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# Exploring the Effects of Social Networking on Students' Perceptions of Social Connectedness, Adjustment, Academic Engagement, and Institutional Commitment

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ABSTRACT

Social networking is a tool being explored by many institutions as a means of connecting to and communicating with students. This study explores whether or not students' use of social networking services (SNSs) has significant effects on social connectedness, college adjustment, academic engagement, and institutional commitment. Students' use of SNSs did not have significant negative effects on academic performance or engagement. Results suggested that students' use of SNS with students has a strong positive effect on their feelings of Social Connectedness. However, students' use of SNSs with faculty or staff was negatively related to feelings of social connectedness, even when age, enrollment status, credits earned, and college GPA were accounted for. Students' use of SNS or Traditional Technologies (e.g., university e-mail or course-based system) with faculty or staff was significantly positively related to levels of Academic Engagement. Students prefer to use SNSs to establish social connections with friends and family rather than for academic purposes.

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## CKGROUND AND LITERATURE REVIEW

Today's college students are no strangers to the plethora of technologies available to help them facilitate friendships, relationships, and connections with others. From their perspective, technology is part of their world and many students believe that it would be difficult to prosper in educational and social environments without knowing how to use it (Oblinger & Oblinger, 2005). Oblinger and Oblinger (2005) propose that the *net generation* tends to include more visual communicators that have better spatial skills than their predecessors; because they grew up with technology as an integral part of their lives. Unlike many in the older generations, college students today are able to move easily between real and virtual worlds (Oblinger & Oblinger, 2005). As such, social networking is a tool being explored by many institutions as a means of connecting to and communicating with students. This study investigates whether or not use of social networking services (SNSs) has significant effects on students' perceptions of social connectedness, college adjustment, academic engagement, and institutional commitment. We employed qualitative and quantitative methods to explore how SNSs and other more traditional communication technologies such as University e-mail are used by students to interact with other students, faculty, advisors, staff, and administrators.

### Types of Social Networking Services (SNS)

Various social networking sites have become popular in general, but particularly with college students. Arguably, today's most popular social networking site is Facebook. Originally designed at Harvard University to support the college community, the site is now open to the general public (Boyd, 2009). As of 2005, 85% of college students were on Facebook (Arrington, 2005). By 2009, it had 70 million active US users with the largest group being college-aged (18-

25 years old) at 20,357,000 as of 7/6/09 (Smith, 2009). Use of SNS has exploded in recent years as "nearly 500 million people worldwide live their lives-or versions of them-on Facebook" (Fletcher, 2010, p. 32). Blogs, such as LiveJournal, are sites that work as an online journal that user's can make periodic entries in. College students tend to blog more than previous generations with 27.9% reporting owning blogs and 44.4% reading them for an hour or more a week (Junco & Mastrodicasa, 2007). MySpace, first launched in 2003, was intended to compete with Friendster (Boyd, 2009) as a site for finding old friends, single people wanting to meet other singles, families to keep in touch, and a contact source for business people and classmates (MySpace, 2010).

The Case for Social Networking in Higher Education

In 2007 Facebook issued a "call for the education community to create robust education programs to interact with Facebook" (Heiberger, 2008, quoting Morin, 2007). Facebook officially removed the integrated course feature in its site that allowed users to list their current course schedule and link it to discussions, but called on educators in fill in the gap (Heiberger, 2008). In the past, Facebook usage has been linked to poor academic performance, but some educators believe this conclusion may be premature (Junco, 2009). At the same time Facebook has been receiving unfavorable publicity for negatively impacting the students' educational outcomes and experiences; other research indicates that social networking technologies may be beneficial for college students. Muñoz (2009) feels Facebook contains a number of unique features that make it a good choice for educational pursuits. Alec Couros, an assistant professor of education at the University at Regina, feels that there are productive ways for educators to use Facebook despite students' hesitations due to lack of privacy and professional boundaries (Young, 2008). Heiberger maintains that Facebook can be used to increase student engagement

and bases this opinion on Astin's theory of student involvement (2008). Berg noted positive comments from faculty regarding Facebook use with students, such as "I posted my unit's holiday party invitation on Facebook. My students loved it" and "I had e-mailed a student about coming in for a meeting. I waited three days with no response. I tried contacting the same student through Facebook and received a response in fifteen minutes".

There appears to be a plethora of research on both sides of this issue. Hargittai (2007) found in her survey of urban college students that SNS was used less by students living at home than those living on campus, indicating that those whom the university would target for increasing student engagement with these tools would be least likely to benefit from it. Conversely, a study conducted at the University of Minnesota found that low-income students are just as technologically proficient as their counterparts and credit SNS for teaching them technology skills (Harris, 2008). Whether or not students will use SNSs for academic purposes still doesn't address what was found in student voices by Berg (2007), such as this quote: "students are good at compartmentalizing information. Just tell us what we need to know but don't enter our world – we'll come to you". Others advise: "though such systems [SNS] may seem as innovative or problem-solving to the institution, they may repulse some users who see them as infringement on the sanctity of their peer groups, or as having the potential for institutional violations of their privacy, liberty, ownership, or creativity" (Young, 2008). While others simply warn not to force participation.

Mazer, Murphy, and Simonds (2007) investigated students' perceptions of classroom climate and affective learning of college students, when having access to the teacher's Facebook page at three levels of self-disclosure. They found that higher levels of self-disclosure of Facebook, with student access to the Facebook page, led to higher perceived levels of classroom

climate and higher levels of affective learning. However, students in the study mentioned that teachers had to keep professionalism in mind when using Facebook and to take into account that students can see what others post to their wall, but they appreciated knowing more about the teacher's personality. At the same time a theme emerged of fear that a teacher's perception of a student's Facebook page may influence their opinion of that student. One student was quoted as saying: "Facebook can unfairly skew a professor's perception of a student in a student environment" and another mentioned "I think the students should not have to worry about being monitored" (Hewitt, 2006). Indeed, others are concerned that faculty and students "friending" each other on Facebook may result in privacy issues, inappropriate relationships, and credibility problems (Harris, 2008).

Certainly, student concerns could be mitigated by creating separate pages for official functions verses social uses, which is a custom for faculty that is recommended by Muñoz and Towner as a best practice for using Facebook in the classroom (Muñoz, 2009). Will this, however, negate the positive effects of using Facebook in the first place? Will students login to their school page as much as they login to their social page? What is appropriate electronic communication for official university business? Due to the fact that students spend so much time social networking, particularly via Facebook, there is a school of thought that integrating this with the classroom could be beneficial. Faculty comments such as, "There are so many wonderful things we could do" indicate an interest in incorporating these technologies (Berg, 2007). Still, there is the concern that this type of incorporation could breach personal and professional boundaries.

