

The new HD Classroom: a "Hyper Diverse" approach to engaging with students

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ABSTRACT

Social media sites such as Facebook and Twitter have come to dominate internet usage in recent years. Facebook alone has over 550 million users as of Fall 2010, while Twitter claims over 100 million users. While academia was fairly quick to adopt online education models in the 1990s, it has thus far not yet embraced social media portals as a way to deliver course content and engage students. This may be due to uncertainties regarding student perceptions about social media, its purposes, and its applications. In this research, the Social Media Affinity Scale was created and deployed to measure perceptions about social media. The results of this scale provide a measure of readiness that university academics could use to determine whether social media might be used effectively and efficiently among students. Results of the study showed that, among the students surveyed, no significant differences exist between males and females in their internet usage, social media usage, and beliefs about social media sites in general. Based on these results, a roadmap for social media integration is proposed for college classes.

KEY WORDS: social media, Facebook, internet, education, online

INTRODUCTION

Social media have risen to prominence in recent years, beginning first with sites like Classmates in the mid-1990s, followed by Friendster in 2003. The most significant growth of social media has occurred since 2004, though, when Facebook.com was introduced. Today there are over 550 million Facebook users alone, along with millions more using sites such as Twitter, MySpace, Plaxo, LinkedIn and others.

While early adopters of these sites were digital natives (i.e., those born and/or raised in the internet era), all age groups are now embracing these sites. Research of Internet and social media users has continued to show differences among users through the years, specifically among male and female users. These studies reveal very different motives for using the Internet and social media sites, suggesting that while activity levels are high among both genders, the intrinsic value of participation differs.

But just as the digital divide vanished over time (males once dominated all computer and internet usage), it is possible that similar usage divides will also disappear. Online college courses, for example, have broad-based appeal, and even traditional campus-based courses often have high computer usage expectations.

Given that social media are now part of the cultural fabric, it is necessary to explore if and how social media might find their place in academia. At present there is a gap between campus pedagogy and social media usage among students and faculty. This paper works to examine that chasm, and to draw some conclusions as to why it may be time to incorporate this technology into our classrooms. We created and deployed the Social Media Affinity Scale as a way to examine current usage and beliefs, and determine student readiness for social media deployment in college courses.

LITERATURE REVIEW

Social media usage is pervasive in the US. Patel (2010) reports that the rise of social media among three target groups (Baby Boomers, Generation Xers, and Millennials) is dramatic. Not only has the usage of these technologies grown, Patel notes that the tenets of learning and work productivity also improve dramatically as we move along the target groups.

In fact, this notion of using social media as a learning tool has carried over to the business world. Patel (2010) notes, "It is virtually impossible to ignore the potential of social media for any business operation. The main reason for the excitement is the fact that social media is engulfing the population at phenomenal rates. While it took radio and television 38 years and 13 years, respectively, to reach 50 million users, it took Facebook less than nine months to reach 100 million users. iPhone applications even hit 1 billion in nine months."

Educators have been somewhat reluctant and/or slow to use technologies in the classroom for varying reasons. Examples include inadequate classrooms, lack of knowledge or experience with technology and web applications, fear of change, and inability to visualize how technology can be used in an academic setting. Adrienne Matteson (2010) notes one of the primary strengths of such utilizations, though. "Without disrupting the flow of work in the classroom, the teacher and students can tweet questions and responses on the lesson and post photos or related sources with hyperlinks. In this way, everyone remains on the same page with few interruptions."

However, we are far from adopting these technologies in the classroom. McDaniel, et al, (2010) report, "Even as electronic technologies accelerate the pace of their encroachment into

every aspect of our lives, the education community continues its decades-long struggle to establish the role these innovations should play in effective teaching and learning. Traditionally, students come to school “powered-up” and wired with the newest technologies available – but often they must leave them at the door, since faculty do not use them in classrooms and may even regard them with suspicion. The most recent example of a potential disconnect between tools preferred by students and those used by teachers is the category of social media known as Social Networking Sites (SNS).”

Aside from the social media divide that often exists between students and educators, some theorists worry about the inherent gender differences that have been noted in the past. Numerous studies have identified measurable differences in the way males and females perceive and use new technology. For example, Bimber cites significant gender differences in Internet access and use. Around one half of the "digital divide" between men and women on the internet was fundamentally gender related as recent as a decade ago (Bimber, 2000). Some theorists suggest that the internet may appeal differently to men and women because of stereotypes signally that computer technology is more appropriately male than female (Janssen, Reinen & Plomp, 1997; Fletcher-Finn & Suddendorf, 1996; Sutton, 1991.)

