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Social Networking in Undergraduate Education

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Abstract

The current generation of students entering higher education are digital natives who have been raised in a techno-centric world where omnipresent technologies play an integral role in human life and where new innovations are quickly absorbed and assimilated. In order to develop learning communities with increased student engagement, educators are increasingly adopting the use of social networks to supplement teaching and learning in both fully online as well as traditional classroom learning environments. This paper explores the efficacy of social networking systems as instructional tools by presenting the results of a study that examined the perceptions of management students who completed courses at a U.S. Mid-Atlantic minority-serving university that used Facebook to augment instruction.

Keywords: Social Networking, Facebook, Social Learning, Web 2.0 Teaching Tools, Digital Literacy, Web 2.0

Introduction

Web-based communication technologies have collided during the past decade resulting in a meteoric paradigm shift that has permanently altered human discourse (Turkle, 2008). Previously held concepts of personal expression, privacy, and interpersonal relationships have been replaced by re-envisioned Web 2.0 conceptualizations. At the nucleus of this transformation are social networking technologies such as Facebook and Twitter, which are blurring the lines between our professional, personal, and academic lives.

Today's learners have had their world defined by Web 2.0 technologies. As digital natives, they are permanently tethered to ubiquitous, highly accessible, ever evolving technologies that transform users from passive consumers to prosumers (creators) of user-generated content exchanged through a host of networked communities. Empowered by technology, the current generation of students yearns for new means for self-expression and information sharing.

Educators seek ways to bridge the perceived technological chasm between tutor and tutee. The extent to which this chasm actually exists and the role of social networking technologies as part of a possible solution remain under exploration. Further, the degree to which students expect to see social networking technologies integrated into the learning process remains unclear. The following paper attempts to explore this issue by presenting the results of a study that examined the perceptions of management students who completed courses at a U.S. Mid-Atlantic minority-serving university during the spring of 2010 and

throughout the 2011 academic year that used Facebook as an instructional tool. A survey of participating students found that the learners considered Facebook a valuable tool that helped to strengthen interpersonal relationships, build learning communities, and engage students. When asked to compare Facebook to the popular Blackboard Learning Management System (LMS) Blackboard was found to be better suited for course announcements and for providing links to course resources; the two systems were rated equal when it came to hosting study sessions, supporting group projects, and facilitating question and answer sessions, and Facebook was considered overwhelmingly superior for community building and facilitating class discussions.

In addition to the questionnaire, a content analysis was also conducted. Original postings rather than comments on the postings made by others were examined, categorized, and occurrences counted.

Literature Review

How does one define Web-based social networking? In its simplest form, social network services are computer applications that support the complex arrangement of connected nodes (people) with tools for storing and presenting information as well as communicating, connecting, and interacting with others (Buzzetto-More, 2012).

Social networking technologies are monumental in scope. The numbers, while growing exponentially, are unquestionably impressive. YouTube is the second largest search engine on the Web, 3.5 billion pieces of content are shared each week on Facebook, Twitter supports over 65 million tweets per day, in the U.S. 96% of 18-35 yr olds are on a social network, and 25% of search results for the World's top 20 largest brands link to user generated content (Morejon, 2010) Further, more than 67% of the global online population regularly visits a social network site, and social networking sites now collectively account for one in every eleven minutes people spend online (Kazeniac, 2010).

The top 10 social networking sites by market share for March of 2012 were reported by Experian. According to the data, Facebook holds a 63.28% market share, followed by YouTube (20%), and Twitter and Yahoo!Answers each at around 1% (Experian Hitwise, 2012). Table 1 presents the findings.

Table 1: Top 10 Social Networking Sites by Market Share Reported for March of 2012 by Experian Hitwise

Rank	Website	Visits Per Share
1.	Facebook	63.28%
2.	YouTube	20.02%
3.	Twitter	1.65%
4.	Yahoo! Answers	0.95%
5.	Pinterest.com	0.91%
6.	Linkedin	0.78%
7.	Tagged	0.65%
8.	Google+	0.54%
9.	MySpace	0.40%
10.	Yelp	0.36%

The current generation of students are digital natives who have been raised in a Web-enriched world where omnipresent technologies play an integral role in human life and where new innovations are quickly absorbed and assimilated. Digital natives have been interacting with digital technologies from an early age, generally appreciate the value of technology, are quick to adopt new technologies, seek out opportunities for implementing technological change, and are comfortable with social media and other Web 2.0 technologies. According to Palfrey and Gasser (2010) digital natives perceive the world differently with looser concepts of privacy, friendship, information ownership, communications, creativity, risk and threat, and productivity than previous generations. How does this impact teaching and learning? Buckingham (2007) argues that because technology has become a "significant dimension" of most young people's lives, educators need to move beyond customary views of these media as simply curriculum-delivery devices, teaching aids, or "neutral" tools for learning (p. viii) in order to find ways of engaging with them more critically and creatively: "We need to move the discussion forwards, beyond the superficial fascination with technology for its own sake, towards a more critical engagement with questions of learning, communication and culture" (p. 13).

According to Fogg, Phillips, Baird, and Fogg (2011):

> The proliferation of digital, social and mobile technologies has created a culture in which youth participate more in creating and sharing content, profoundly changing the way students communicate, interact, and learn. In many cases students spend as much (or more) time online in an informal learning environment--interacting with peers and receiving feedback--than they do with their teachers in the traditional classroom. (p. 3)

Jones and Shao (2011) explain that while first-time students entering higher education are particularly impacted by social networking technologies, services that support the uploading sharing and manipulation of media such as YouTube, and the use of mobile devices, students do not enter the university with particular demands for the use of new technologies. Further, they explain that "The gap between students and their teachers is not fixed, nor is the gulf so large that it cannot be bridged" (Jones & Shao, 2011, p 1). According to their findings students prefer the moderate use of Information and Communication Technologies (ICT) in their courses, viewing the use of course management systems, e-books, and online libraries positively. With respect to the use of new technologies such as blogs, wikis, and 3D virtual worlds, Jones and Shao (2011) also found that students positively respond to the incorporation of new technologies into the teaching and learning process provided that the technology usage is well-conceived, purposeful, and properly integrated into the learning process.

Selwyn (2008) conducted a survey of 1222 undergraduate students and found that students' academic use of the World Wide Web was impacted more by gender and discipline differences than by differences in technology access or expertise. In particular, he found that students from medicine, social sciences, law, and business reported higher levels of educational Web use than students in creative arts, architecture/planning, and the humanities. With respect to gender, female students were found to be significantly more likely to seek academic information online than their male counterparts. Further, academic-related information searching was a prominent but not predominant aspect of students' daily online activities (Selwyn, 2008). In a follow up study, Selwyn (2009) found that the use of social networking sites such as Facebook had become important tools for social and cultural development, in particular engagement in the college community; however, they were not necessarily found to be used to formally enhance undergraduate studies.

The 2010 EduCause Center for Applied Research (ECAR) report (Salaway & Caruso, 2010) found that the ownership of computers holds steady at 98%; students continue to use standard institutional services with more than 94% of respondents reporting using their institution's library website and more than 90% using course or learning management systems; the use and ownership

of internet-capable handheld devices is growing in popularity with over 70% ownership and more than half responding that they access the internet daily from a smart phone, and approximately 25% of students use e-books. The study also found growth in the use of video sharing websites such as YouTube (42%), contributions to wikis (40%) and blogs (36%), and use of Voice over Internet Protocol (VoIP) (40%). Use of social networking sites (SNS) was found to have increased significantly to 95% for 18 and 19 year olds in 2010 with 30% reporting they were using social networking websites in their courses, although half of those students were using them to collaborate with other students in a course about course-related topics and only 8% said they use them to communicate with instructors about course-related topics (Salaway & Caruso, 2010).

Middle and high school age learners are not immune to the call of SNS. The Kaiser Foundation found that 75% of 7th through 12th graders have at least one social media profile (Kaiser Family Foundation, 2010) and a National School Boards survey (2007) found that 96% of 15-17 year olds with home internet access use some form of social media on a regular basis.

Recognizing the impact of the social media phenomena, a New Literacy movement has emerged that encourages educators to consider not just the traditional print-based literacies, but also digital literacies shaped by social practices:

> New technologies such as blogs, wikis, massively multiplayer online games, social networking technologies and video- and music-dissemination technologies have rapidly spread, by means of the Internet, each with additional, new literacy forms and functions that are reshaped by social practices… literacy has now come to mean a rapid and continuous process of change in ways in which we read, write, view, listen, compose, and communicate information (Coiro, Knobel, Lankshear & Leu, 2008, p. 5).

Social capital theory says that social networks are valuable because of their ability to build committed communities where individuals support each other in the pursuit of common goals (Smith, 2009). Social scientists have concluded that joining and being involved in groups has a positive impact on health and well-being and that educational achievement rises when learners have a supportive associational life (Smith, 2009). Membership in positive social networks can help teach learners trust, tolerance, acceptance, and collaboration (the opposite can happen with negative social networks).