## Social Networking Use and Educational Outcomes

Students' interactions faculty members beyond classroom settings have been associated with many positive outcomes such as greater student development, satisfaction, academic achievement, intellectual and personal development, and persistence (Astin,1993; Kuh & Hu, 2000; Lamport,1993; Pascarella & Terenzini,1977). Kuh and Hu (2000) point out that the frequency and nature of student-faculty interactions may have the most substantial impact when they have an academic focus – as contrasted with exclusively social exchanges. Student-student interactions have also been associated with many positive outcomes such as higher levels of educational aspirations and achievement (Johnson, 1981). Additionally, Cabrera, Nora, and Castaneda (1993) found that student-to-student interactions can play a significant role in an individual's decision to remain in school. It appears that college students today are migrating to virtual worlds to ensure adequate interactions with others given all the demands on their time (e.g., commuting to campus, studying, working for pay off-campus and on-campus, caring for dependents living with them, participating in co-curricular activities, and making time for relaxing and socializing). Additionally, students are able to interact with many other persons at the same time and build community by simply clicking, typing, and posting without the constraints of physical boundaries.

The virtual worlds may consist of SNSs such as Facebook or even more *traditional* technologies such as university e-mail. According to Alemán and Wartman (2009), today's students experience college in both the real and the virtual communities. Use of online communities is an experience they are readily familiar with. Junco and Cole-Avent (2008) note that today's college students, "rarely differentiate between real-world and online

communication" and will refer to an online connection the same way they will refer to an in-person communication (p.3). The Pew Internet and American Life Project reported that in 2004, 52% of high school graduates had internet access and used the internet and that the percentage was expected to continue to increase (Junco & Cole-Avent 2008).

Research has also shown that students who feel a sense of belonging to the institution and who feel like part of the community are more likely to experience a sense of commitment to the institution (Haussmann, Ye, Schofield, and Woods, 2009). Past research has shown that the level students feel engaged and involved in their college community is directly related to their likelihood in persisting to graduation (Tinto, 1998; Yorke, 2004). Social networking is a tool being explored by many institutions as a means of fostering student engagement at their institutions (Harris, 2008).

## CURRENT STUDY AND RESEARCH QUESTIONS

Our institution serves a population of students that are typically living off campus and struggling to balance their course demands with family and work commitments. For urban, commuter campuses, creating this sense of community can be particularly difficult. A vast majority of our first-year, full-time students work at least 29 hours a week (70%) and 41% are the first of their family to attend college. This translates into a student body that has limited time for college life. They have many interests competing for their attention, sometimes preventing them from developing a sense of academic engagement and social connectedness at college. It is possible that many of our students seek on-line environments as an effective mechanism for communicating with and connecting to other students, faculty, advisors, administrators, and staff. Ideally, SNSs provide a means for students to develop relationships with one another without the constraints of proximity placed upon them. University-sponsored websites are often created to

provide opportunities for students to interact directly with each other via blogs, uploading photos, and creating profiles that include intended major, reasons for choosing this particular institution, and what high school they attended. Many institutions have also created their own custom applications for use in the domains of official business and course-based work.

The problem of how best to utilize this technology may lie in what the user's mental model of the system is. A mental model can be defined as a dynamic representation or simulation of a problem held in working memory (Proctor, 1994). Kuniavsky (2003) describes mental models as users' perceptions of how something operates, allowing them predict what the object will do in unexpected situations and how they can make the object do what they want. If the goal of the institution making use of the SNS does not match or is in conflict with the student's mental model of the SNS, the goal is likely to not be attained. This paper will explore further how students by different demographic types currently use various SNSs. This effort should provide a better understanding of whether or not these technologies can be utilized by institutions of higher education to increase student engagement and learning.

This study investigates whether or not the use of SNS (e.g., Facebook, MySpace, Twitter, Blogs, and the university sponsored non-open source SNS *Jag 4.0*) and more *traditional* technologies (e.g., e-mail, a university course based system called OnCourse, cell phones) has a significant effect on students' feelings of social connectedness, college adjustment, academic engagement, and institutional commitment. *OnCourse* is the University's web-based environment for and discussion forums online course material. We also explored students' level of use of SNSs how they were using to them to interact with faculty, advisors, staff, and administrators.

The following research questions guided this exploratory investigation:

1. What types of SNS are students using (e.g., Facebook, My Space, University Sponsored and Created Social Networking Sites, Twitter, Blogs, etc.)?
2. To what extent are students using SNS to connect with each other for social and academic purposes?
3. To what extent are students using SNS to connect with university faculty, staff, advisors, and administrators for social and academic purposes?
4. To what extent are students using more traditional technologies to connect with each other and university personnel for social and academic purposes?
5. Are there differences in social networking and traditional technology use based on students' demographic characteristics, enrollment status, academic performance levels, and credit hours earned?
6. Does a students' level of use of SNS and other information technologies significantly predict their feelings of social connectedness, college adjustment, academic engagement, and institutional commitment?

## METHODS

### Procedure

A web-based survey was administered to a random sample of 2,400 degree seeking University College first-year students attending a large, four-year, urban, public, Midwestern commuter university. This majority of the students had earned less than 56 credit hours and had not yet been admitted to a degree-granting school (e.g., Nursing, Business, Education, Science, Liberal Arts). The survey was designed to assess their level of use of SNS and their perceptions

of social connectedness, academic engagement, college adjustment, and institutional commitment. The survey was also designed to determine how SNS and other information technologies are used by students to interact with other students attending the same institution, as well as faculty, advisors, staff, and administrators. Students were recruited via e-mail with a link to the survey. Participation was voluntary and students were entered into a drawing with the opportunity to win $100.00 as an incentive for completing the survey.

Participants

A total of 399 students completed the survey yielding a response rate of 17%. The majority of the respondents were female (72%). Respondents consisted of 289 (72%) White / Caucasian students, 49 (12%) African American students, 17 (4%) Asian American students, 16 (4%) Hispanic/Latino students, 12 (3%) International students, and 16 (4%) students were in the "Other or Declined to Answer" category. The ethnicities represented in the sample closely resembled the overall population students attending the institution. The average age of the sample was 23 with a range of 18 - 56. Seventy-six percent of this sample were full-time students who had completed an average of 41.68 credit hours. The average high school grade point average (GPA) of the sample was 3.17 with the average Scholastic Aptitude Test (SAT) score of 974. The average cumulative college GPA was 2.87. There were significant differences between the respondents and non-respondents with regard to gender and cumulative college GPAs. The respondents had significantly higher college GPAs compared to non-respondents (M = 2.87, SD =.73; and M = 2.39, SD = 1.57, respectively). A higher proportion of respondents were female (72%) compared to non-respondents (58%).

Measures

*Students' Use of Social Networking Services and Traditional Communication Technologies*

Questionnaire items were developed to determine how SNS were being used by students to interact with other students, faculty, advisors, staff, and administrators. Items were also developed to assess how students were using *traditional* methods for communicating with and connecting to other students and faculty (e.g., university e-mail, a university created course-based system for facilitating communication between students and faculty called "OnCourse," and cell phones). There were four constructs developed to assess level of use of SNSs and traditional methods for communicating with campus faculty, administrators, advising and staff and with other students: 1.) Using Social Networking Services (SNS) with peer students attending the university (SNS Students), 2.) SNS use with university faculty, administrators, advising, and staff (SNS Faculty), 3.) Using traditional methods such as university e-mail, OnCourse, and cell phones to communicate with peer students attending the university (Traditional Students), and 4.) Using traditional methods such as university e-mail, OnCourse telephones, including cell phones to communicate with faculty, administrators, advising and staff (Traditional Faculty).