Men and women use the Internet in nearly equal measure in the USA and Australia (unlike many other nations), but for often decidedly different purposes. Singh, for example, found that women generally use the Internet as a tool for activities, rather than as play or a technology to be mastered (Singh, 2001.). Another study found that females used the internet more for email than did males, while males used the web more than females did. (Jackson, Ervin, Gardner, Schmitt, 2001. Other findings indicte that men and women differ dramatically in their perceptions of email, but not in their usage of it. (Gefen & Straub, 1997.)

In expanding the discussion to consider the adoption of new technology in general, the Technology Acceptance Model was used to determine that on all points of measurement, men's technology usage decisions were more strongly influenced by their perception of usefulness. In contrast, women were more strongly influenced by their perceptions of ease of use. (Morris, Venkatesh, 2000.)

Females have been found to have a more negative attitude toward computers and the Internet than men, and males have been found to have less computer anxiety than females. (Broos, 2005.) His General Linear Model analysis revealed a significant effect of gender, computer use and self-perceived computer experience on computer anxiety attitudes.

Additional gender differences were noted in the way that males and females respond to online rich media. Rich media is the term given to digital communication that features audio, video, animation or interactive elements. Matching richness to task equivocality only resulted in better performance for the all-female teams, likely because females are more sensitive to nonverbal communication and more affected by its absence in computer-mediated communication. Results supported media richness theory only for all-female teams. (Dennis, Kinney & Hung, 1999.)

Other literature has examined the adoption and use of mobile phones as a distinct form of new technology. Springer's 2003 paper reports on an empirical study of the connection between consumption patterns and mobile phone use. Technology enthusiasm and trend-consciousness was linked to impulsive consumption and "hard" values prevalent among males; whereas an "addictive" use of the phone was related to "trendy" and "impulsive" consumption styles among females. The traditional gender division in mobile phone use styles that could be observed is interesting in the light of conjectures that genders are becoming more alike in their use of new

technology. (Springer, 2003.)

A more recent 2009 study conducted identifies persistent gender differences in regard to the way teens use social media specifically. Sixty-five percent of all online teens have a profile online. But it is girls, particularly older girls, who are more likely to use social networking sites (86% of girls 15-17 have a profile online, compared to 69% of boys 15-17) (Lenhart, 2009).

Baird and Fisher are credited with conducting the first major examination of potential uses of social media in education, and identify key advantages that social media platforms provide today's neomillennial learners. Their study readily points out that today's students have been raised in the "always on" world of interactive media, the Internet, and digital messaging technologies and, therefore, have very different expectations and learning styles than previous generations. These digital natives value their ability to use the Web to create a self-paced, customized, on-demand learning path that includes multiple forms of interactive, social, and self-publishing media tools. (Baird & Fisher, 2005).

With the rise in social media quite apparent, and the need to connect the chasm between educators and students of the digital age, this paper explores the creation and usage of the *Social Media Affinity Scale* as a way to examine implications for education. Specifically, the SMA Scale was designed to measure perceptions toward social media, and also serve as an indicator of potential readiness to embrace social media within the academic confines.

METHODOLOGY AND HYPOTHESES

A paper-and-pencil survey of college students at a regional Division II school was conducted in February 2010. The survey was comprehensive in that it included social media usage, smartphone ownership and apps downloading, demographic questions, and beliefs about social media. The volunteer sample resulted in 141 undergraduate students between the ages of 18 and 40 completing the survey, with nearly equal representation among males and females.

The primary purpose of the study, though, was the creation and deployment of the Social Media Affinity Scale, a 13-item instrument developed to measure respondent beliefs about social media sites in general. Prior to the study, an extensive exploratory phase was conducted in order to better ascertain the issues of importance to users and non-users of social media. This resulted in the 13-item Social Media Affinity Scale.

The Social Media Affinity Scale consists of Likert-scale items, of which nine were stated in the positive, and four in the negative. These four were re-coded in the subsequent analysis. The scale was pre-tested with volunteer subjects prior to deployment in this study. The pre-test was used to check for any difficulties in comprehending the items, as well as the overall technicalities of the instrument. No substantial problems in wording or mechanics were recorded.

Gender differences have historically existed in both media consumption and technology usage. These differences forming the bases for many of our hypothesized relationships. Based on the literature and data reported above, we hypothesize that there will be significant differences between males and females with regard to internet and social media usage, as well as beliefs about social media.

H1: There will be no significant difference in the amount of internet usage (hours per week) between males and females.

H2: Females will report a significantly higher amount of social media usage (hours per week) than will males.

H3: Females will report a significantly higher overall affinity for social media usage (as measured on the SMA Scale) than will males.

H4: Females will report significantly higher scores on all factors extracted from the Social Media Affinity Scale than will males.

RESULTS AND LIMITATIONS

The first step in the analysis was to assess the reliability of the SMA Scale. An $\alpha=0.77$ was calculated, indicating the scale has strong internal reliability.