According to social learning theories (Brown & Duguid, 2002), learning occurs in social contexts and is influenced by symbolic interactions. John Seeley Brown (2008) further explains that learning communities are groups of people who share an interest in the learning process, learn both with as well as from each other, and develop a supportive atmosphere to encourage success among members.

A study by Greenhow and Robelia (2009) examined the role of a social network site (SNS) and social capital in the lives of high school teenagers from low-income families in the U.S. They found that SNSs facilitated emotional support, helped maintain relationships, and provided a platform for self-presentation; that students used their online social network to fulfill essential social learning functions; and that students engaged in a complex array of communicative and creative endeavors including new literacy practices. They concluded that SNS can help kids in school by increasing student engagement in the learning process. According to Greenhow as quoted in Yang Su (2011),

> When kids feel connected and have a strong sense of belonging to the school community, they do better in school... They persist in school at higher rates and achieve at higher rates. ... It’s pretty promising that engaging in social networking sites could help them to develop and deepen their bonds over time.

Responding to student usage, teachers and students are increasingly using social networks to supplement teaching and learning in traditional classroom environments, as they provide new opportunities for enriching existing curriculum through creative, authentic and/or flexible non-linear learning experiences (Buzzetto-More, 2007). According to Fogg et al. (2010):

> Raised in the "always-on" world of interactive media, the Internet, and social media technologies, students today have different expectations and learning styles than previous generations. The ubiquitous use of social and mobile technologies gives teens an unprecedented opportunity to use tools like Facebook to create self-organizing learning communities or Personal Learning Networks (PLN). Understanding and incorporating these digital learning opportunities into your coursework will increase student motivation and enhance learning, while better meeting the needs of today's students and their digital learning styles. (p.13)

A study conducted by Pearson Learning Solutions (Moran, Seaman, & Tinti-Kane, 2011) found that 46% of educators use social video and podcasts in course assignments with 20% requiring students to post to social networking sites. The study also found that college faculty are the most likely to use social media with more than 80% of college faculty using some form of social media in their teaching.

Several studies have focused on the impact of social networking on student engagement in the learning process. Shih (2011) examined the use of social networking services in a hybrid learning environment. According to the findings, integrating Facebook and peer assessment can enhance knowledge construction, increase student interest and engagement, and foster collaborative learning. Additionally, Webb (2009) found that using a variety of social media as part of the teaching and learning process with students both in and outside of the classroom resulted in an overall increase in student engagement.

The significance of social networking technologies has not gone unnoticed by the United States Department of Education. In the 2010 U.S. National Technology Education Plan, Transforming American Education: Learning Powered by Technology, the U.S. Department of Education calls for "applying the advanced technologies used in our daily personal and professional lives to our entire education system to improve student learning." Additionally, it includes a proposal to use social networking as a platform for learning and urges educators to create engaging, relevant, and personalized learning experiences that mirror students' lives and interests.

Social networking technologies allow learning to be available on demand (United States Department of Education, 2010), authentic (Fogg et al., 2011), media rich (Cheal, Coughlin, & Moore, 2012), social (Greenhow & Robelia, 2009), supporting of digital literacy (Coiro et al., 2008), student centered (Fogg et al., 2011), and appealing to digital natives (Buckingham, 2007). With well-developed learning activities and sound pedagogy in mind, social networking can be used to create learning activities that are highly constructivist. These benefits are envisioned and elaborated upon in Table 2.

Table 2: Learning Theories Supported by Social Networking

LEARNING THEORY	CITATION
Social learning theory Social networks build social capital where students are supported by, and participate in, learning communities influenced by social discourse and symbolic interactions. Providing students with social, emotional, and cognitive support. Fulfilling various social learning functions through collaboration and students to like-minded learners and building students' communication and technology skills and understanding different points of view.	• Greenhow & Robelia (2009); • Smith (2009); • Brown (2008); • Ellison, Steinfield, & Lampe (2007); • Buzzetto-More (2012)
Constructivism Learning that is student-centered and self-directed, instructor-facilitated, experiential, active, authentic, reflective, and dependent on social discourse.	• Cheal (2012)
Learning Available On Demand Learning that can be available synchronous and asynchronous, via any location, and through the use of a number of electronic mobile and non-mobile devices.	• Fogg et al. (2011); • United States Department of Education (2010)
Authentic Learning Learning that is based on real world activities and activities that represent authentic applications.	• United States Department of Education, (2010); • Yang Su, (2011); • Fogg et al. (2011)
Student-Centered Learning Learning that is student-directed and active and where the responsibility is shifted to the student with the instructor serving as a facilitator.	• Fogg et al. (2011); • Buzzetto-More (2012); • Greenhow as reported in Yang Su, (2011)
Student Engagement Learning where students are committed participants in the learning process, motivated to succeed, active in learning communities, and willing to persist despite challenges.	• Shih (2011) • Webb (2009)
Digital Literacy Learning that supports the new literacy movement, which includes not just traditional print-based literacy but also computer basics, use of hardware and software, information acquisition and usage, ability to navigate and use the World Wide Web, Internet security and safety, communicating via social media, and awareness of cyber bullying and other predatory online behaviors.	• Coiro et al. (2008);
Media Richness and Sensory Complexity Learning that is media rich and has sensory complexity leads to high-disclosure and greater engagement on the part of learners.	• Cheal (2012); • Jones & Shiao (2011)

Despite the benefits of social networking, famed author Sherry Turkle warns us about the potential pitfalls. Turkle (2008) introduced the term "tethering to describe when individuals become overly dependent on, and preoccupied with, online socialization. She explains that tethering results in continuous partial attention and a disengagement from the "real world". In addition to attention problems cause by tethering, invasion of privacy, unauthorized disclosure of personal

information, internet addiction disorder, cyber-stalking, cyber-bullying, virtual harassment, identity theft, distribution of explicit content to minors, and libel are also very real issues that plague the use of social networking services in education (COWL, 2006; Doherty, 2010). Most concerning is the impact of cyber-bullying. A 2010 study conducted by the University of Valencia estimates that almost 30% of teens are cyber bullied each year. Such bullying can be devastating, as it increases a young-adult's feelings of anxiety, depression, social withdrawal, and suicidal tendencies (Buelga, 2010).

Facebook

Facebook is a social networking service founded in 2004, which is privately owned by Facebook, Inc. Facebook users may create a personal profile, add other users as friends, exchange messages, or join common interest user groups. Facebook currently has the dominant share of the social networking market and is not just the number one ranked social networking service but one of the most popular Websites on the internet. As of January 2012, Facebook had more than 845 million active users (up from 600 million at the end of 2010) and accounts for one out of every five page views on the internet worldwide (Infographics Lab, 2012). Over 50% of the population of North America uses Facebook, there are 425 million mobile users, 57% of users are female, users share over 100 billion connections collectively, there are 2.7 billion "likes" and 250 million photos added to Facebook daily, the average Facebook user spends 20 minutes on the site per visit, and Facebook doubled its revenue from $600 million in 2010 to over $1 billion in 2011 (Infographics Lab, 2012) According to Facebook, Facebook is available in more than 70 languages, 80% of users are located outside the United States, 50% of their users log in daily and the average user contributes 70 items per month (Facebook, 2010). In education Facebook is being used to link students to content such as pages created by Pulitzer Prize-winning journalists, politicians, museums, and thousands more; for discourse, interaction, and or collaboration; to share links to articles, videos, and other resources; for study questions and Q and A sessions; to post news and announcements; and as a means to create learning communities.

According to the Facebook Guide for Educators,

> Facebook can provide students with the opportunity to effectively present their ideas, lead online discussions, and collaborate. In addition, Facebook can help you, as an educator, to tap into the digital learning styles of your students. For example, it can facilitate student-to-student collaboration and provide innovative ways for you to involve students in your subject matter. We also believe that Facebook can be a powerful tool to help you connect with your colleagues, share educational content, and enhance communication among teachers, parents and students. (Fogg et al., 2011, p. 3)

Methodology

For the purposes of this study, the use of Facebook was incorporated into several courses taken by management students at a U.S. Mid-Atlantic minority-serving university during the spring of 2010 as well as throughout the 2011 academic year. The courses involved included Business Ethics, Management Information Systems, and Business Communications. Two of the courses Business Ethics and Management Information Systems were offered fully online. The third course, Business Communications, was offered in a hybrid format where some meeting times were forfeited to support online learning. The Blackboard Learning Management System was used in all courses for distribution of PowerPoint files, lecture captures, and handouts; submission and grading of assignments; shared grade-book access; pre-designated instructor led discussions; quizzes; providing links to online resources such as Questgarden where course WebQuests were housed; weekly course announcements; and hosting collaborative group work and meeting sessions.