SNS Students consisted of an 8-item scale. Students were asked to respond to a Likert-type response scale ranging from 1= Strongly Disagree to 6 = Strongly Agree. These items included to following: "I have created a personal profile and posted information about myself (e.g., photos, contact information, interesting facts) on social networking sites specially to get to know other [Institution] students" and "I have used social networking sites such as Facebook, MySpace and Twitter and Jag 4.0 to get to know other students attending

[Institution].” Students were also asked to respond to the following: “About how many hours do you spend in a typical 7-day week using social networking sites such as Facebook, MySpace, Twitter, or Jag 4.0 to communicate with students at [Institution]” Other items included: “How often have you used the following to connect with or communicate with other students attending [Institution]: Facebook, My Space, JAG 4.0 Social Networking Site, Blogs and Twitter.” Students were asked to respond to these items on a 6-point scale ranging from 1 = Never to 6 = Often. Students were also asked to respond to a similar set of items to assess communication with faculty such as: “How often have you used the following to connect with or communicate with [Institution] faculty, staff, advisors, or administrators: Facebook, MySpace, Twitter, or Jag 4.0.” The measures showed reasonable reliability. Cronbach’s alpha coefficients were as follows: SNS Students ($\alpha = .77$) and SNS Faculty 7-item scale ($\alpha = .78$).

Traditional Students and Traditional Faculty each contained 3 items developed specifically for the purposes of this study. Students were asked to respond on a 6-point scale ranging from 1 = Never to 6 = Often. Items included: “How often have you used the following to connect with or communicate with IUPUI faculty, staff, advisors, or administrators: university e-mail, OnCourse, or cell phone” or “How often have you used the following to connect with or communicate with other students attend [Institution]: university e-mail, OnCourse, or cell phone The measures showed reasonable reliability. Cronbach’s alpha coefficients were Traditional Students ($\alpha = .72$) and Traditional Faculty ($\alpha = .67$).

In an effort to explore <u>how</u> students were using SNS, students were asked to indicate if they used Facebook or My Space for the following reasons and asked to indicate a “yes” or “no” response: student created [Institution] specific Facebook page, IUPUI administration created Facebook page, Own personal Facebook page. Students were also asked to indicate “What do

you feel is the most effective way for [Institution] faculty, staff, administrators, and advisors to communicate with students?" and the following responses were offered: Facebook, MySpace, Blogs, Twitter, University E-Mail, OnCourse, Face-to-Face, or Texting. We also developed an open-ended item to enhance understanding of how students use SNS: "Please explain what social networking sites you use and your primary reasons for using them / it".

*Social Connectedness*

Students were asked to respond to 7 items on a 6 point ordinal Likert-type response scales ranging from 1= strongly disagree to 6 = strongly agree. Sample Social Connectedness items included "I feel that I can share personal concerns with other students," " I am able to develop close friendships with other students," "I am able to make connections with a diverse group of people," "I feel so distant from the other students (reverse scored)," and "I have some close friendships with [Institution] students ($\alpha = .87$). This scale was adapted from the Campus Connectedness Scale developed by Lee (2003) and Lee and Davis (2000).

*College Adjustment*

The degree of college adjustment was assessed by 5 items developed specifically for the purpose of this study. Students were asked to respond to on a 6-point ordinal Likert-Type response scales ranging from 1 = strongly disagree to 6 = strongly agree. Items included the following: "I am confident that I can build networks of social support to help me cope with the demands of college," "I fear that I may not be able to cope with the stress of college" (reverse coded), "I am confident that I can balance work, school, and social time," and "I am certain that I can accomplish all my course work on time" and "I feel that I fit right in at [Institution]" ($\alpha = .73$).

*Academic Integration / Engagement*

The degree of Academic Engagement was assessed using a 23-item scale developed for the purposes of this study. Prior research on the construct to was reviewed and used to guide item development (e.g., Cabrera, Nora, & Castaneda 1993; Kuh, Kinzie, Schuh, Whitt, & Associates, 2005; Pike & Kuh, 2005a, 2005b; Zhao & Kuh, 2005). Students were asked if they actually participated in various campus activities and academic support services such as orientation, academic advising, peer mentoring, learning communities, and first year seminars ("yes" or "no" response categories were provided). Students were also asked to what extent they were familiar with various academic campus initiatives and support services such as the Math Assistance Center, the Writing Center, Undergraduate Research Opportunities, Service Learning, The Common Theme Book, and The General Education Goals of the Institution (called Principles of Undergraduate Learning).

Students were asked to respond to a 6-point ordinal Likert-Type response scales ranging from 1= never heard of this to 6 = very familiar. Items assessing how much time students spent on campus-related activities such as studying, working on-campus, and co-curricular activities: "About how many hours do you spend in a typical 7-day week preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)," About how many hours do you spend in a typical 7-day week working for pay on campus," and "About how many hours do you spend in a typical 7-day week participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports)." Students' academic achievement was also included in this measure. Academic achievement was defined as the students' cumulative grade

point average and was obtained by extracting actual student records from institutional data sources rather than relying on self-report. All items were summed to include a general measure of Academic Engagement, with higher scores indicating higher levels of Engagement ($\alpha$ = .84).

*Institutional Commitment.*

The degree of Institutional Commitment was assessed using a 9-item scale developed for the purposes of this study. Prior research on the construct to was reviewed and used to guide item development (e.g., Cabrera, Nora, & Castaneda 1993; Mowday, Steers & Porter, 1979). Students were asked to respond to on a 6-point ordinal Likert-Type response scales ranging from 1 = strongly disagree to 6 = strongly agree. Sample items included the following: "It is important for me to graduate from [Institution] (e.g., rather than from another college), "I am certain I made the right choice in attending [Institution]," "I intend to transfer to another institution at some point" (reverse coded),"I talk up this college to my friends as a great place to go to school," "I am proud to tell others I am going to school here," "I could just as well be attending a different college as long as the courses were similar," and "For the next academic year, I plan to return to [Institution]" ($\alpha$ = .88).

*Student Characteristics, Demographics, and Academic Preparation Levels*

A number of variables were included as covariates in the regression models (e.g., entered in the first step as control variables). These variables were extracted from students' institutional records and included: gender, ethnicity (replica coded as 1 = African American and 0 = All Others), age, total credit hours earned, high school cumulative grade point average, and Scholastic Aptitude Test (SAT) score. First-generation status was also included as a self-report measure on the survey: "Has either your mother or father completed a four-year college (bachelor's) degree?". Academic achievement was defined as the students' cumulative grade

point average and was obtained by extracting actual student records from institutional data sources rather than relying on self-report.

