom. Faculty teaching in strictly online classrooms must show immediacy related to learning (Woods & Ebersole, 2003). Faculty using a blended-learning approach to their traditional face-to-face classrooms should also demonstrate a sense of immediacy when responding to students, though the timeliness of the response may not be as critical as it is in the strictly online classroom. The role of faculty in exclusively web-based education shifts from deliverer to facilitator, while the student's role shifts from receiver to active participant (Aggarwal, et al., 2006). In a blended-learning classroom, the faculty role may alternate between deliverer and facilitator from day to day. Given the above considerations, it appears that faculty should strive to establish a blended role they can maintain throughout the course.

Adapting to Roman Culture

Today's faculty are increasingly considering the need to transition from a traditional teaching style to one more suited for and beneficial to today's students. Academics generally agree that using techniques like active learning, evidence-based learning, and various technology-based, face-to-face teaching methods is beneficial to the student and the learning environment (Robinson, 2000; Finckenauer, 2005; Haas & Senjo, 2004 – see also Kagima & Hausafus, 2001). The use of

technology to facilitate learning presents great opportunities and special challenges (Knowles, Holton, & Swanson, 2005). Technology can be used to facilitate self-directed learning to supplement the traditional classroom experience (Knowles et al., 2005). Technology enables learners to ensure a fit between learning and prior experience (Knowles et al., 2005). In addition, technology provides an opportunity for enhancing the learning environment by using real-world examples (Knowles et al., 2005).

The suggestions and observations in this paper are not tool-specific. The student and the effectiveness of the learning environment are the suggested focus – not the technology used to engage the student and supplement the learning environment. The focus for implementation of these concepts should not be on the tools used, or on the techniques applied. Technology is just a tool for making a course more available to students (Thoms, 2006). The focus should be on the approach to learning (Weimer, 2002). The challenge is to meet students where they are, while being able to straddle old and new teaching and communication methods (Huwe, 2006).

In order to provide students with a valuable learning experience, today's faculty often use collaborative group and teamwork to improve the quality of learning (Sreebny, 2007). Reasons cited for using this technique include the need to prepare students for real life work environments and creating opportunities for increased student-student and student-teacher interaction (Smith et al., 2005; Sreebny, 2007). Group work, when combined with active learning styles, can be used to discuss controversial issues and encourage the development of creativity, decision-making, and critical thinking skills (Robinson, 2000). The use of group work, even when protested against by students, shows the appropriate commitment of the faculty to the community and future employers. It comes as no surprise that learner-centered approaches may encounter resistance, as they require additional work on the part of the learner (Weimer, 2002).

Social networks are a powerful foundation from which to develop group identity and

cohesion. Social networks are often examined in the context of the *small world* phenomenon – everyone in the world is accessible through a "short chain of social acquaintances" (Milgram, S., 1967, as cited in Finin, et al., 2005, p. 422). For a social network to be relevant to the learning environment, it needs to be about something, it needs to have a purpose (Downes, 2005). Many social networks have limited practical use (Downes, 2005). To avoid such limitations, the suggestion here is to use a social network that already has structure, subscribers, and relationships, not the creation or development of a new social network. By capitalizing on the existence of a pre-defined social network, faculty can catalyze the expansion of the learning environment. By gaining access to social networks in which students are comfortable and already established, connections with those students can be cultivated and developed to facilitate the engagement of students in face-to-face classroom discussion.