In addition to the use of the Blackboard Learning Management System, for each course a Facebook group was created and students across sections of the same course were invited to join their course group. Facebook was used in all courses for distribution of instructor and student posted announcements; faculty-led and student-led discussions; question and answer opportunities; faculty to student as well as peer sharing of resources such as web sites, YouTube videos, news articles, and images; polling; and timely commentary on student events. Facebook participation was made mandatory and points were assigned for participation.

Students were not given guidelines for their Facebook participation, rather they were simply instructed that they were to make contributions or pose questions that were relevant to the course, that their participation should be ongoing, meaningful, and thoughtful, and that both original contributions and comments on the postings made by others were to be included. To support the activities, throughout the term the instructor actively contributed and acted as both an engager as well as facilitator providing clarification and/or further thoughts to engender more discussion.

To some extent, there was a duplication of activities among the Blackboard and Facebook systems; however, the nature of the two distinct systems dictates the trajectory of these activities. For example, as a learning management system (LMS), Blackboard is an instructor designed and managed system representing a fairly controlled environment that lends a certain formality to all behaviors occurring within the system. Additionally, as an LMS, Blackboard has considerably more features/capabilities available to support e-learning. Facebook on the other hand, as a social networking system, is not highly controlled (unless a group administrator denies group members the ability to post messages on the group wall). Further, the nature of social networking systems encourages a certain immediacy/currency and lack of formality to interactions allowing students to take the lead in the direction of the discourse and content posted.

The structure of Facebook groups changed during the course of this study. The initial group structure included a Wall that served as the homepage for the group as well as Information, Discussion, Photo, Video, and Event tabs. The instructor posted information on the Wall as well as used the Info tab for additional course information, the Discussion tab for threaded discussions, the Photo and Video tabs for archiving of photo and video files, and the Event tab for course and school events as well as other reminders. Students were encouraged to comment on instructor posts, contribute their own posts on the group wall, share video files or articles by posting them on the wall, contribute to the discussions in the Discussion Tab, or create new discussion topics. Students were given the freedom to post anything that they felt was relevant to the course. Figure 1 shows the group structure based on the original structure.

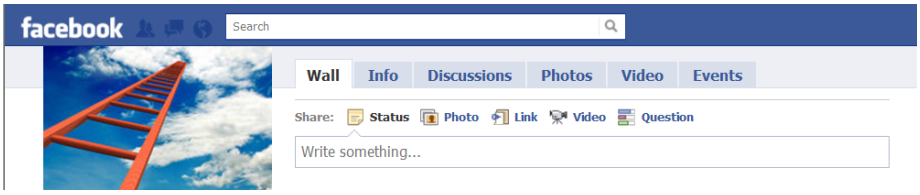

Figure 1: Facebook Group Structure at the Beginning of the Study

With the original structure, the instructor served as the group administrator. All groups were set to open, non-administrators had permission to write on the wall, notifications were turned on, links were enabled, and all other features were available. In early 2011, Facebook changed the structure of Facebook Groups. The new structure eliminated all of the tabs (see Figure 2), as a result, all participation occured on the group wall.

Figure 2: Facebook Group Structure at the End of the Study

An online questionnaire was developed and distributed using the Web-based survey tool, Zoomerang. It was distributed to students via an email invitation sent directly from the Zoomerang system following the closure of each of the three academic terms included in the study. Participation in the survey was voluntary and all responses were anonymous. The survey was comprised of a combination of Likert scaled, dichotomous multiple choice, and ranking scaled questions. The data was collected and recorded within Zoomerang and later analyzed based on descriptive statistics and frequency distribution. Additionally, a series of cross tabulations were run to examine the impact of gender and amount of time spent online on student opinion.

The following hypotheses were also tested as part of this study:

> H_1: Social networking sites like Facebook help to build relationships within learning communities
>
> H_2: Social networking sites like Facebook help to build learning communities
>
> H_3: Social networking sites like Facebook engage students

In addition to the questionnaire, a conceptual and relational content analysis was conducted. Original postings rather than comments on the postings made by others were examined and categorized both by semantic presence and theme. As with virtually all content analysis studies, the research was qualitative rather than quantitative, inferential, and subject to a high degree of instability. As a result, the data generated from the content analysis should be viewed as approximations.

Results and Discussion

Content Analysis

A non-scientific content analysis that was conducted found that at the beginning of each term, regardless of the course, students began by commenting on the postings made by the instructor. As the semesters moved forward students increasingly preferred to post original commentary, so that over the course of each term the postings made by the students found on the group wall outnumbered the comments on postings made by the instructor 3:1. Additionally, students were found to be significantly more likely to comment on the postings made by their fellow students than those posted by the instructor.

Original postings, rather than comments on the postings made by others, were examined and categorized by semantic presence and subject matter. According to the analysis, many of the student generated posts questioned the larger group either about specific course activities or as a way to engender discussion about key course topics. As such, approximately 10-12% of all posts found on the group walls were questions related to course exams, assignments, or group projects. Further, an additional 22% of the posts found on the wall were questions of topical interest posed by the students to the larger group for commentary.

The most frequent type of contribution were links to articles, new events, or other matters of interest represented by approximately one fourth of all original postings. Multimedia items (mostly video files) represented approximately 8-10% of the postings made and on only a handful of oc-

casions each term students contributed links to scholarly journal articles or other research materials.

As with all responsible content analyses, a significant portion of content should remain uncategorized due to vagueness or lack of relevance. As such, more than one third of the original contributions fell into the category of *other* which included announcements of university sponsored student activities, notices of non-university sponsored student social events, birthday wishes to classmates, non-course related questions or topical commentaries, questions about university processes, and/or criticism/complaints about the university.

Several students each term continued contributing to the Facebook group following the end of course so as to find themselves interacting with students during ensuing terms. Additionally, a handful of times an unwarranted solicitation was made by non-students. While most of the intrusions were manageable, the intrusions by non-students in the course BUAD 300: Business Ethics became a distraction causing the instructor to make the group private.

Questionnaire Findings

A survey was distributed via the Zoomerang survey system. In total, 324 email invitations were distributed with 218 survey visits, representing a response rate of 67%. There were 186 completed surveys representing a completion rate of 57%. The age distribution of the population was representative of the larger university with 78% of respondents between the ages of 18-24, 14% of respondents between the ages of 25-31, 6% of respondents between the ages of 32-40, and only 2% of respondents reporting that they were >41.

As a Historically Black University, the majority of respondents were African American. 56% of the respondents reported that they were African American, 12% reported that they were African, 3% reported that they were Hispanic, 1% reported that they were Middle Eastern, 4% categorized themselves as a Caribbean Islander, 5% said that they were Asian or a Pacific Islander, 14% reported being White or of European Descent, and 5% claimed that they were other. The ethnic distribution of respondents is represented in Figure 3.

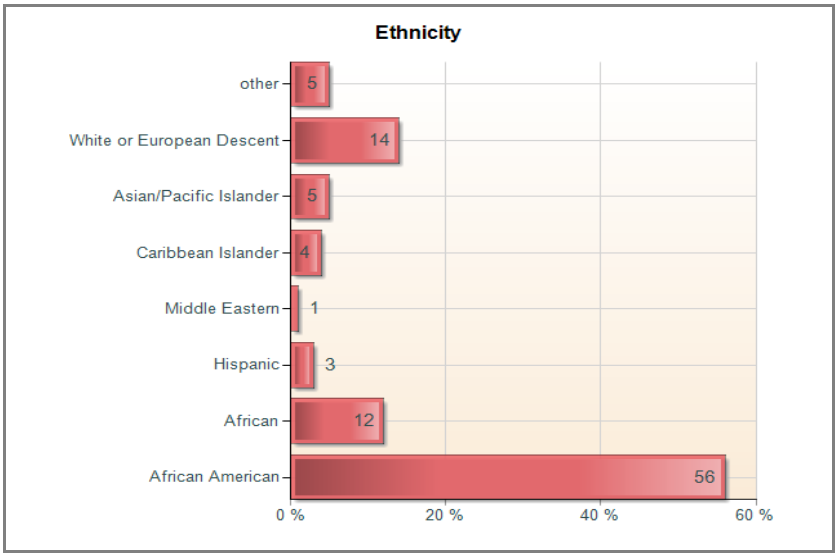

Figure 3: Ethnic Distribution of Respondents

The respondents were asked to report how many hours they spend per week online with 0% reporting that they spend no time online, 7% reporting 1-2 hours per week of online activity, 34% estimating that they spend 3-8 hours per week online, 26% reporting that they spend 9-15 hours

per week online, 17% reporting that they spend 16-28 hours per week online, 12% estimating that they spend 29-40 hours per week online, and 8% estimating that they average more than 35 hours per week of online activity on a consistent basis. In total, approximately 63% of the respondents estimate that they normally spend greater than 9 hours per week online n>9. The responses are represented in the line graph in Figure 4.