Data Analysis

A series of hierarchical multiple regression procedures were employed to explore if the use of *SNSs* to communicate with university students or faculty, advisors, administrators, and staff and the use of *traditional* methods to communicate with university students or faculty, advisors, administrators, and staff affected levels of Social Connectedness, Academic Engagement, College Adjustment, and Institutional Commitment; while accounting for academic preparation levels (e.g., high school GPAs, SAT scores), age, gender, ethnicity, first-generation status, credit hours completed, and cumulative GPA. If a control variable (e.g., SAT scores) did not significantly add to the predictive power of the regression equation, it was not included in the first step of the final model. We did not employ Structural Equation Modeling (SEM) procedures due to the exploratory nature of this investigation. We did not specify a theoretical model with intervening or mediating variables as there is a dearth of existing research and theory to guide the development of a theoretical model based on students' use of SNS. Moreover, we heeded the warning about appropriate use of SEM strategies: "even small errors in positioning variables or including paths can create havoc all over a model and result in the solution suggesting erroneous inferences" (Maruyama, 1998, p. 5). Prior to employment of the regression procedures, tests were conducted and Histograms were examined to ensure that no assumptions of the regression model were violated. In addition, examination of the variance inflation factors (VIF) revealed that colinearity was not an issue. The VIF coefficients ranged from 1.12 to 1.82.

ANOVAs with post-hoc tests were conducted to explore if there were differences in SNSs and use of traditional technologies to interact with students, faculty, advisors,

administrators, or staff based on gender, ethnicity, age, enrollment status (full-time or part-time), or first-generation status. Multiple regressions were conducted to determine if there were differences in use of SNS or traditional technologies based on levels of academic performance and credit hours earned. A series of frequency reports, appropriate for nominal response categories, were produced in order to understand the types of and primary uses of various SNS. Additionally, a direct analysis of survey participants' open-ended responses provided insight into understanding students' use of SNSs. As Patton (2002) explains, "Direct quotations [responses] are a basic source of raw data in qualitative inquiry, revealing respondents' depth of emotion, the ways they have organized their world, their thoughts about what is happening, their experiences and their basic perceptions" (p.21).

The open-ended survey responses were uploaded into ATLAS-TI, a software program that assists in qualitative data analysis. The first step of the data analysis coding process utilized a *Selective Coding* process. Strauss & Corbin (1990) explain that this process allows for the development of core categories, "the central phenomenon around which all other categories are integrated" (p.116). After survey participants' open-ended responses had been coded and sorted into domain specific *Core Categories* a process of *Open Coding* began. In this process, data is broken down, conceptualized, and the initial stages of categorization begin (Strauss & Corbin, 1990, p. 61). During this stage of analysis, codes were assigned to participant responses in an effort to understand the primary reasons for use of the specific SNS identified during *Core Category* formation. Through the *Open Coding* process student responses were arranged into specific topical theme categories. The topical theme categories allowed for individual student perceptions of the SNSs that they used to be considered collectively. Theme categories were considered to be "emerged or notable" if 5% or more of students responded in a similar manner.

An understanding of student comments in the aggregate facilitated a greater understanding of the primary reasons why students use SNSs.

## RESULTS

### Descriptive Statistics

Table 1 displays the mean, standard deviation, and the alpha coefficient of reliability for each construct. Table 2 includes the Pearson Product Moment Correlation Coefficients among the constructs. The results of the correlations indicate that students' use of SNS and traditional technologies to communicate with students is strongly related to perceptions of Social Connectedness. Results also indicate a positive relationship between use of SNS to interact with faculty, advisors, administrators and staff and use of traditional technologies to interact with faculty, advisors, administrators and staff.

### Use of Social Networking Services: Quantitative Questionnaire Items

A total of 395 (99%) students reported that they use Facebook, while only 88 (22%) reported that they use their own personal MySpace page. When asked to freely report with no response options to the following question: "Please explain what social networking sites you use…" only 31 students (11%) indicated they use MySpace. The vast majority of the students reported that they use Facebook (82%) and 39% reported that they use University e-mail or On-Course (shown in Table 3). When asked, "What do you feel is the most effective way for [University] faculty, staff, administrators, and advisors to communicate with students?" the vast majority of the students reported "OnCourse" or "University e-mail" (79%), while only 7% reported "Facebook". Only 14% of participants reported "Face-to-Face" interaction and only 10% used University sponsored Facebook sites. Results Show in Tables 4 and 5.

Use of Social Networking Services: Qualitative Responses

We examined the open-ended responses to gain a more comprehensive understanding of students' perceptions and their primary reasons for using SNSs. Many students reported that Facebook was the only or primary SNS they used. The majority (52%) of the respondents indicated that they primarily use Facebook for communicating with friends and family. Students reported that they use Facebook to "stay in touch with family members and friends," "keep in contact with friends and family, and to "communicate with friends, peers, and relatives." One student noted that she uses Facebook, "simply to keep up with my friends and family. They are numerous and phone calls/texts would take up too much of my time if I called or texted each one of them once a week." Thirty-four percent of Facebook users specified that their main reason for using the SNS communicate with d*istant f*riends and family. Examples of students' responses are as follows: "I use Facebook to stay in touch with family members in other states," "I use facebook to communicate with friend here and from high school," "Facebook really though its just to keep in contact with my friends back home in another state," "I use facebook to connect with old high school friends. I never considered it to connect with my fellow IUPUI students," "Facebook- so I can keep up with friends from high school that attend other colleges."

It is noteworthy that many students who use Facebook explicitly indicated that they did not use the site for university or professional communication. One student remarked: "I can easily communicate/interact with my friends and family all the time through facebook. To contract my professors, I'd rather use Oncourse or [University] email. It's weird if I had my teacher on facebook-not against it, but a little uncomfortable with a current teacher of mine being able to see what I'm like outside of class." Other examples of students comments were as follows: "Facebook - most of my friends/family - not for teachers/classmates," "I use Facebook

the most to talk to friends but not for faculty members or students," "I use Facebook, but only to communicate with friends. Never for anything pertaining to school," "Though, I do not use facebook to talk to my friends I am making at IUPUI about school. Facebook is more for my life outside of school." Students also reported that they used Facebook because it is easy to use: "I use facebook because it is easy to navigate," "I primarily use Facebook. It is the easiest way to communicate with people and get in touch." "Facebook, because I'm much more comfortable using facebook than any other site," and "I use facebook the most. It's easy to understand and it's not just for the younger generation, but for older adults as well…"

The majority of student participants expressed that they primarily used the University's course-based system or University E-mail to communicate with faculty, staff, administration, and advisors. In the words of one student: "I use Facebook to communicate with friends and Oncourse and IUPUI email to communicate with classmates and faculty." Other comments included the following: "I use Oncourse the most to communicate with my professors," "I like using Oncourse as a source for connecting with all of my professors," "I use Oncourse and exchange mail to be able to connect with the faculty and staff along with other students in my courses" "I also use oncourse because that's the only way that my teachers and I communicate." Another student noted that she "typically uses e-mail for communicating with professors."

Exploring Differences in Social Networking and Traditional Technology Use

MANOVA results showed that there were no differences with regard to gender or first-generation status and use of SNS or Traditional Technologies with other students, faculty, administrators, advisors, or staff. It is notable that there was also no relationship between level of academic achievement (cumulative college GPA) and SNS use with faculty or students or use of traditional technologies to interact with faculty and students based on multiple regression results.

