

Using Social Media Technologies to Enhance Online Learning

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ABSTRACT

Models of distance education have evolved over decades, just in time to collide with modern pedagogies in which communication, interaction, student engagement, and active learning are of critical importance. The number of college students taking online classes continues to grow. Today, nearly 30% of college students are taking at least one online class. The social media technologies encompass a wide variety of Web-based technologies such as blogs, wikis, online social networking, and virtual worlds. This paper examines the relevant published literature, looking at online learning activities through the prism of the defining characteristics of today's new communication technologies.

Keywords: Social media, Online learning, Higher education, MOOCS, Hybrid courses, Gaming, Online Student Satisfaction

Introduction

The world is changing very rapidly. Libraries have morphed from structures filled with books to repositories of information. Information and knowledge come in many forms including DVDs, eBooks, and YouTube videos. The role of a newspaper has changed thanks to the Internet and its social media. By the time readers see a newspaper, much of the news is old. Everyone knows about the latest crisis, and has seen photographs on the web and read the story.

To make matters even more complicated, technology has converged so that, for example, a telephone has become everything from a computer to a camera. Telephone manufacturers who insisted that their job was to manufacture “pure” telephones – a telecommunication device for transmitting speech- and nothing more, are obsolete. People use their computers to watch television, listen to radio, find apartments to rent, and even find a spouse.

Tedlow (2010) describes what happens to companies who look away and go into denial when paradigms shift. This is a good way to miss opportunities or even become obsolete. Some famous examples of denial are Henry Ford’s obsession with only offering an inexpensive, black, no-frills Model T Ford. A&P, which at one time was one of the largest retailers in the U.S., missed a huge opportunity to grow by not recognizing that television was making manufacturers’ brands more important than store brands. This sort of myopia is no less true in education, and perhaps more true in the slow-moving terrain of higher education.

Even the disciplines of today are changing rapidly because of information access, collaboration technology, and convergence, among other factors. There are many more specialties today than in the past and there is much more "boundary crossing and interdisciplinary activity" (Klein, 1996: 42). Klein (1996: 191) asserts: "Almost all significant growth in research in recent decades, the committee [National Research Council] concluded, has occurred at the 'interdisciplinary borderlands' between established fields." It is unrealistic to believe that an educator with expertise in only a single discipline will be able to provide the necessary knowledge to solve problems that will arise in one or two decades. The amount of knowledge continues to increase exponentially.

A report written by Georgetown University's Center on Education and the Workforce concluded that "not all bachelor's degrees are the same" and "while going to college is undoubtedly a wise decision, what you take while you're there matters a lot, too" (Bruni, 2012). Colleges are going to have to invest in higher education but the money is no longer there. The stimulus money which began in 2009 and was sent to state and local governments after the Great Recession of 2008 helped save about 400,000 education jobs. However, the spigot has been turned off and at least 100,000 individuals in the field of education have lost their jobs in the last few years. The White House claims that the true number is more like 250,000 jobs (Editorial, 2012). This is one of the big problems facing education: a shortage of money.

Many colleges are turning to online education as a way to expand offerings at a reasonable cost. Institutions across the country have increased their offerings of online and hybrid programs and classes. Carey (2012) feels that MOOCs (Massive Open Online Courses) will change the future of higher education. MIT, Harvard, and Berkeley are offering free MOOCs via edX, a not-for-profit venture (check it out at: <https://www.edx.org/>). One famous MOOC on artificial intelligence was offered by Sebastian Thrun, a renowned robotics expert at Stanford. More than 100,000 enrolled in this free course (admittedly, not everyone completed the course). Needless to say, the marginal cost of adding a student to a class of 100,000 is virtually zero. Carey (2012) feels that it is only a matter of time before accredited colleges start accepting transfer credits for MOOCs. It is difficult to justify accepting courses taught by nameless professors at unknown colleges and yet reject MOOCs taught by world experts from stellar universities. Certainly, ensuring integrity will be an issue for a MOOC as it is for any online course. This can be solved

by having students pay to take secure exams at special facilities. Indeed, students taking MOOCs at edX, can pay to take proctored exams at one of 450 Pearson's VUE testing centers located in more than 110 countries.