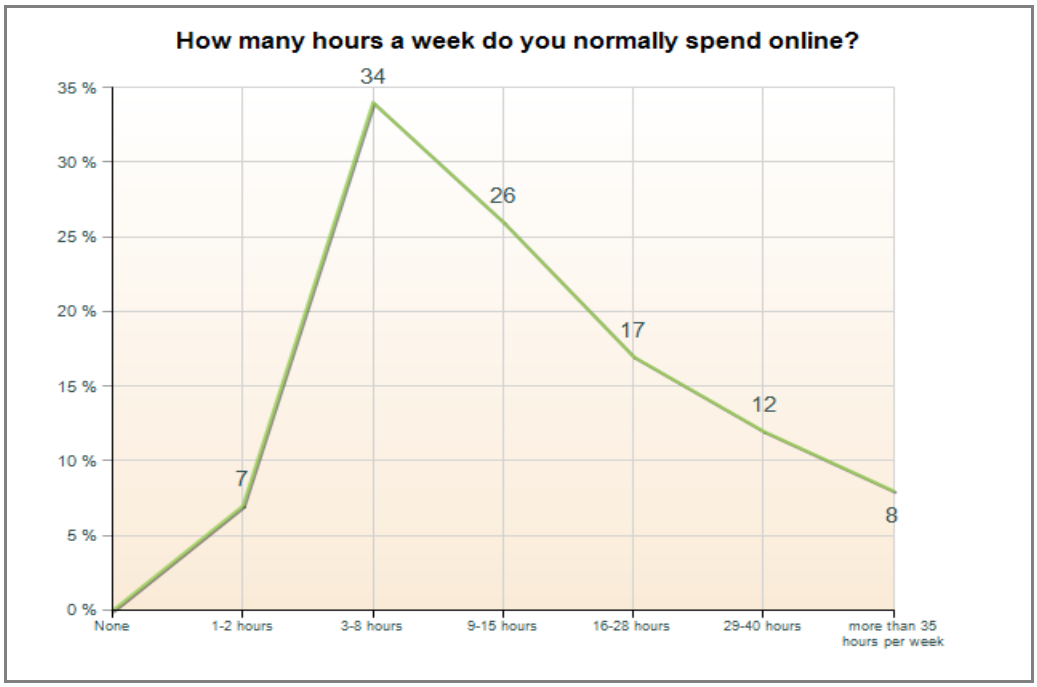

Figure 4: Respondent Hours Spent Online Per Week

When the respondents were asked how many hours per week they spend engaged in social networking activities such as Facebook, Twitter, Second Life, Blogging, Online Discussion Forums, or in another online community, 4% said no time is spent each week, 27% reported 1-2 hours of social networking activity, 33% estimated 3-8 hours, and 37% reported that they spend more than 9 hours per week on social networking related activities. Figure 5 represents the responses for this question.

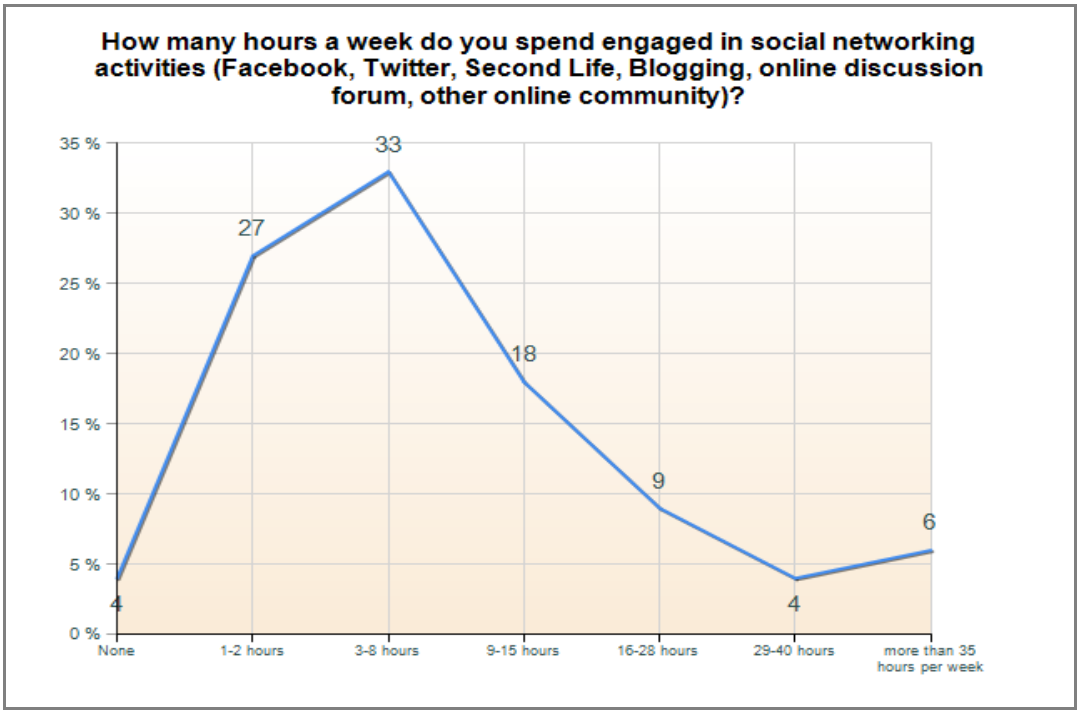

Figure 5: Respondent Hours Spent Per Week Engaged in Social Networking

A series of Five-Point Likert scaled questions were asked designed to measure levels of agreement where 1 equaled strongly disagree, 2 equaled disagree, 3 represented neutral or undecided, 4 equaled agree, and 5 equaled strongly agree. When asked to respond to the statement "Social networking sites like Facebook help to build/strengthen interpersonal relationships"65% were in agreement, 25% were either neutral or undecided, and 11% either disagreed or strongly disagreed. The mean for the question was a 3.75, with a mode of 4, and a standard deviation of 0.91. These findings support hypothesis one, H_1: Social networking sites like Facebook help to build interpersonal relationships, and are similar to the research findings reported by Greenhow and Robelia (2009). The frequency distribution and descriptive statistics are represented in Table 3. Additionally, the findings are graphically represented in the chart in Figure 6.

Table 3: Social networking sites like Facebook help to build/strengthen interpersonal relationships.

1 - Strongly Disagree	3	2%
2 – Disagree	16	9%
3 - Neutral/ Undecided	47	25%
4 – Agree	87	47%
5 - Strongly Agree	33	18%
Total	186	100%

Mean	Mode	Standard Deviation	Standard Error	Confidence Interval @ 95%
3.75	4	0.91	0.07	[3.57 - 3.84]

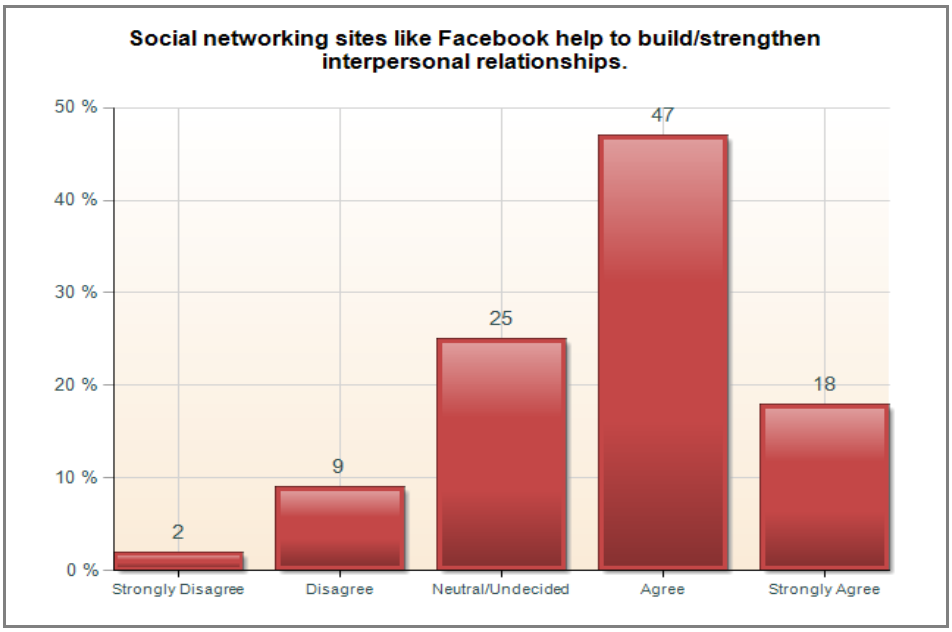

Figure 6: Perceptions of the Impact of Social Networking on Interpersonal Relationships

When asked to respond to the statement "Social networking sites help to build/strengthen a sense of community within a learning environment," 63% were in agreement, 24% expressed neutrality, and 13% expressed disagreement. The mean for the question was a 3.65, with a mode of 4, and a standard deviation of 0.97. This supports Hypothesis two, H_2: Social networking sites like Facebook help to build learning communities, and are similar to the research findings reported by Greenhow and Robelia (2009) and Yang Su (2011). The frequency distribution and descriptive statistics are represented in Table 4. Additionally, the findings are graphically represented in the chart in Figure 7.