MANOVA results indicated that International students used SNSs/Traditional Technologies to communication with others significantly more than All Other students, $F(4,357) = 5.04$, $p < .001$. An examination of the univariate analyses indicated that International students used SNS Students ($M = 23.45$, $SD = 9.31$) more than All Other students ($M = 16.82$, $SD = 6.56$), $F(1, 360) = 10.57$, $p = .001$. International students also used SNS Faculty ($M = 13.82$, $SD = 10.45$) more than All Other students ($M = 8.15$, $SD = 3.96$), $F(1, 360) = 18.76$, $p = .001$.

MANOVA results indicated that full-time students used SNSs / Traditional Technologies to communicate with others significantly more than part-time students, $F(4,357) = 10.89$, $p = .001$. An examination of the univariate analyses indicated that full-time students used SNS Students ($M = 18.06$, $SD = 6.59$) more than part-time students ($M = 13.46$, $SD = 6.02$), $F(1, 360) = 32.07$, $p = .001$ as well as Traditional Technologies Students ($M = 12.42$, $SD = 4.62$) more than part-time students ($M = 10.47$, $SD = 3.86$), $F(1, 360) = 14.70$, $p = .001$.

Multiple regression results suggested that Age significantly predicted SNSs/Traditional Technologies use $R^2 = .20$, $F(4, 357) = 42.64$, $p < .01$. The older the students were, the more likely they used SNS Faculty $b = .46$, $t(357) = 5.03$, $p < .001$ and Traditional Technologies Faculty $b = .26$, $t(357) = 2.12$, $p < .05$. However, older students were significantly less likely to use SNS Students compared to younger students $b = -.55$, $t(357) = -8.56$, $p < .001$.

Multiple regression results suggested that Credit Hours earned was strongly associated with SNSs/Traditional Technologies use $R^2 = .04$, $F(4, 357) = 3.85$, $p < .01$. The more Credit Hours earned, the less likely they used SNS Students $b = 1.02$, $t(357) = 3.67$, $p < .001$ and the more they used SNS Faculty $b = .97$, $t(357) = 2.28$, $p < .05$.

Effects of Social Networking and Use of Traditional Technologies

Results of a hierarchical multiple regression indicated that SNS Students and Traditional Students significantly positively affected and SNS Faculty significantly negatively affected Social Connectedness, even when age, enrollment status, credits earned, and cumulative college GPA were entered in the first step of the regression model ($R^2 = .21$, $F(8, 351) = 11.44$, $p < .0001$) above and beyond academic preparation, age, and gender. Table 6 displays the results. Results of another hierarchical multiple regression indicated that Traditional Students significantly positively affected College Adjustment, even when gender, ethnicity, credits earned, and cumulative college GPA were entered in the first step of the regression model ($R^2 = .14$, $F(8, 354) = 6.99$, $p < .0001$). Shown in Table 7 are the results.

Results of a third hierarchical multiple regression indicated that SNS Faculty and Traditional Faculty significantly positively affected Academic Engagement, even when gender, ethnicity, age, enrollment status, and cumulative high school GPA were entered in the first step of the regression model ($R^2 = .29$, $F(9, 215) = 9.32$, $p < .001$). It is important to note that including high school GPA as a predictor in the first step resulted in many missing cases as some students' records were not populated with this variable. There were no options available for imputing the missing high schools GPAs as no variables existed in our students' records system that would make an acceptable predictor of high school GPA. High school GPA accounted for a substantial amount of variance in Academic Engagement. Table 8 contains the results.

Results of another hierarchical multiple regression indicated that Traditional Students significantly positively affected Institutional Commitment, even when ethnicity, first-generation status, credits earned, and cumulative college GPA were entered in the first step of the regression model ($R^2 = .12$, $F(8, 345) = 5.51$, $p < .05$). Shown in Table 9 are the results.

# DISCUSSION

## Students' Use of Social Networking Services

Our results confirm reports that students tend to use SNSs such as Facebook primarily for social interactions and to share very personal details of their lives with friends and family as one student noted: "I use Facebook most of the time to communicate with friends. I would communicate with professors on this site but I think it would be a bit inappropriate." Fletcher (2010) notes "Facebook has changed our social DNA, making us more accustomed to openness…Facebook is rich in intimate opportunities-you can celebrate your nieces first steps there and mourn the death of a close friend" (p. 33). Based on the analyses of the quantitative and qualitative data, it appears that students do seem to compartmentalize their interactions in virtual spaces as either academic or social. Additionally, the qualitative responses suggest that students' mental models for SNSs utilization are as follows: as sites where they can freely express their personal and academic experiences with friends and family, whether distant or local.

Students reported that the most effective ways for university faculty, advisors, administrators and staff to communicate with students is via University e-mail and course-based academic sites. In fact, these sites were preferred over face-to-face interactions. Thus, it does appear that students are actively using on-line environments to establish connections and for communicating with other students as well as university personnel. However, our findings suggest that SNSs are used by students to connect with each other socially, but only minimally used to connect with university faculty, administrators, staff, and advisors for academic or social purposes. Additionally, students were more likely to use sites that were not university sponsored

such as Facebook. They also tended to migrate to other sites such as Facebook after limited use of university-sponsored sites that were not "open-source."

Our findings seem to substantiate other reports on students' use of SNSs. Primarily they are being used to communicate with friends, specifically to maintain existing relationships and solidify offline connections more than for meeting new people (Boyd, 2007). Facebook users tend to search for people who they know offline with 91% using SNS to connect with people they know (Boyd, 2007). Additionally, the net generation has a tendency to reveal a great deal of personal information about themselves on SNSs such as Facebook and MySpace. Consequently, some students seem apprehensive about faculty and administration being their friends. At the University of Wisconsin – Madison, a survey was conducted by Berg, Berquam, and Christoph (2007) and the following are just a sample of student comments that they received concerning SNS use in official university business: "Don't bother with IM or Facebook – that's our way to network. Leave us alone. This is my way to procrastinate," "Email important information. I know when I receive university e-mail that I should read it. If I received deadline information any other way, I'd think it was a hoax". Hewitt's (2006) work included student comments such as: "Facebook is a more social network"; "They (faculty) have no need to network with students for social purposes. Faculty and students should remain separate when it comes to social functions".

Differences in Social Networking and Traditional Technology Use

The only significant finding with regard to ethnicity and SNS use was that International Students used SNS services with other students, as well as with faculty, advisors, staff, and administrators significantly more than All Other students. International students may be using SNSs to build community and feel a sense of connection as they study away from their home

countries and may also be using the SNS to maintain contact with their friends and family. Future investigations should further explore the use of SNS to help International students in their cultural and college transitions. It is notable that there was a significant difference in use with regard to age. The older the students were, the more likely they used SNS and traditional technologies with faculty, staff, and administrators. However, older students were significantly less likely to use SNS with students. Older students may feel that establishing connections with other students for social reasons is not an efficient use of their time; and they may be interacting with faculty, and administrators primarily for academic reasons. The more credits hours the student earned, the less they used SNS with students and the more they used SNSs with faculty. Thus, these more seasoned students may feel comfortable using SNSs with faculty and may be more academically focused than students with fewer credit hours earned.