The second step was to perform an Exploratory Factor Analysis on the scale. Using Principal Components Analysis with a Varimax Rotation, three factors were extracted with eigenvalues greater than 1.00. A qualitative inspection of the factors showed that the analysis had collapsed the survey items into factors with these themes: Redeeming Value, Shared Interests, and Business & Organization Uses. The factor loadings were all sufficiently high as to warrant their inclusion (as indicated in Table 2).

Next, t-tests for independent means were calculated for gender by the following variables: internet usage/hours per week and social media usage/hours per week (as indicated in Table 1) and gender by the summed scores of the complete SMA Scale as well as the summed scores of the three extracted factors (as indicated in Table 3). These t-tests formed the basis of all tests for the hypotheses above.

In every instance H1, the t-tests failed to reveal any significant differences between males. Thus, we reject H2, H3, and H4a-H4c, while retaining H1. While there were small observed differences in the directions hypothesized, they were no so large as to conclude significant differences exist.

These results thus confirm previous findings indicating no imbalance in internet usage among males and females, while at the same time confirming such an imbalance exists with regard to social media usage. Furthermore, the high reliability and successful factor analysis of the SMA Scale indicate it has useful application in the field for determining overall beliefs about social media, as well as possible readiness to embrace social media in new applications. Finally, the results indicate a high degree of readiness among the sample for the use of social media applications in college courses.

This study is limited in that it was conducted on only one college campus, and may not be representative of college students in general. The sample was rather homogeneous, with few minority groups represented. Still, the sample and the campus in general are representative of the local population in which the campus is located. Future studies should seek to include students from a variety of campuses across regions, seeking greater balance among ethnic and income groups.

The sample itself, while providing sufficient numbers of subjects for statistical purposes, is small. In future efforts to broaden the scope of the sample, a greater number of participants overall is also desirable

A confirmatory factor analysis should be performed with the SMA Scale, utilizing a separate sample. This will help to further validate the scale as a useful tool for indicating

openness to using social media.

Most significantly, though, the results of this study along with the reliability and factor analysis of the SMA scale suggest that the time has come for institutions and individual professors and instructors to consider utilizing social media sites (such as Facebook) as important components of course delivery. Since only 4 out of 141 respondents did not have a Facebook account, it would not be a technological impossibility to utilize the popular social media site as a means of content delivery and student engagement. This can be accomplished by the course professor creating and maintaining a Fan Page, at no cost to anyone involved, and completely apart from the limitations of course management systems such as Blackboard, Angel and WebCT.

For example, class discussion can be held at the course page, supplemental material can be linked or presented, and pictures and video can be embedded. Furthermore, professors and students alike can access this site via their smartphones as well as computers, thereby creating a class that is truly without boundaries.

The lack of significant difference between males and females in all aspects of this study demonstrate that relative parity has come to not only internet usage, but also that of social media. While it is possible that males and females utilize these two for different reasons (and in different ways), the fact that both genders are using them in fairly equal (and large) amounts presents opportunities for educators. Social media are a tool to be leveraged, not avoided.

Finally, the fact that sites like Facebook have now become part of the broader social fabric makes it possible to communicate with and engage students and professors at all ages. They are a communications medium nearly on par with face-to-face interaction.

The primary contributions of this paper are thus twofold: (1) the Social Media Affinity Scale is a reliable tool for assessing beliefs about social media, and can be used to determine readiness to use social media in a variety of applications; and, (2) a significant opportunity exists to leverage the power of social media in college courses.

DISCUSSION

The SMA scale has a scoring range of 13 to 65. The scores in this sample were approximately 49.6 for males and 50.8 for females (nearly 80% of the maximum score possible), showing nearly equally strong favorable perceptions about social media. Further analyses of the three factors within the scale reveal consistently strong and favorable perceptions, with no significant differences between males and females. These data suggest a strong potential readiness exists for social media applications, one which educators could leverage for maximum impact within the context of a college course.

There are numerous possible social media applications that could be used with such a receptive group, including custom Facebook pages, YouTube channels, and Flickr photostreams.

Facebook and YouTube are particularly well-suited for such deployment because most smartphones support media-rich apps for these sites. Thus, a Facebook page for a course or professor could contain a wealth of relevant course information, above and beyond the standard “Wall” for posting status updates. Items such as links to the course syllabus and lectures (saved elsewhere as PDFs) could allow for easy access from a desktop computer, laptop or phone, thereby allowing students access no matter their location.

While many universities and colleges rely on content management systems (such as Blackboard), not all CMSs provide phone apps. Facebook solves this problem by providing apps

for nearly every phone available. Furthermore, the ability to push important course announcements via Facebook messaging assures that students will see the content appear on their screen as if a text message has been received.