A recent report from Moody's Investor Services predicts that "MOOC's could improve the financial prospects of leading universities while posing financial challenges to lesser-known institutions and for for-profit colleges" (Azevedo, 2012). In fact, elite universities could eventually use MOOCs to sell courses to other colleges. This is an easy way for colleges to save money. Why offer numerous sections of popular required courses such as macroeconomics when the same course can be offered as a MOOC? The course could be enhanced with teaching assistants for students who need extra help. Many prestigious colleges have joined Coursera to offer free online classes. The motto of Coursera is "Take the World's Best Courses, Online, For Free."

One might argue and say students are not interested in taking fully online courses. This is incorrect. In fact, according to the Sloan Consortium study conducted in 2010, nearly 30% of college students were taking online courses (Allen and Seaman, 2010). According to the Babson Survey Research Group 2011 study, approximately 31% of college students were taking at least one online course (Allen & Seaman, 2011). Growth may be slowing somewhat but the number of students taking online courses continues to increase.

Models of online learning have evolved quite a bit from the correspondence courses that became popular in the 19th century, just in time to collide with 21st century pedagogies in which communication, interaction, student engagement, active learning, and assessment are of critical

importance. The purpose of this paper is to examine the relevant published literature, looking at online learning activities through the prism of the defining characteristics of today's new communication technologies.

THE SOCIAL MEDIA TECHNOLOGIES

The so-called social media technologies – often referred to as Web 2.0 –encompass a wide variety of web-related communication technologies such as blogs, wikis, online social networking, virtual worlds and other social media forms. Much has been said about the unique character of the social media technologies, the features that unite these seemingly disparate technologies under a single umbrella. These characteristics of social media can be summarized by the 5 C's (Friedman and Friedman 2008): communication, collaboration, community, creativity, and convergence.

COMMUNICATION. By and large, social media technologies are concerned with communication between and among human beings. This communication may be uni- bi- or multi-directional, collaborative, networked, or viral. Blogs may be viewed as an alternative or complement to publishing, but they may also be alternatives to personal webpages. Bloggers don't only engage in one-way posting. Many cite each other's work a great deal and post comments and ripostes on each other's blogs, and this results in "conversational blogging" (Efimova and de Moor 2005). Social networking sites like Facebook and Twitter enable communication among groups of people, large and small. The rapid speed of communication over networked Web 2.0 technology platforms is probably best evidenced by videos that go "viral."

COLLABORATION. New media technologies enable collaboration over the Internet. Blogs in general have limited collaboration, although a single blog may be shared among a group of

bloggers and sometimes a blog may be used for group work. Wikis are today's collaboration tool. These are also scalable, in that private wikis for small groups of people work just as well as the largest collaborative product we have ever seen – Wikipedia. Some authors have examined how wikis are used (Tapscott and Williams 2006; Sunstein 2006), both at work and in other arenas of life. Social media also encourages collaboration with virtual conferencing on, say, SecondLife.

COMMUNITY. Social media like Facebook, Twitter, SecondLife, Webkinz, Del.icio.us, and other Web-enabled social media forms serve to make the world a smaller place. Groups of people, large and small, are better able to interact more regularly, stay in touch, and accomplish various goals, because of these technologies. Social media technologies fostering community are democratic and inclusive. Today's technology may be the great equalizer, producing a leveling of the playing field (Johnson 2007). Many of the web technologies we may not previously have associated with social media now have a social networking component, for example eBay, YouTube, and HowStuffWorks. In addition, these technologies may be used as a platform for creating a learning organization (Andrus 2005).

CREATIVITY. Does simple digitization turn old media into new media? Is digital media that different from non-digital (analog) media? For one thing, digitization makes editing extremely easy. Therefore, it also promotes creativity, since we are not burdened by the limits of the medium we are working with. Remember making changes to a large document using a typewriter? The size of the page severely limited any changes we were willing to make. With digitization and the right software our editing capabilities are limited only by our capacity for thinking. Today, consumers of digital media do not simply, read, listen, view, or play it. They also edit, mod, and create mashups. This post purchase behavior means that a product is not

necessarily "finished" when it goes into production. Social media technologies enable user-generated content, and we have much more active audience members who create, edit, post and contribute content.