Effects of Social Networking and Use of Traditional Technologies

Students' use of SNSs does not seem to have significant negative effects on positive academic outcomes. It is notable that there was no relationship between level of academic achievement (cumulative college GPA) and SNS use with faculty and students or use of traditional technologies to interact with faculty and students.

Results suggest that students' use of SNSs and Traditional Technologies (e.g., university e-mail, a university course-based site called OnCourse, or cell phones) with other students has a strong positive effect on their feelings of Social Connectedness. It is possible that sharing personal as well as academic experiences with other university students makes students feel higher levels of camaraderie and community. However, students' use of SNSs with faculty, advisors, administrators, and staff was negatively related to feelings of Social Connectedness, even when taking student age, enrollment status, credits earned, and college GPA into account.

This finding may mean that when students use SNSs for academic purposes, they may be doing so at the expense of being able to use the sites to share personal experiences and develop emotional attachments to other students.

We found that students' use of SNSs or Traditional Technologies with faculty, advisors, administrators, or staff was significantly positively related to levels of Academic Engagement, even while taking into account students' high school GPA, enrollment status, age, gender, and ethnicity. Thus, it appears that the high levels of interactions with faculty members or university personnel contribute positively to students' Academic Engagement regardless of virtual world format: Facebook or University E-mail.

Results suggest that students' use of Traditional Technologies with students contributed positively to their feelings of College Adjustment and Institutional Commitment, even when student enrollment, age, gender, first-generation status, credit hours earned, academic preparation, and college GPA were taken into account. It is possible that students' use of SNSs did not significantly affect adjustment or commitment to the institution because they are primarily using the sites to connect with friends and family not attending the institution. Interestingly, interactions with faculty, advisors, administrators, or staff did not substantially contribute to students' feelings of adjustment or commitment. A plausible explanation is that students tend to use University technologies such as e-mail and OnCourse with faculty, advisors or administrators when they are experiencing trouble adjusting to college and balancing academic work with demands outside of college. In addition establishing positive academic connections may have served to attenuate the effects of interactions with faculty on college adjustment and commitment. It is also possible that using the university course-based site and university e-mail with other students contained the types of academic connections, sharing of

experiences, and support that students required to feel adjusted to college and committed to the university (e.g., feel sense of pride in, intend to graduate from, and intend to remain with).

## LIMITATIONS

When interpreting the results of this study, one must be aware of several limitations. One of the most serious limitations of this study is that we are not certain if the use of SNS or other communication technologies *caused* the increases or decreases in students' feelings of social connectedness, adjustment, academic engagement, or institutional commitment levels. Thus, true causality cannot be determined. It is possible that other factors and intervening variables not accounted for in this study such perceived need and desire for social connections or availability of other forms social and academic interactions may have affected the outcomes in unknown ways. Additionally, this investigation was exploratory in nature as we did not feel that there was enough prior theory and empirical research to guide the development of a comprehensive theoretical model of the effects of the use of SNSs and other communication technologies. We employed multiple regression procedures instead of SEM due to the fact that SEM is usually viewed as a confirmatory rather than exploratory procedure.

Another limitation of this study stems from the fact that we assessed students' use of SNS or other communication technologies, Social Connectedness, College Adjustment, and Institutional Commitment using self-report data at one point in time. As such, common method variance may have contributed to the results. Our measure of Academic Engagement contained actual students' GPAs rather than relying on self-report and consequently this measure was less susceptible to problems associated with the use of common methods.

The results of this study may only generalize to urban students attending large, public commuter institutions. Additionally, we sent a web-based survey via e-mail and it is possible that

our survey sample was prone to use SNSs and Traditional Technologies to communicate with others. More research regarding students' use of SNSs over time using data from multiple institutions is needed before any definitive conclusions can be drawn. However, it is plausible that some higher education administrators and faculty members will find the current findings insightful, particularly if they are attempting to understand how to interact with students in virtual worlds.

## CONCLUSION

Many highly academically engaged students may use SNS such as Facebook to communicate with and connect with faculty members, administrators, advisors, and staff. However, our results suggest that students do not necessarily want university faculty and staff to initiate the connection. The best course of action may be to stay out of students' social space, but remain open to the possibility that some students may wish to interact with university personnel in virtual spaces for academic purposes. The very personal and social nature of social networking sites such as Facebook may serve to make these spaces inappropriate venues for university faculty members, administrators, advisors, and staff to enter without invitation. The cultural norms that govern faculty-students interactions in educational settings may not apply to social networking sites and university leaders should take this into account when attempting utilize these sites for official university business. It is our hope that this research will aide higher education professionals in gaining a further understanding of students' perceptions regarding social networking as it relates to the collegiate experience Ideally, this exploratory investigation serves to provide some testable hypotheses and conceptual models to further understanding regarding how the use of social networking services and other technologies enhances or inhibits positive educational outcomes.

REFERENCES

Alemán, A. and Wartman, K. (2009*) Online Social Networking on Campus: Understanding What Matters in Student Culture* New York/London: Routledge.

Arrington, M. (2005, September 7). 85% of College Students use Facebook. TechCrunch. Retrieved April 29, 2010, from http://techcrunch.com/2005/09/07/85-of-college-students-use-Facebook/

Astin, A. W. (1993). *What matters in college: Four critical years revisited*. San Francisco: Jossey-Bass.

Berg, J., Berquam, L., & Christoph, K. (2007, March/April). Social Networking Technologies: a "Poke" for Campus Services. *EDUCAUSE review*. 42(2), 32-44.

Boyd, D. M., & Ellison, N. B. (2007). Social Network Sites: Definition, History, and Scholarship. *Journal of Computer-Mediated Communication*, 13(1), Article 11.

Braxton, J. M., Brier, E.M, & Steel, S. L. (2007-2008) Shaping retention from research to practice. *Journal of College Student Retention: Research, Theory and Practice, 9(3),* 377-399.

Cabrera, A. F., Nora, A., & Castaneda M. B. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. *Journal of Higher Education*, 64, 123-139.

Fletcher, D. (2010, May 31). Friends without borders. *Time, 175(21),* 32-38.

Hargittai, E. (2007). Whose Space? Differences among users and non-users of social network sites. *Journal of Computer-Mediated Communication*, 13(1), Article 14.

Harris, K (2008). Using social networking sites as student engagement tools. *Diverse: Issues In Higher Education.* Retrieved June 6, 2009 from http://www.diverseeducation.com/artman/publish/article_11837.shtml

Hausmann, L.R. M, Ye, F. Schofield, J. W., & Woods, R. L. (2009). Sense of belongingness and persistence in white and African American first-year students. *Research in Higher Education, 50,* 649-669.

Heiberger, G., & Harper, R. (2008, Winter). Have You Facebooked Astin lately? Using technology to increase student involvement. *New Directions for Student Services,* 124, 19–35.