YouTube also works well in this context, both because it interfaces well with Facebook (as an embedded link), or via a YouTube app. Thus, educators can publish course-related videos directly to YouTube, knowing that students can access these clips with ease. These clips are also easily shared via either YouTube or Facebook.

Flickr photostreams also offer educators and students alike the ability to post and share images related to the course or specific assignments. These, too, can easily be embedded within the Facebook course page, and are viewable across multiple devices.

Leveraging Facebook, YouTube and Flickr together will allow educators to engage students in ways not deemed possible only a few years ago. College courses can now be completely portable and accessible at will from virtually any location. Regardless of whether a course is online, on-campus or blended, students will be able to remain plugged in.

The Social Media Affinity Scale also serves a greater function as an indicator of the readiness of students to embrace such applications. The lack of significant differences in mean scores between males and females is critical for social media deployments to succeed, as is a global mean of 80% or better. This signifies a high level of openness to social media, and thus an opportunity for educators to speak to students in a way they are likely to be reached.

These external portals allow for educators to create a “hyper-diverse” learning experience for students, a classroom without boundaries. Utilization of tools such as the SMA Scale allow for educators to test the readiness of students to embrace such web applications.

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Table 1: T-tests for Independent Means
 Gender by Internet Usage (hours per week) and Social Media Usage (hours per week)

Variable	Gender	N	Mean	t-statistic	Prob.
Internet	Males	70	23.3571	0.969	0.334
	Females	70	20.3571		
Social Media	Males	69	11.0145	-1.052	0.295
	Females	70	14.5143		

(*) cell counts differ because of missing data

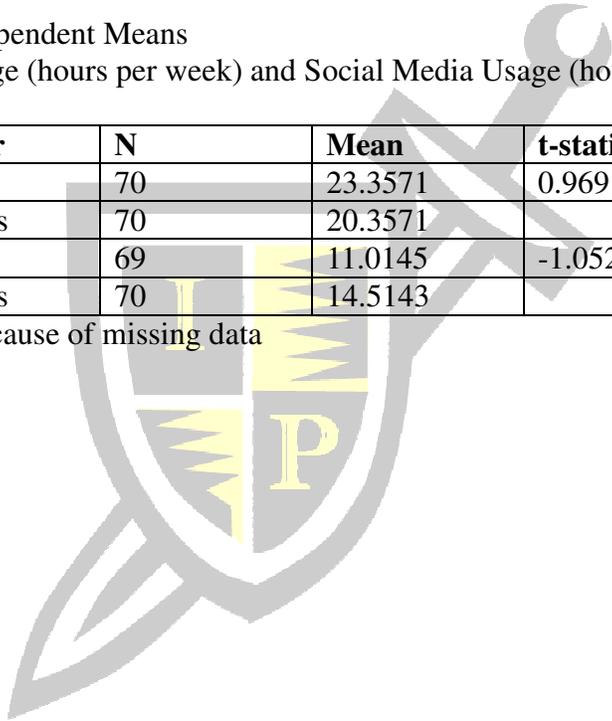


Table 2: Exploratory Factor Analysis (*)

Item	Statement	Factor 1: Redeeming Value	Factor 2: Shared Interests	Factor 3: Business & Organizations
1	Social networks are a great way for people to stay in touch with one another.		.435	
2	Social network sites are a waste of time. (**)	.694		
3	Social networks allow people with similar interests to stay connected.		.810	.
4	It consumes too much time to maintain and/or read social networking pages. (**)	.521		
5	It is important for a person to have his or her own social networking page in which they can tell about themselves and their activities.	.570		
6	I want to read about my friends and/or family members on their social network pages.	.547		
7	Potential and/or existing employers may use information found on social networking pages to make decisions about prospective and/or existing employees.			.644
8	Social network sites are a great way to build online communities of people with shared interests or traits.		.808	
9	Social networking sites are just a fad. (**)	.733		
10	I do not care what other people are doing. (**)	.718		
11	The emergence of social networking sites illustrates a growing need among people for a sense of community.			.616
12	A social network could be an effective communications tool in a college class.	.563		
13	Social networking sites have great potential for marketing businesses and/or individuals.			.706

(*) Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser

Normalization

(**) These items were recoded for analysis

Table 3: T-Tests for Independent Means
Gender by Summed MSA Score and Summed Factor Scores

Variable	Gender	N	Mean	t-statistic	Prob.
Entire SMA	Male	67	49.5821	-1.208	0.229
	Female	67	50.8358		
Factor 1	Male	69	25.1884	-1.543	0.125
	Female	68	26.3088		
Factor 2	Males	69	12.8406	-0.432	0.667
	Females	70	12.9429		
Factor 3	Males	70	11.5915	-0.122	0.903
	Females	71	11.6338		

(*) cell counts differ because of missing data