Table 4: Social networking sites help to build/strengthen a sense of community within a learning environment

1 - Strongly Disagree	4	2%
2 – Disagree	21	11%
3 - Neutral/ Undecided	45	24%
4 – Agree	83	45%
5 - Strongly Agree	33	18%
Total	186	100%

Mean	Mode	Standard Deviation	Standard Error	Confidence Interval @ 95%
3.65	4	0.97	0.07	[3.51 - 3.78]

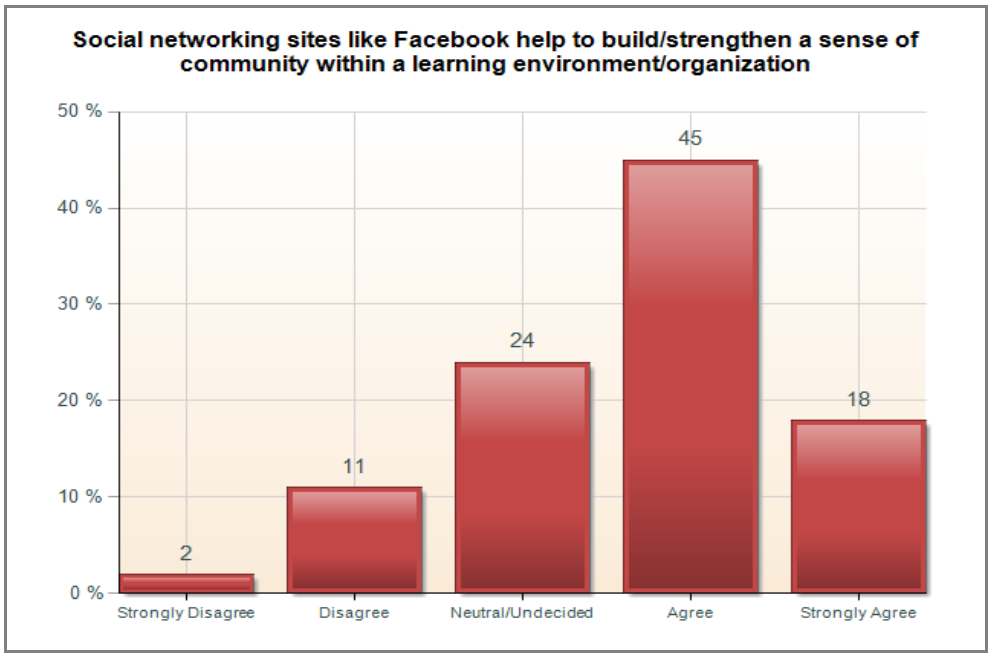

Figure 7: Response to Statement "Social networking sites help to build/strengthen a sense of community within a learning environment."

A majority of students (56%) agreed to the statement "Social networking sites can enhance the learning process," with 29% reporting that they were neutral or undecided and 16% expressing disagreement. These findings support the work of Jones and Shiao (2011). The mean for the question was a 3.48, with a mode of 4, and a standard deviation of 0.9. The frequency distribution and descriptive statistics are represented in Table 5. Additionally, the findings are graphically represented in the chart in Figure 8.

Table5: Social networking sites can enhance the learning process.		
1 - Strongly Disagree	3	2%
2 – Disagree	25	14%
3 - Neutral/ Undecided	52	29%
4 – Agree	86	47%
5 - Strongly Agree	16	9%
Total	182	100%

Mean	**Mode**	**Standard Deviation**	**Standard Error**	**Confidence Interval @ 95%**
3.48	4	0.9	0.07	[3.35 - 3.61]

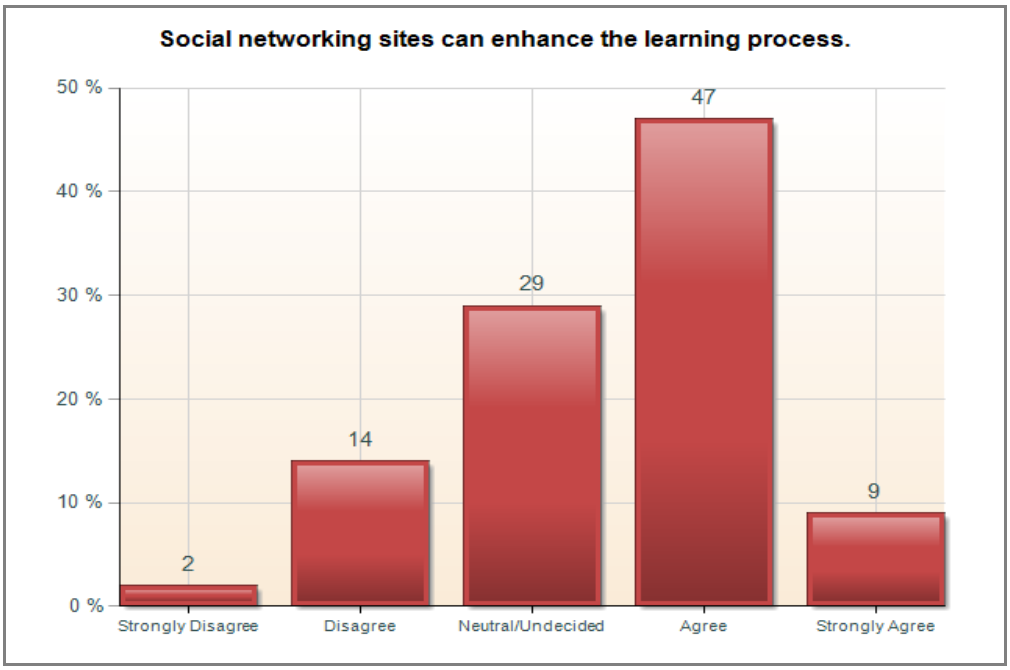

Figure 8: Response to statement "Social networking sites can enhance the learning process."

Social networking services have been cited as creating more interesting learning environments (Fogg et al., 2011). In this study, 60% of students responded that Facebook can make classes more interesting with 23% reporting that they were neutral or undecided and 17% expressing disagreement. The mean for the question was a 3.53, with a mode of 4, and a standard deviation of 1.02. The frequency distribution and descriptive statistics are represented in Table 6. Additionally, the findings are graphically represented in the chart in Figure 9.

Table 6. Facebook can make classes more interesting.

1 - Strongly Disagree	7	4%
2 – Disagree	24	13%
3 – Neutral	41	23%
4 – Agree	83	46%
5 - Strongly Agree	25	14%
Total	180	100%

Mean	Mode	Standard Deviation	Standard Error	Confidence Interval @ 95%
3.53	4	1.02	0.08	[3.38 - 3.68]

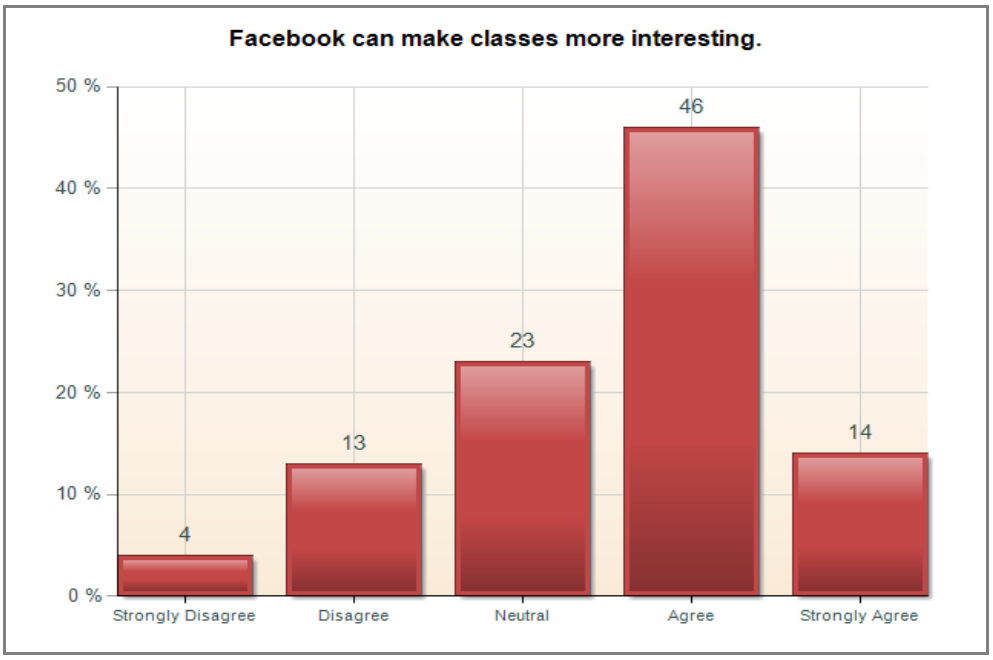

Figure 9: Response to the Statement "Facebook can make classes more interesting."