CONVERGENCE. The past decades have witnessed a convergence of technology more fantastic than fiction. This is primarily due to widespread digitization and to the Internet, which itself can be seen as digitization plus telephony. Some of the results of this trend are: companies that produce printers are now in the camera business; long distance telephone calls use a broadband Internet connection; photographs are transmitted via e-mail using a cellular telephone; several companies are competing for video-on-demand; computer manufacturers are in the music business; and many more. Adaptation is the key to survival in the Internet age.

There are many different forms of convergence in the social media phenomenon. *Convergence of technology*, encompasses both hardware and software, for example, computer technology and entertainment produced technologies like Tivo and the infotainment industry. We have seen *Convergence of media* attributable to technology - e.g., a newspaper must have an online presence and probably a news blog. *Convergence of consumption*, seen in consumers – especially students – who may be using several media simultaneously, e.g., computer, internet, music, newspapers, telephone, camera, etc., and in consumers who produce digital mash-ups using several forms of media. Hynes (2003) asks: Does technology convergence drive consumer convergence or vice versa? Finally, one of the hallmarks of the social media is *convergence of roles*. Today there is a blurring of the lines separating users, developers, distributors, producers, consumers, etc., with individuals taking on multiple roles comfortably.

CHANGES IN ACADEME

Almost every state is working with a challenging fiscal environment thanks to the recent Great Recession. State budgets are quite austere and it is very doubtful that there will be money in most of them for additional buildings for universities. The Texas A &M University system is using a spreadsheet to evaluate the gains and losses from every single faculty member. This is calculated by determining the revenues generated by a faculty member (number of students, grants, etc.) and deducting the expenses (faculty salary, costs of labs, etc.). This is also being done by department (Simon and Banchero, 2010). The balance sheet is showing that some faculty members netted the university close to \$280,000 for the 2009 fiscal year while others cost the college about \$45,000. Some departments generate gains of more than \$5 million while others cost the college more than \$1.4 million.

One metric determines amount of earnings per student taught; some professors (i.e., nontenured lecturers) teach large classes and earn about \$100 per student while others (full professors teaching small seminar classes) earn more than \$10,000 per student (Simon and Banchero, 2010). Like it or not, these performance metrics are being used by more and more colleges as public officials are demanding more productivity and accountability and are examining educational statistics such as graduation rates, retention rates, number of students that pass professional licensing exams (e.g., CPA), median starting salaries of graduates, average student loan debt, and other such measures. Some states are insisting that these measures should be posted online so that the taxpayer should have a good idea as to the value of a college degree (Simon and Banchero 2010).

It is apparent that academe will have to learn to be more productive. Education can learn from what retailers have done. Many retailers have moved from a brick-and-mortar approach to a click-and-mortar approach. This means fewer buildings but an expanded presence on the Internet. Consumers can make purchases at stores and online. Thus, for example, Wal-Mart sells products at many stores but also does a brisk business online. The publishing industry has also made changes to its business model. E-books may not totally replace paper books but companies that want to survive must offer both. College textbook publishers currently offer both types of books as well as a great deal of material using the web. Textbooks often come with a homework manager that enables students to do homework online and get immediate feedback. Banks have buildings but also provide service at thousands of ATMs throughout the world.

Academics who define themselves solely as individuals who teach traditional classes in a face-to-face (FTF) format are being very myopic. Academics are in the knowledge “business” whose job it is to provide information, mediate learning, and, more importantly, to enhance students’ ability to think and learn for themselves. The goal is to provide students with the tools and desire for lifelong learning, not only to impart information. The Chinese proverb – “Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime” – is especially true when it comes to education. The true job of an educator is to provide students with an unquenchable thirst for knowledge and the ability to acquire it.