Hesel, R., & Williams, R.C. (2009, January 23). Social networking sites: Social networking sites and college-bound students. *StudentPoll,* 7, 2. Retrieved May 21, 2009 from http://www.artsci.com/studentpoll/v7n2/index.aspx

Hewitt, A., & Forte, A. (2006, November). Crossing boundaries: Identity management and student/faculty relationships on the Facebook. Poster session presented at CSCW, Banff, Alberta, Canada.

Johnson, D. W. (1981). Student-student interaction: the neglected variable in education, *Educational Researcher, 10(1),* 4-10.

Junco, R (2009). *New Research Shows Facebook's Positive Impacts on Student Development May Far Outweigh Negative Results.* PR Web. Retrieved May 20, 2009 from http://www.prweb.com/releases/2009/05/prweb2441564.htm

Junco, R., & Mastrodicasa, J. (2007). Connecting to the net generation: What higher education professionals need to know about today's students. Washington, D.C.: National Association of Student Personnel Administrators, 2007.

Junco, R., & Cole-Avert, G.A. (2008). An introduction to technologies commonly used by college students. *New Directions for Student Services.* 124, 3–17.

Kuh, G. D., & Hu, S. (2001). The effects of student-faculty interaction in the 1990s. *The Review of Higher Education* Spring, 24 (3), 309–332.

Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J. (2005). *Student success in college: Creating conditions that matter.* San Francisco: Jossey-Bass.

Kuniavsky, M. (2003). *Observing the user experience: a practitioner's guide to user research.* San Francisco: Morgan Kaufmann Publishers.

Lamport, M. A. (1993). Student-faculty informal interaction and the effect on college student outcomes: a review of the literature. *Adolescence, 28,* 971-990.

Lee, R.M. (2003). Do ethnic identity and other-group orientation protect against discrimination for Asian Americans? *Journal of Counseling Psychology*, 50, 133-141.

Lee, R.M., & Davis, C. III. (2000). Cultural orientation, past multicultural experience, and a sense of belonging on campus for Asian American college students. J*ournal of College Student Development*, 41, 110-114.

Maruyama, G. M. (1998). *Basics of structural equation modeling*. Thousand Oaks, CA: Sage.

Mazer, J.P., Murphy, R.E., and Simonds, C.J. (2007). I'll see you on "facebook": the effects of computer-mediated teacher self-disclosure on student motivation, affective learning, and classroom climate. *Communication Education*, 56(1), 1-17.

Mowday, R.T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior, 14*, 224-247.

Muñoz, C.L., & Towner, T.L. (2009). Opening Facebook: How to Use Facebook in the College Classroom. Paper presented at the Society for Information Technology and Teacher Education, Charleston, SC.

MySpace. "About Us". Retrieved May 10, 2010, from http://www.myspace.com/index.cfm?fuseaction=misc.aboutus.

Oblinger, D.G, & Oblinger, J.L. (2005). Educating the Net Generation. EDUCAUSE. Retrieved May 10, 2010, from http://www.educause.edu/educatingthenetgen/.

Pascarella, E. T., & Terenzini, P.T. (1977). Patterns of student-faculty informal interaction beyond the classroom and voluntary freshman attrition, *The Journal of Higher Education*, 48(5), 540-552

Patton, M.Q. (2002). Qualitative research and evaluation methods (3rd ed.). London: Sage Publications.

Pike, G. and Kuh, G. (2005). A typology of student engagement for American colleges and universities. *Research in Higher Education, 46(2),* 185-209.

Pike, G. and Kuh, G. (2005). First- and second-generation college Students: A comparison of their engagement and intellectual development. *The Journal of Higher Education, 76 (3),* 276-300.

Proctor, R.W., & Van Zandt, T. Human Factors in Simple and Complex Systems. Boston: Allyn and Bacon.

Simth, J. (2009, July 6). College students' facebook use easing up over the summer, While parents logging on in record numbers. Inside Facebook. Retrieved April 29, 2010, from http://www.insideFacebook.com/2009/07/06/college-students-Facebook-use-easing-up-over-the-summer-while-parents-logging-on-in-record-numbers/.

Strauss, A. & Corbin, J. (1990). Basics of qualitative research: Grounded theory procedures and techniques. Newbury Park, California: Sage Publications.

Technology Information for Students. Retrieved May 12, 2010, from http://indylaw.indiana.edu/students/technologty.htm.

Tinto, V. (1998). Colleges as communities: Taking research on student persistence seriously. The Review of Higher Education, 21(2), 167-177.

Young, J. (2008, August 18). When Professors Create Social Networks for Classes, Some Students See a 'Creepy Treehouse'. *The Chronicle of Higher Education*. Retrieved May 12, 2010 from http://chronicle.com/blogPost/When-Professors-Create-Social/4176

Yorke, M. (2004). Retention, persistence and success in on-campus higher education, and their enhancement in open and distance learning. *Open Learning*, 14, 19-32.

Zhao, C., & Kuh, G. D. (2004). Adding value: Learning communities and student engagement. *Research in Higher Education*, 45(2), 115-138.

*Table 1*

Student Demographics, Characteristics, Academic Preparation, Use of Social Networking Services, and Study Variables (n = 399): Descriptive Statistics

| Variables | N | M | SD | α |
|---|---|---|---|---|
| Age | 399 | 23.94 | 7.22 | |
| SAT Score | 284 | 972.71 | 151.00 | |
| High School GPA | 257 | 3.17 | .49 | |
| Cumulative Credit Hours | 399 | 41.83 | 27.58 | |
| Cumulative College GPA | 399 | 2.87 | .73 | |
| SNS_Students | 384 | 16.94 | 6.73 | .77 |
| SNS_Faculty | 379 | 8.33 | 4.31 | .78 |
| Traditional Students | 388 | 11.96 | 4.16 | .72 |
| Traditional Faculty | 393 | 10.83 | 3.48 | .67 |
| Social Connectedness | 383 | 4.14 | 1.07 | .87 |
| College Adjustment | 392 | 4.47 | .93 | .73 |
| Academic Engagement | 369 | 43.46 | 14.23 | .84 |
| Organizational Commitment | 382 | 4.67 | 1.01 | .88 |

*Table 2*

Zero-Order Correlations

| *Construct* | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* |
|---|---|---|---|---|---|---|---|---|
| 1. SNS Students | | | | | | | | |
| 2. SNS Faculty | .48** | | | | | | | |
| 3. Traditional Students | .47** | .23* | | | | | | |
| 4. Traditional Faculty | .32** | .28* | .60** | | | | | |
| 5. Social Connectedness | .31** | .05 | .35** | .19* | | | | |
| 6. College Adjustment | .06 | .04 | .22* | .11 | .50** | | | |
| 7. Academic Engagement | .33** | .31** | .33** | .27* | .29* | .18* | | |
| 8. Organizational Commitment | -.03 | -.05 | .11* | .03 | .35** | .51** | .09 | |

*Correlation is significant at the .05 level (2-tailed); **Correlation is significant at the .01 level (2-tailed)

*Table 3*

Most Commonly Used Social Networking Services and Traditional Communication Methods (n = 277)

| Information Technology | N | % |
|---|---|---|
| Facebook | 228 | 82% |
| OnCourse | 59 | 21% |
| Indiana University (IU) E-mail | 49 | 18% |
| MySpace | 31 | 11% |
| "Does Not Use Social Networking Web sites" | 13 | 5% |
| Twitter | 12 | 5% |

*Note:* Percentages rounded to the nearest whole.