Social networking technologies have been shown to increase student engagement (Cheal, 2012; Shih, 2011). When asked to respond to the statement "The use of Facebook as a learning tool engages students," 61% of participants were in agreement, with 20% expressing neutrality and 18% in disagreement. These results affirm hypothesis three, H_3: Social networking sites like Facebook engage students. The mean for the question was a 3.52, with a mode of 4, and a standard deviation of 1.00. The frequency distribution and descriptive statistics are represented in Table 7. Additionally, the findings are graphically represented in the chart in Figure 10.

Table 7: The use of Facebook as a learning tool engages students

1 - Strongly Disagree	7	4%
2 – Disagree	26	14%
3 – Neutral	37	20%
4 – Agree	92	50%
5 - Strongly Agree	21	11%
Total	183	100%

Mean	Mode	Standard Deviation	Standard Error	Confidence Interval @ 95%
3.52	4	1	0.07	[3.37 - 3.66]

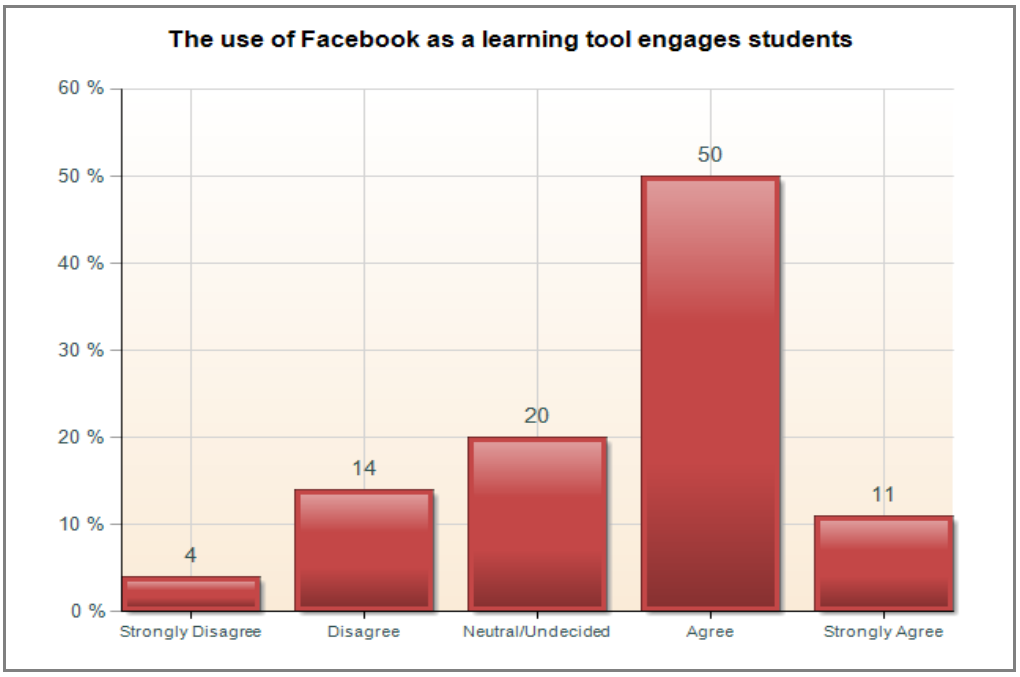

Figure 10: Response to the Statement "The use of Facebook as a learning tool engages students."

Most students (60%) agreed that the use of Facebook enhances class discussions with 24% expressing neutrality and 16% in disagreement. The mean for the question was a 3.54, with a mode of 4, and a standard deviation of 0.98. The frequency distribution and descriptive statistics are represented in Table 8. These findings which are graphically represented in the chart in Figure11 are similar to what has been reported by Yang Su (2011).

Table 8: The use of Facebook enhances class discussions

1 - Strongly Disagree	5	3%
2 – Disagree	24	13%
3 – Neutral /Undecided	42	24%
4 – Agree	83	47%
5 - Strongly Agree	24	13%
Total	178	100%

Mean	Mode	Standard Deviation	Standard Error	Confidence Interval @ 95%
3.54	4	0.98	0.07	[3.40 - 3.69]

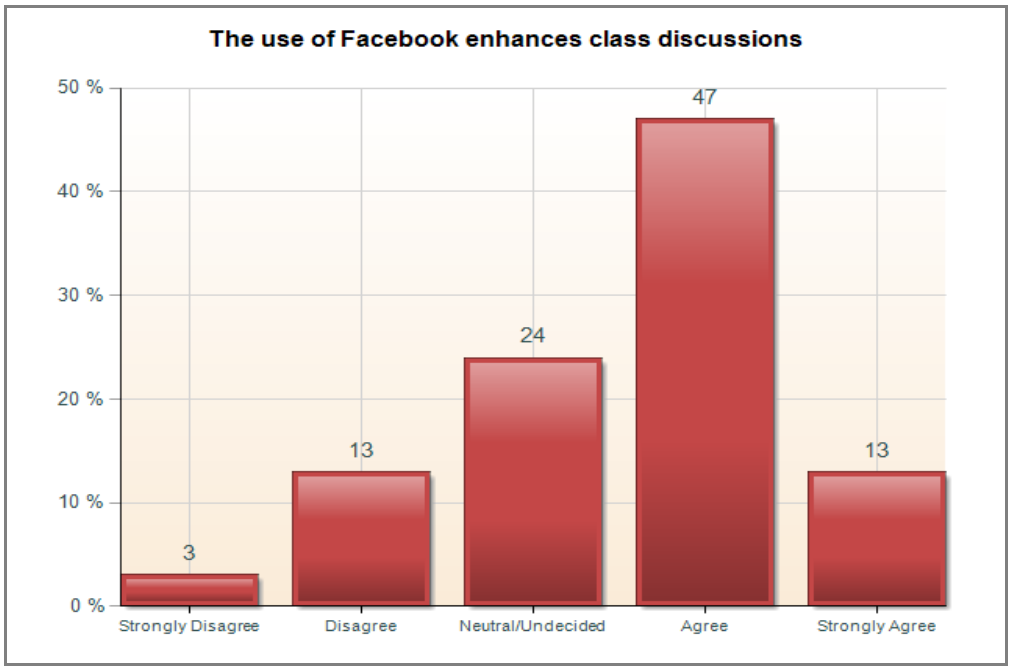

Figure 11: Response to the Statement "The use of Facebook enhances class discussions."

Around half of the students (49%) reported that they preferred the Facebook discussions over the Blackboard discussions with 16% neutrality and 35% disagreement. The mean for the question was 3.12, with a mode of 4 and a standard deviation of 1.3. The frequency distribution and descriptive statistics are represented in Table 9. Additionally, the findings are graphically represented in the chart in Figure 12.

Table 9: I preferred the Facebook discussions over the Blackboard discussions

1 - Strongly Disagree	27	15%
2 – Disagree	37	20%
3 - Neutral/Undecided	30	16%
4 – Agree	63	35%
5 - Strongly Agree	25	14%
Total	182	100%

Mean	Mode	Standard Deviation	Standard Error	Confidence Interval @ 95%
3.12	4	1.3	0.1	[2.93 - 3.31]