One of the most important tools in education is homework. However, students are spending less time doing homework. Educators have to find ways to make homework more interesting and relevant to today’s students. There is evidence that the homework American students do has little impact on test scores. It is not how much time students spend on homework that enhances

learning; it is the quality of the homework assignments. Meaningless homework assignments, so-called busywork, will have no value in the educational process (Paul, 2011). We believe that the social media tools can be used to make homework fun and useful.

Some academics insist that the only way students can learn is via a traditional, face-to-face classroom. This might be justifiable if studies demonstrated that traditional learning was superior to online learning. The evidence, however, does not support this view. Means *et al.* (2009) did a meta-analysis of more than 1,000 studies published from 1996 to 2008 comparing online with traditional classroom teaching. What they found was that online learning does offer many advantages over traditional classroom learning. In fact, students who take courses that are either completely or partially online will perform better than students taking traditional, face-to-face courses. Interestingly, hybrid courses that combine classroom learning with online learning seem to be the best of all delivery methods. Means *et al.* (2009) conclude:

Despite what appears to be strong support for online learning applications, the studies in this meta-analysis do not demonstrate that online learning is superior as a *medium*. In many of the studies showing an advantage for online learning, *the online and classroom conditions differed in terms of time spent, curriculum and pedagogy*. It was the *combination* of elements in the treatment conditions (which was likely to have included additional learning time and materials as well as additional opportunities for collaboration) that produced the observed learning advantages. At the same time, one should note that online learning is much more conducive to the expansion of learning time than is face-to-face instruction.

Diana G. Oblinger, president of Educause, made the following statement in response to the above study: "Online education provides additional opportunities. It gives people greater opportunity for flexibility, for experiential learning, for illustrating things in multiple ways such as visualization." She emphasized that the study makes it quite obvious that colleges have to make sure to use online education and not insist on only offering courses using traditional, face-to-face instruction (Jaschik 2009).

Interestingly, a recent study found that when students were asked to rate their college-level learning experiences, those they considered the most valuable all took place outside of the traditional classroom: internships, study-abroad programs, senior thesis or other faculty-mentored research projects, and capstone projects (Young, 2011).

Educators today are trying to determine the goals of education. The Internet has changed the rules, and skills that were important in the past may not be so important today. For example, is the ability to calculate a standard deviation or square root important in the computer era? Some of the goals of education are providing students with the following abilities and skills: problem solving, critical thinking, communication, collaboration (ability to work with others), navigating the Internet and finding accurate and useful information, and making ethical judgments. An overarching goal is to provide students with a passion for learning. In the Internet Age, knowledge acquired in the freshman year in college may be obsolete by the senior year (Friedman and Friedman, 2011). As we shall see the social media tools can enhance all of the above skills.

SOCIAL MEDIA AND ONLINE LEARNING

The best of online learning, much like the best of FTF learning, requires active engagement on the part of the student. Rather than being passive recipients of transmitted knowledge, students are active participants in the learning process; they are engaged. Students – not only the instructor – help to create the learning environment. Teaching is all about communication. Not one-way communication – boring lectures – but many-to-many communication – a learning environment. Ideally, we would like students to learn as much from each other as they do from us. We manage the learning activities and facilitate learning.

Liu et al. (2009) found the most commonly used social media technologies in higher education, as studied in the literature, were: blogs, podcasts, social networking, and virtual environments. Hovorka and Rees (2009) studied the use of a number of social media technologies in information systems courses. Introducing social media into courses may not only help make them more interesting and even fun, but at the same time teach students can learn valuable and pervasive workplace skills: communication, collaboration, community, convergence, and creativity.

Here we use each of these characteristics of social media – the so-called 5 Cs – in an online learning context. These characteristics serve as a convenient prism through which to examine the social media technologies and their application to online learning.

COMMUNICATION. Williams and Jacobs (2004) consider blogs and academic discourse to be “natural allies.” Online learning is still communication – on a technology platform.