*Note:* The remaining responses were so varied that no major themes emerged.

*Note*: (N) indicates the number of student responses included in analysis; percentages (%) are based on the number of question respondents.

*Table 4*

What Students Feel is the Most Effective Way For University Faculty, Staff, Administrators, And Advisors To Communicate With Students (N=398)

| Communication Method | N | % |
|---|---|---|
| Facebook | 27 | 7% |
| Twitter | 1 | 0% |
| Oncourse | 192 | 48% |
| University E-mail | 123 | 31% |
| Face- to-Face | 54 | 14% |
| Texting | 1 | 0% |

*Note:* Percentages rounded to the nearest whole.

*Table 5*

Low Percentage of Students Use University Facebook Sites (N=399)

| Facebook Site | N | % Use |
|---|---|---|
| Student Created University Facebook Page | 30 | 8% |
| University Facebook Page | 8 | 2% |
| Personal Facebook | 280 | 70% |

*Note:* Percentages rounded to the nearest whole.

*Table 6*

Hierarchical Multiple Regression: Social Networking and Social Connectedness

| | Variable | *b* | *SE b* | *β* |
|---|---|---|---|---|
| Step 1 | Age | -.02 | .01 | -.15* |
| | Full-Time Status | .06 | .15 | .02 |
| | Credits Earned | .00 | .00 | -.05 |
| | Cumulative GPA | .23 | .08 | .16** |
| Step 2 | Age | -.01 | .01 | -0.04* |
| | Full-Time Status | -.13 | .14 | -0.05* |
| | Credits Earned | .00 | .00 | -0.04* |
| | Cumulative GPA | .22 | .07 | 0.15*** |
| | SNS Students | .05 | .01 | 0.30*** |
| | SNS Faculty | -.04 | .01 | -0.16** |
| | Traditional Students | .07 | .02 | 0.25*** |
| | Traditional Faculty | .00 | .02 | 0.00 |

$R^2$ = .21 for Step 1: $\Delta R^2$ =.15 for Step 2 (p <.001). * p<.05, ** p<.01, *** p<.001

*Note:* SNS indicates Social Networking Services such as Facebook, MySpace, Jag. 4.0 University Site, Twitter, or Blogs.

*Note:* Traditional indicates Traditional Technologies such as University E-mail, A course-based on-line systems called OnCourse, or cell phones.

*Table 7*

Hierarchical Multiple Regression: Social Networking and College Adjustment

| | Variable | *b* | *SE b* | *β* |
|---|---|---|---|---|
| Step 1 | Gender (Female) | -.18 | .10 | -.09 |
| | Ethnicity (Afr. American) | .46 | .15 | .15** |
| | Credits Earned | .00 | .00 | -.01 |
| | Cumulative GPA | .33 | .06 | .27*** |
| Step 2 | Gender (Female) | -.22 | .10 | -.11** |
| | Ethnicity (Afr. American) | .45 | .15 | .15** |
| | Credits Earned | .00 | .00 | .00 |
| | Cumulative GPA | .32 | .06 | .26*** |
| | SNS Students | .00 | .01 | .02 |
| | SNS Faculty | .00 | .01 | .00 |
| | Traditional Students | .05 | .01 | .21** |
| | Traditional Faculty | 0.00 | .02 | .00 |

$R^2$ = .14 for Step 1: $\Delta R^2$ =.05 for Step 2 (p <.001). * p<.05, ** p<.01, *** p<.001

*Note:* SNS indicates Social Networking Services such as Facebook, MySpace, Jag. 4.0 University Site, Twitter, or Blogs.

*Note:* Traditional indicates Traditional Technologies such as University E-mail, A course-based on-line systems called OnCourse, or cell phones.

*Table 8*

Hierarchical Multiple Regression: Social Networking and Academic Engagement

| | Variable | *b* | *SE b* | *β* |
|---|---|---|---|---|
| Step 1 | Gender (Female) | -2.45 | 2.29 | -.07 |
| | Ethnicity (Afr. American) | 8.04 | 3.48 | .15** |
| | Age | -.04 | 0.23 | -.01 |
| | Full-Time Enrollment | 7.31 | 3.24 | 0.17** |
| | High School GPA | 6.64 | 2.08 | 0.22** |
| Step 2 | Gender (Female) | -2.71 | 2.10 | -.08 |
| | Ethnicity (Afr. American) | 7.23 | 3.17 | .14* |
| | Age | .01 | .21 | .00 |
| | Full-Time Enrollment | 5.83 | 2.94 | .14* |
| | High School GPA | 8.13 | 1.90 | .27*** |
| | SNS Students | .21 | .18 | .09 |
| | SNS Faculty | .95 | .26 | .27*** |
| | Traditional Students | .19 | .29 | .05 |
| | Traditional Faculty | .63 | .32 | .15* |

$R^2$ = .29 for Step 18: $\Delta R^2$ =.05 for Step 2 (p <.001). * p<.05, ** p<.01, *** p<.001

*Note:* SNS indicates Social Networking Services such as Facebook, MySpace, Jag. 4.0 University Site, Twitter, or Blogs.

*Note:* Traditional indicates Traditional Technologies such as University E-mail, A course-based on-line systems called OnCourse, or cell phones.

Table 9

Hierarchical Multiple Regression: Social Networking and Institutional Commitment

| | Variable | *b* | *SE b* | *β* |
|---|---|---|---|---|
| Step 1 | Ethnicity (Afr. American) | 0.52 | 0.17 | 0.16** |
| | First-Generation Student | 0.45 | 0.10 | 0.23*** |
| | Credits Earned | 0.00 | 0.00 | -0.03 |
| | Cumulative GPA | 0.18 | 0.07 | 0.13* |
| Step 2 | Ethnicity (Afr. American) | 0.54 | 0.17 | 0.16** |
| | First-Generation Student | 0.46 | 0.10 | 0.23*** |
| | Credits Earned | 0.00 | 0.00 | -0.03 |
| | Cumulative GPA | 0.16 | 0.07 | 0.12* |
| | SNS Students | -0.01 | 0.01 | -0.08 |
| | SNS Faculty | -0.01 | 0.01 | -0.03 |
| | Traditional Students | 0.05 | 0.02 | 0.19** |
| | Traditional Faculty | 0.00 | 0.02 | 0.00 |

$R^2$ = .12 for Step 1: $\Delta R^2$ =.03 for Step 2 (p <.05). * p<.05, ** p<.01, *** p<.001

*Note:* SNS indicates Social Networking Services such as Facebook, MySpace, Jag. 4.0 University Site, Twitter, or Blogs.

*Note:* Traditional indicates Traditional Technologies such as University E-mail, A course-based on-line systems called OnCourse, or cell phones.