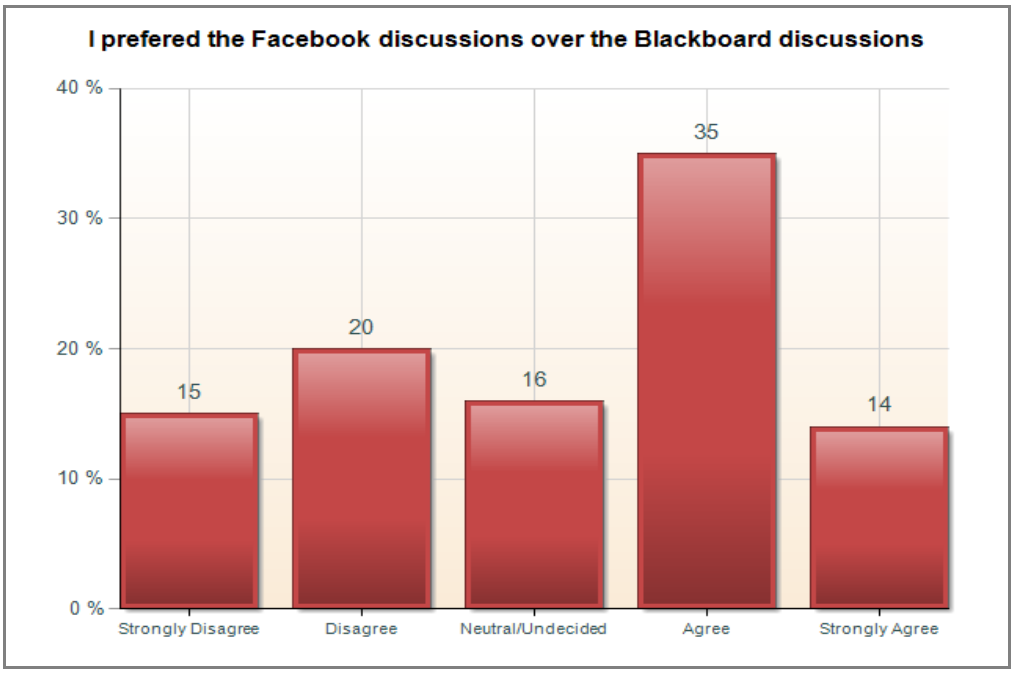

Figure 12: Discussion Preference

Students were largely mixed when asked to respond to the statement, "There are no specific benefits that make Facebook a better forum for class discussions and announcements over a learning management system like Blackboard;" 39% expressed agreement, 33% noted neutrality, and 29% expressed disagreement. The mean for this question was a 3.15 with a mode of 3 and a standard deviation of 1.05. The findings are represented in Table 10 and Figure 13.

Table 10: There are no specific benefits that make Facebook a better forum for class discussions and announcements over a learning management system like Blackboard

1 - Strongly Disagree	9	5%
2 – Disagree	43	24%
3 - Neutral/ Undecided	59	33%
4 – Agree	52	29%
5 - Strongly Agree	18	10%
Total	181	100%

Mean	Mode	Standard Deviation	Standard Error	Confidence Interval @ 95%
3.15	3	1.05	0.08	[3.00 - 3.30]

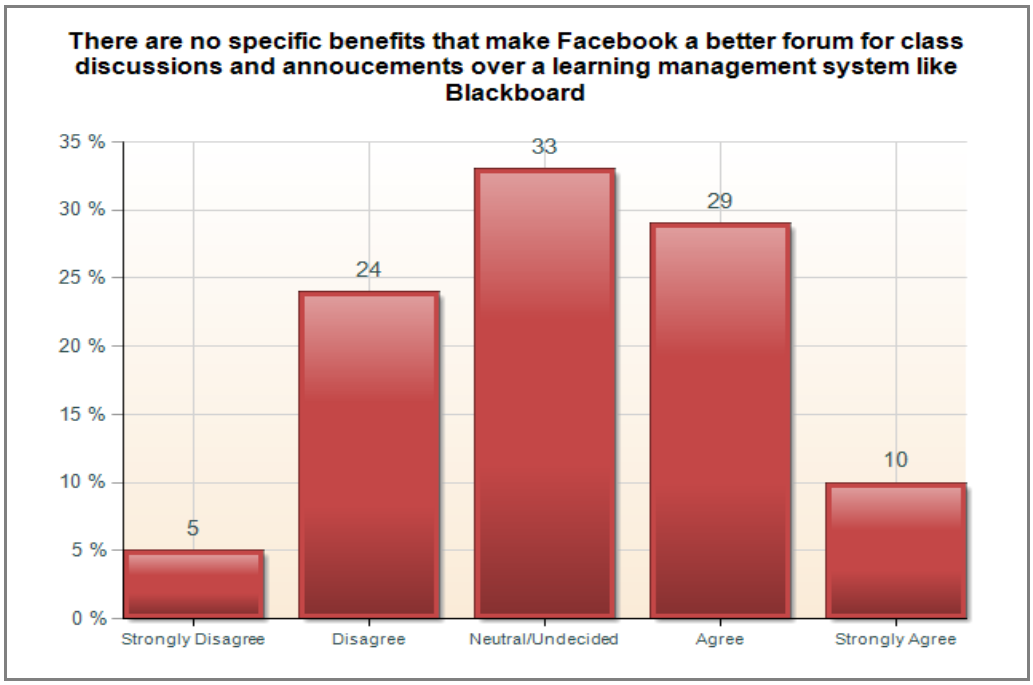

Figure 13: Response to the statement "There are no specific benefits that make Facebook a better forum for class discussions and announcements over a learning management system like Blackboard"

Few students agreed that they would rather their instructors put their course websites in Facebook instead of Blackboard (30%), with 17% neutrality and 53% disagreement. The mean for the question was a 2.6, with a mode of 2, and a standard deviation of 1.19. The frequency distribution and descriptive statistics are represented in Table 11. Additionally, the findings are graphically represented in the chart in Figure 14.

Table 11: I would rather my instructors put their course website in Facebook instead of Blackboard

1	1 - Strongly Disagree	39	22%
2	2 – Disagree	56	31%
3	3 – Neutral	31	17%
4	4 – Agree	49	27%
5	5 - Strongly Agree	6	3%
Total		181	100%

Mean	Mode	Standard Deviation	Standard Error	Confidence Interval @ 95%
2.6	2	1.19	0.09	[2.42 - 2.77]

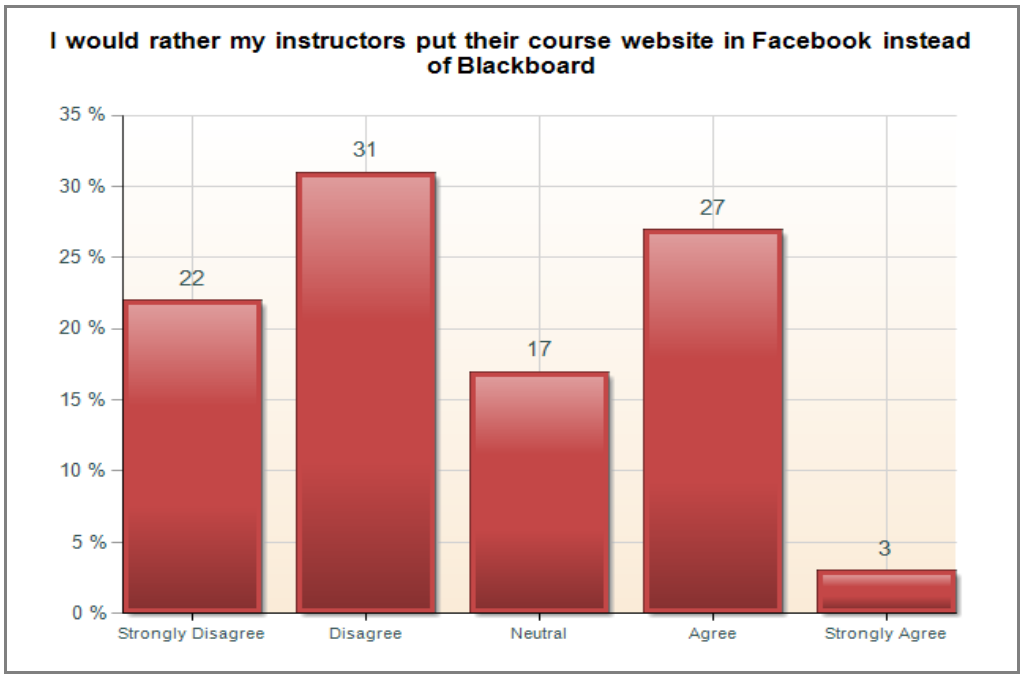

Figure 14: Responses to the statement "I would rather my instructors put their course website in Facebook instead of Blackboard."

Students were asked to compare Facebook to Blackboard with respect to a number of learning related activities. Each activity or attribute was rated on a scale on 1-9 where Facebook was a 1, 5 equaled "the same", and Blackboard was a 9. According to the findings, Blackboard was considered better suited for course announcements and providing links to course resources. The two systems were rated equal when it comes to hosting study sessions, supporting group projects, and facilitating question and answer sessions. Facebook was considered overwhelmingly superior when it comes to community building as well as more effective for facilitating class discussions. The findings are represented in Table 12.

Table 12: Comparison of Usefulness of Features of Facebook and Blackboard

Please compare Facebook to Blackboard with respect to the following activities. If you think something is better in Blackboard then select a pt on the scale near Blackboard. If you think something is better in Facebook select a pt on the scale near Facebook. If you think it is the same select the midpoint, etc.