Communication technologies can include “old” technologies such as email, lectures notes in pdf files, or even an online discussion forum. It can also include communication on the new Web 2.0 technologies, using social media, e.g., student blogs; a class wiki project; a twitter discussion; online social networking; video presentations on YouTube; or even a virtual world like SecondLife.

COLLABORATION. Learning how to communicate and work with others should also be a goal of education (Robinson, 2008). The three skills students must have in order to succeed in the knowledge economy are: “the ability to do critical thinking and problem solving; the ability to communicate effectively; and the ability to collaborate” (Friedman, 2010). Social media tools can be used to teach students how to collaborate and work with others. Many schools have lists describing the goals of general education. These lists include critical thinking, mathematical reasoning, ability to communicate, understanding the importance of cultural diversity, ability to make ethical judgments, appreciation of the fine arts, encouragement of lifelong learning, and more. Few lists include the ability to work productively with others. Collaboration is of great importance in almost every enterprise. Very few occupations allow individuals to work alone without input from others.

CREATIVITY. Pink (2006: 3) observes that "the defining skills of the previous era -'left-brain' capabilities that powered the Information Age -- are necessary but no longer sufficient." The skills that are valuable today, in the Conceptual Age, include such factors as creativity, empathy, happiness, and meaning. Video games may not be a waste of time in the Conceptual Age. Studies are finding that playing video games may sharpen the skills of physicians involved in

laparoscopic surgery and help in decision making (Pink: 2006: 193). Even the military uses games and virtual worlds to train soldiers. One DARWARS computer game, AMBUSH!, is used to instruct soldiers on the appropriate course of action when their convoy is being ambushed on a dangerous roads in Iraq or Afghanistan (Boyd, 2006). Video games are being developed as training tools for firefighters to teach them how to handle hazardous materials that might appear in New York City subways (Boyd, 2006). Gee (2003) feels that "when kids play video games they can experience a much more powerful form of learning than when they're in the classroom. Learning isn't about memorizing isolated facts. It's about connecting them and manipulating them."

Robinson (2005) believes that the current system of education is antiquated as it was designed with a production line mentality. Essentially, it was created in the 19th Century to meet the needs of large industries as we moved away from agriculture. Industrialism back then needed workers who were literate and creativity was not that important. Before that there was no public education since the prevailing belief was that the common man could not learn very much. A classic education was for the gentleman. This changed with the Age of Enlightenment and the Industrial Revolution. According to Robinson, companies today believe the most important challenge is "finding people who could make good decisions in times of uncertainty, who can adapt to new opportunities and respond creatively to change" (Robinson, 2005). He observes that in 1997, only 74 companies of the original Standard & Poor list of top 500 corporations (published in 1957) were still around (Robinson, 2005).

The enemy of creativity, according to Robinson, is standardization. Education today focuses on

standardized exams and standardized curriculum. The corporate world needs people who understand divergent thinking, seeing multiple answers to a problem. Schools today rely heavily on standardized tests which teach students that problems have one answer. Courses that utilize social media force students to be self-starters and have the potential to encourage them to be creative. They also teach them about networking as they will have to find ways to connect to fellow students to work on collaborative projects just as they will in the career world.

Courses that are offered fully or partially online and use social media can enhance creativity since they can use numerous teaching tools that include animations, videos, wikis, blogs, web links, webinars, and virtual labs. Brown (2000) observed that the Web has created a "new kind of information fabric in which learning, working, and playing co-mingle." He adds that the Web is also "two-way, push and pull." The old method of lecturing passive students is a "push" approach that does not work for many students. Brown (2000) asserts that young people today are always "multiprocessing" and conducting several tasks simultaneously. Many can be working on the computer, talking on their cell phones, and listening to music, all at the same time! The goal of education today, according to Brown, is to teach students information navigation, i.e., how to find useful information on the Internet.

COMMUNITY. It is very difficult to be creative in this day and age if one works alone. Indeed, the ability to communicate has little value if one does not possess the ability to be part of a team. Many young people are quite comfortable with using communities such as Facebook for social purposes. How important are communities for learning? Online communities have an important effect on interaction. The kind of interaction that occurs in a face-to-face class is different from

the interaction that occurs in a fully online class.