Many in higher education are using, or to some extent evaluating the use of, contemporary social networking technology such as MySpace or Facebook (Carnevale, 2006; Lamb & Johnson, 2006; Lindenberger, 2006). Though the reasons for such exploration are varied, the essence appears to be that learning always occurs in a social context (Jarvis, 2006). Social networking sites allow users to create a profile and build a network of friends (Lenhart & Madden, 2007). Social networking technology provides a virtual meeting environment for friends to share relatively personal information, thereby getting to know something about each other without expending the time needed to introduce each other and get comfortable discussing personal issues. Social networking sites allow a personal form of regularly-used communication, much like a mobile phone number or personal email address. With social networking sites, meeting and getting to know people with whom one shares interests or contacts is not limited by time and space. These sites provide the ability to build a trusted community, which becomes useful to facilitate the introductions of others without being present, share one's opinions about specific items and events, and share news and

information with a pre-screened and pre-selected group of people – simultaneously. The technology allows groups with similar interests to form and share information and ideas in both synchronous and asynchronous communication. The function is not unlike the party line or CB radio conversations of previous generations, except with social networking sites the individual can choose who "listens in."

So how useful would social networking be in developing relationships in a learning environment? Are our students likely to have access to and regularly use this technology? On the first day of college, 85% of college students have a Facebook account (Sreebny, 2007). By the end of the first semester, 94% of college students have a Facebook account (Sreebny, 2007). A query of the Facebook site on February 22, 2007, determined there were 111 MTSU faculty registered with Facebook. Although some appeared to be duplicates, and a sampling indicated many were inactive, that number represents 12.3% of the 901 full-time faculty employed at MTSU (personal communication, K. Keene, February 22, 2007).

Faculty who want to develop relationships with students might find it easier (and more likely) if they do so with communication methods used by students. While e-mail is still the most widely-used means of correspondence in the world (Sreebny, 2007), many students prefer messaging on sites like Facebook or MySpace over campus email (Carnevale, 2006). Using preferred methods to communicate with students may mean the difference between instruction and engagement.

What Will We Get From The Investment?

Universities provide opportunities for students to develop and hone the skills needed for success after graduation. The contribution of the University to the community is a well-rounded college graduate that can provide quality output in their profession (Bush, 1994). Many jobs require teamwork and good communication skills (Robinson, 2000). A well-rounded graduate, then, should be one who can generate innovative ideas in a team environment and convey those ideas to others on

their team and in their community.

Virtual communities make an important contribution to an individual's social, educational, political, and business lives (Finin, et al., 2005). Developing and capitalizing on the use of social networks, it appears, would strengthen the ties between students engaged in an active learning process. Social networking sites for professionals are a likely extension into the professional world for use by faculty and alumni to maintain contact. The technology sector has embraced this phenomenon, and many in traditional professions are following suit (Copeland, 2006).

Universities can use technology to help extend their access to the community and their connections with alumni (Bell, Martin & Clarke, 2004). Implementing the use of social networks while students attend college would allow faculty to maintain contact with those students as they go out into the community following graduation. Using social networks to stay in contact with graduates would increase the value of the faculty-student relationship, and might lead to a more loyal cadre of alumni. The perceived value to alumni could be reflected in their loyalty to the university, as demonstrated by a partnership in areas like employment of later graduates, support for athletic organizations, and financial contributions.

Conclusion

Challenges for faculty in higher education include finding opportunities to give individual attention to students, providing timely and thorough feedback, and encouraging problem solving (Aggarwal, et al., 2006). These opportunities may be facilitated using technology-based methods of interaction, as described in this paper. The use of traditional email communication and the tools embedded in CMS indicate the willingness of faculty to communicate with students, and these efforts show a modicum of technology adaptability. They also, unfortunately, appear to display the mindset portrayed when using only those teaching methods that are familiar.

Examination of the issues addressed in this paper indicates that more focused analysis is

appropriate. New technology may not have a significant impact on all teaching methods, and the preferences of students need not cause a radical transformation of teaching style. However, the emergence of widely used technology that provides a natural environment for learning while in college and exponential collaborating opportunities in the professional world suggests that continued examination of these developments may be in order.

As the teaching environment adapts to another generation of learners, faculty might better serve the university, the community, and the students by evaluating the methods used for conveying information and knowledge. By making an effort to understand the technology-assisted world that today's students live in, today's faculty displays a level of commitment likely to result in a demonstrated and continued loyalty to the university by tomorrow's graduates.

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