Top number is the count of respondents selecting the option. Bottom number is the percentage	**Facebook**	**2**	**3**	**4**	**The same**	**6**	**7**	**8**	**Blackboard**
Course Announcements	22 12%	9 5%	9 5%	10 5%	35 19%	9 5%	16 9%	23 13%	50 27%
Links to Course Resources	14 8%	12 7%	8 4%	9 5%	30 16%	16 9%	16 9%	24 13%	53 29%
Class Discussions	35 20%	18 10%	20 12%	16 9%	26 14%	8 4%	12 7%	14 8%	34 18%
Study Sessions	21 11%	8 4%	17 9%	9 5%	41 22%	12 7%	14 8%	22 12%	39 21%
Group Projects	27 15%	17 9%	15 8%	19 10%	30 16%	10 5%	8 4%	18 10%	39 21%
Question & Answer Sessions	27 15%	20 11%	15 8%	16 9%	26 14%	6 3%	13 7%	23 13%	37 20%
Community Building	57 31%	21 12%	17 9%	20 11%	37 20%	6 3%	2 1%	7 4%	14 8%

Approximately 27% of respondents reported that Facebook is not an appropriate environment for learning with 30% neutrality and 44% disagreement. The mean for this question was a 2.8, the mode was a 2, and the standard deviation a 1.08. The frequency distribution and descriptive statistics are represented in Table 13. Additionally, the findings are graphically represented in the chart in Figure 15.

Table 13: Facebook is not an appropriate environment for learning

1 - Strongly Disagree	18	10%
2 – Disagree	62	34%
3 - Neutral/Undecided	54	30%
4 – Agree	37	20%
5 - Strongly Agree	12	7%
Total	183	100%

Mean	Mode	Standard Deviation	Standard Error	Confidence Interval @ 95%
2.8	2	1.08	0.08	[2.64 - 2.95]

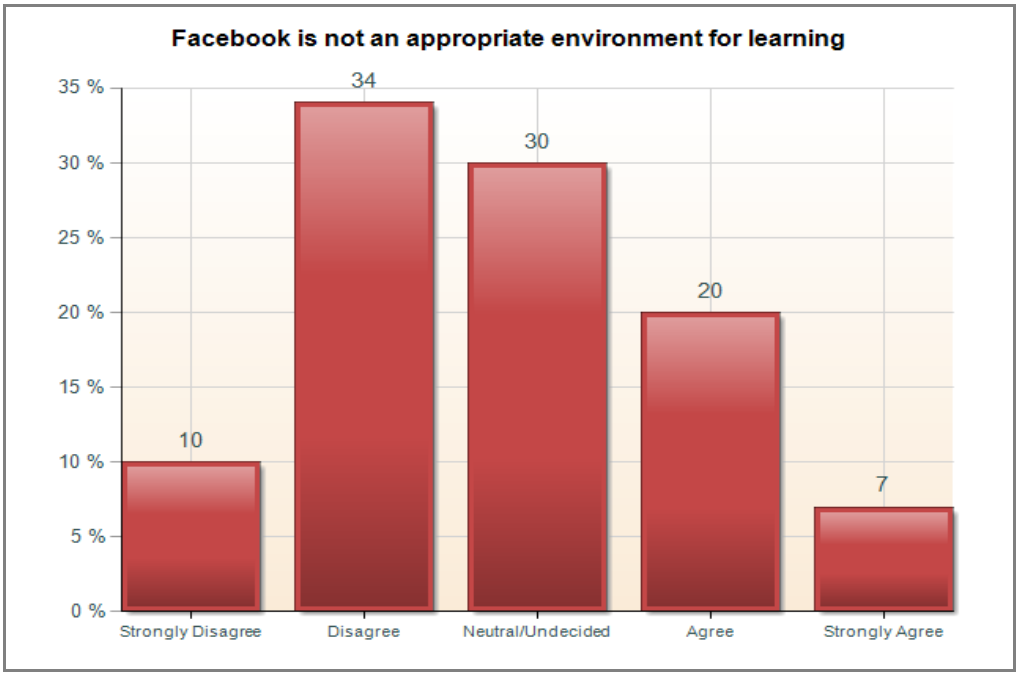

Figure 15: Responses to the statement "Facebook is not an appropriate environment for learning."

Several crosstabulations were run as part of this study. The first crosstabulation considered gender and found that females were more likely to feel that the use of Facebook as a learning tool engages students. At the same time, men were more likely to be in agreement that social networking sites can enhance the learning process. Both findings are represented in Table 14.

Table 14: Crosstabulation based on gender					
	The use of Facebook as a learning tool engages students				
Gender	Strongly Disagree N=7	Disagree N=23	Neutral/ Undecided N=37	Agree N=96	Strongly Agree N=21
Male N=89	5 (71 %)	14 (56%)	22 (59 %)	38 (40 %)	10 (48 %)
Female N=95	2 (29 %)	9 (44 %)	15 (41 %)	58 (60 %)	11 (52 %)
	Social networking sites can enhance the learning process.				
Gender	Strongly Disagree N=3	Disagree N=26	Neutral/ Undecided N=50	Agree N=86	Strongly Agree N=18
Male N=87	1 (33 %)	12 (48 %)	18 (36 %)	45 (52 %)	11 (58 %)
Female N=96	2 (67 %)	14 (52 %)	32 (64 %)	41 (48 %)	7 (42 %)

When amount of time online was considered, the more time respondents spent online had a positive correlation with their tendency to agree to the statement 'Social networking sites can enhance the learning process". These findings are represented in Table 15.

Table 15: Crosstabulation based on time spent online. How many hours a week do you normally spend online?					
	Social networking sites can enhance the learning process.				
Hours Per Week	Strongly Disagree N=3	Disagree N=22	Neutral/ Undecided N=53	Agree N=88	Strongly Agree N=15
None N=0	0 (0 %)	0 (0 %)	0 (0 %)	0 (0 %)	0 (0 %)
1-2 N=12	1 (33 %)	5 (22 %)	4 (8 %)	2 (2 %)	0 (0 %)
3-8 N=58	1 (33 %)	7 (32 %)	21 (41 %)	28 (33 %)	2 (13 %)
9-15 N=48	0 (0 %)	7 (32 %)	14 (27 %)	19 (22 %)	7 (47 %)
16-28 N=30	1 (33 %)	2 (10 %)	4 (8 %)	22 (26 %)	1 (7 %)
29-40 N=22	0 (0 %)	1 (4%)	5 (10 %)	13 (15 %)	3 (20 %)
> 35 N=11	0 (0 %)	0 (0 %)	5 (10 %)	4 (5 %)	2 (13 %)

Contributions and Implications

This study provides research on an area where greater research needs to be published. Further, it focuses on a population that has previously not received sufficient focus and which is largely neglected in the literature.

This paper presents the findings of a study that explored the efficacy of social networking systems as instructional tools by examining the use of Facebook in courses at a U.S. Mid-Atlantic minority-serving university by examining student perception as well as by analyzing content. The content analysis found that as students became more comfortable they were more likely to contribute original postings. Additionally, the most common themes were course or topically related questions addressed to peers and/or the sharing of links to articles, new events, multimedia files, or other matters of interest. Responses to the survey found that students perceive the use of Facebook positively as a tool to enhance communications, community building, and engagement; however, they do not want to see social networking services replace course management systems like Blackboard.

The implications of these findings should encourage college faculty to adopt the use of social networking services as part of the teaching and learning process with a specific focus on building learning communities and increasing student engagement. At the same time, faculty should continue their use of traditional learning management systems using social networking services simply as a means of augmenting instruction.

Limitations

The most significant limitation of this study is that it focused solely on business students attending a single U.S. minority serving university. In order to remedy the shortfalls inherent in this research, the researcher is looking to replicate this study at additional institutions of higher education.

Additionally, this study included results gathered from a content analysis. As with virtually all content analysis studies, the research was qualitative rather than quantitative, inferential, and subject to a high degree of instability. As a result, the data generated from the content analysis should be viewed as approximations. At the same time, the information gleaned from the content analysis provided valuable insight as to the communication patterns of students participating in social networking forums as college course requirement(s).

Conclusion

Social networking services are increasingly being used by educators as teaching and learning tools that supplement traditional classroom environments as they provide new opportunities for enriching existing curriculum through creative, authentic and/or flexible non linear learning experiences (Buzzetto-More, 2007). From chat rooms, discussion forums, blogs and wikis, services like Facebook, and/or virtual world’s like Second Life, social networking tools are being meaningfully added to curriculum.

Social networking services have been shown to foster social learning while engaging students in a complex array of communicative and creative endeavors including new literacy practices. The study reported in this paper examined the perceptions of students who completed courses that used Facebook as an instructional tool and found that the participants considered Facebook a valuable tool that helps to strengthen interpersonal relationships, build learning communities, and engage students.

The use of social networking services in education has been shown to benefit education a number of ways by supporting social learning, constructivist teaching practices, authentic instruction, student centered learning, and on demand access to learning.

More research needs to be conducted into the use of social networking services and other communicative Web 2.0 technologies in teaching and learning. Significant gaps in the literature persist and more studies such as the one presented in this paper should be conducted as we move forward.

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Biography

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