Bernard et al. (2009) performed a meta-analysis on the distant education literature and examined three types of interaction treatments (ITs): student-student (SS), student-teacher (ST), and student-content (SC). Student-student interaction may be built into distance education courses through the use of group projects. Student-teacher interactions are easy in hybrid courses where there are some face-to-face meetings and a bit more difficult in fully online courses. Even with fully online courses, student-teacher interactions can occur via the use of email, phone calls, discussion boards, chats, and videoconferencing. Student-content interactions can be effected by having students read online material, collect information, or watch a video. Bernard et al. (2009) conclude that all three types of interactions are important and should be an important part of fully online courses since they enhance student learning as well as satisfaction. Web 2.0 technologies are making it less costly and much easier for students to collaborate and have the student-student interaction. The research in the field is supporting the idea that three kinds of interaction are very important in learning (Wanstreet 2006; Swan 2002). Battalio (2007), however, concludes that not all students have the same learning styles. Some students may prefer learning in a traditional, face-to-face environment; others may thrive in fully online courses. Younger students, who do not have family obligations and are comfortable with social networks, may benefit greatly from online learning communities. Older students that work and have family obligations may not be satisfied with courses that utilize online learning communities.

CONVERGENCE. In academia, as in other arenas, adaptation is the key to survival.

When we use social media technologies to mediate learning in traditional and online courses, we increase our arsenal for knowledge creation exponentially. Indeed, the hybrid course – a blend of face-to-face and online learning – may be the ultimate mashup.

CONCLUSION

There was a time when laughter was seen as a problem in the workplace. People on the assembly line at Ford Motor Company during the 1930s and 1940s were fired for laughing or smiling while working. Ford's philosophy was: "When we are at work, we ought to be at work. When we are at play, we ought to be at play. There is no use in trying to mix the two." Today, many firms want employees to be happy at work since they feel it increases productivity and profits. The mission statement of Southwest Airlines says it all: "People rarely succeed at anything unless they are having fun doing it." (Pink, 2006: 186-187; Collinson, 2002).

A large number of students quit college and fail to graduate not because of economic factors, but because they find college uninteresting. These students need to be motivated (Carnes, 2011). No one has studied whether full-time online learning works for poor children but it is being used as an alternative to "violent in-school experience." An educational company called K12 Inc. is offering online learning for K-12 children. Time will tell whether it works but there are 250,000 cyberschool children now (Collins, 2011). It is difficult for college professors to shun online when thousands of disadvantaged, young children are being taught that way.

Arum and Roksa (2011) claim that a significant number of college students barely improve their skills in the vital areas of critical thinking, writing, and problem solving/critical reasoning. Indeed, after four years, 36% had made no significant gains in those three areas. The average

amount of time spent studying by college students is now less than half of what it was in the 1960s. Anne Neal, president of ACTA (American Council of Trustees and Alumni) says: “College tuitions have risen more than 440% over the last 25 years – and for what? The students who say that college has not prepared them for the real world are largely right” (McGurn, 2011).

Clearly, we have to transform education and make learning fun and relevant to the real world in which we live. We live in the Internet Age and young people spend huge amounts of time with social media. The best way to bring courses to life and make them more exciting, energetic, and enjoyable is by using social media. Selingo (2012) feels that “despite resistance to the idea from academics,” the evidence is there that online education has the ability to lower costs and improve the quality of education. William E. Kirwan, chancellor of the University System of Maryland, believes that, in the future, the typical college class will be a “hybrid of in-person and online elements.” He also notes that this type of hybrid approach reduces costs by roughly 25% (Pèrez-Pena, 2012).

Educators who refuse to adapt and continue to insist that the only way to learn is via “chalk and talk” methods will find themselves hopelessly obsolete. Besides the changes that have taken place in libraries and in journalism, one only has to think of what is currently happening to the film industry where the traditional way of showing films -- in movie theaters -- is disappearing. Professors who wish to increase their value to their institutions must embrace technology and use all kinds of tools to impart knowledge.

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