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The influence of time spent by students engaged in co-curricular involvement, online social networking and studying and doing coursework on their academic achievement

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The Influence of Time Spent by Students Engaged in Co-curricular Involvement,
Online Social Networking, and Studying and Doing Coursework
on their Academic Achievement

by

Regina Young Hyatt

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Adult, Career and Higher Education
College of Education
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Dedication

I dedicate this dissertation to my husband, Chad Hyatt, who has offered unwavering support and encouragement during the past four years of my doctoral journey. He has cheered me on when I was discouraged, he has laughed at me when I was making a mountain out of some tiny molehill, wiped my tears away when the great research catastrophes struck and he has most importantly been 100% confident in my ability to get this done. Thanks Chad for your support and counsel!

I also want to offer thanks to my parents, Faye and John Orton, who instilled in me the love of learning from an early age. My parents have been constant cheerleaders through every academic and personal endeavor in my life. Thanks mom and dad for always believing in me and for encouraging me to strive for my dreams.
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Abstract

The purpose of this study was to understand the relationship between time spent by students engaged in student co-curricular involvement, online social networking, and studying on their academic achievement. Additional factors such as student residence, gender, ethnicity, class standing and work for pay were also considered. Existing literature supports the concept that the more time students spend in educationally purposeful activities, the more likely students are going to be successful. Little research exists regarding the use of current versions of online social networking, and the relationship it might have to student academic achievement as measured by grade point average. Therefore, this study was intended to further our understanding of these factors.

Data for this quantitative study came from an online administration of a survey. The survey was disseminated to students who were enrolled at a large, public research institution in the southeastern United States and who were additionally registered in the institution’s database of student organization officers during the fall 2010 semester. The number of respondents was 613, which was a 28% response rate. A multiple regression analysis was used along with other statistical analysis. Descriptive statistics were analyzed for all variables. All data was self-reported by students.

This study yielded several statistically significant findings however the effect sizes for most of the regression models was low. The findings showed statistically significant, negative correlations between the number of hours spent by students engaged in co-curricular involvement and online social networking as it relates to grade point
average. Additionally, studying and doing coursework was positively correlated with grade point average. Lastly, work for pay off-campus was negatively correlated with grade point average.

Additional data analysis was conducted excluding graduate students who had originally completed the survey. This data analysis included 474 respondents. The regression models which excluded graduate students did not yield large effect sizes. Co-curricular student involvement and online social networking did have statistically significant, negative correlations with grade point average but less so than in the original analysis. These findings were despite the reported increase in the number of hours spent per week engaged in co-curricular involvement and online social networking. Work for pay off campus was more significantly negative.

The findings of this study both supported and conflicted with existing literature on these topics. The finding of statistical significance for most variables can most likely be attributed to the large sample size in the study. These findings offer additional opportunities for research by other student affairs practitioners who are interested in student success factors like those included in this study.
Chapter 1

Introduction

Student involvement in co-curricular programs and activities is widely known to positively influence student success and retention (Astin, 1977, 1984, 1993, 1999; Pascarella & Terenzini, 1991; Kuh, Schuh, Whitt, et al., 1991; Kuh, 2009). Students who are actively engaged in co-curricular programs and activities such as student organizations, intercollegiate athletics, intramurals, fraternities and sororities, and student government have higher grade point averages and are more likely to graduate from college (Astin, 1993). Additionally, involved students have greater gains in developmental outcomes including increased self-esteem, more diverse artistic interests and increased personal competencies (Astin, 1977). Conversely, a variety of other factors that negatively impact student success and retention have been identified including working off campus and commuting to campus (Astin, 1993; Tinto, 1975, 1982).

A student’s co-curricular experiences are reflective of a variety of peer groups with which a student interacts. According to Astin (1993) peer groups have a significant impact on a student’s personal growth and development. “Students’ values, beliefs, and aspirations tend to change in the direction of the dominant values, beliefs, and aspirations of the peer group” (Astin, 1993, p. 398). Peer groups can have a more significant
influence on student success and retention than many other institutional factors including the faculty and curriculum (Astin, 1993).

Online social networking has caused us to reframe the way we think about peer groups. Are the “friends” we have through online social networking sites an informal peer group? Madge, Meek, Wellens, and Hooley (2009) note, “our research suggests that online and offline worlds are clearly coexisting, but used in different ways for developing and sustaining different types of relationships” (p. 145). Online social networking is being used to help students maintain relationships with friends and family at home and to build new relationships with people at their institutions. Some of these new relationships are also in-person relationships, but some are only connections found online.

Online social networking is a phenomenon that we have only recently begun to recognize as a potential factor in a student’s learning experience. Karpinksi and Duberstein’s 2009 research was featured in a Time magazine article that states students using the online, social networking site Facebook graduated with grade point averages a full point lower than those who did not use the site (Hamilton, 2009). While the researchers featured in the article agreed that Facebook use was not the cause of the lower grade point averages, they found some relationship between the two factors. Interestingly, the research also indicated that students who were involved in co-curricular activities were more likely to be Facebook users (Karpinski & Duberstein, 2009). Additionally, we know that social networking sites are extraordinarily popular with college-age students. A 2009 study by Pace University and the Participatory Marketing Network found that nearly 99% of people age 18-24 had social networking profiles
(McCarthy, 2009). This study provides a cultural context regarding the wide-spread use of online social networking among college-age students.

Theoretical Framework

The theoretical framework for this study rests with Astin’s theory of student involvement. This theory has five basic tenets:

1. Involvement refers to the investment of physical and psychological energy in various objects.

2. Regardless of its object, involvement occurs along a continuum; that is, different students manifest different degrees of involvement in a given object, and the same student manifests different degrees of involvement in different objects at different times.

3. Involvement has both quantitative and qualitative features. The extent of a student’s involvement in academic work, for instance, can be measured quantitatively (how many hours the student spends studying) and qualitatively (whether the student reviews and comprehends reading assignments or simply stares at the textbook and daydreams).

4. The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program.

5. The effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement. (Astin, 1999, p. 519)
The primary difference between previous student developmental theories and Astin’s involvement theory is that Astin’s research focuses more on the role that the student has in being engaged in the learning process. The involvement theory was applied first to the curricular experiences of students and later reported to additionally apply to the co-curricular experiences of students.

**Purpose**

Astin (1984 & 1999) identified time as a student’s most valuable resource. Astin’s (1999) student involvement theory states, “the extent to which students can achieve particular developmental goals is a direct function of the time and effort they devote to activities designed to produce these gains” (p. 522). Research suggests that the time students spend engaged in co-curricular programs and activities and the level at which they are involved generates positive developmental outcomes including increased academic success (Astin, 1977 & 1984). Additionally, because of the influence a student’s peer group has on his or her developmental outcomes, it is imperative that we learn more about how the frequency of students’ engagement with online social networking impacts student success if we believe that online social networks are a form of a peer group. We also know that time spent engaged in activities such as work off-campus and commuting to school have a negative impact on student success and retention. Therefore, the purpose of this research was to understand the influence of the amount of time students spend engaged in student co-curricular involvement, online social networking, and studying on their academic achievement. Additional factors that might impact academic achievement such as student residence, gender, ethnicity, class standing and work for pay were also considered.
Research Questions

1. What is the relationship between academic performance as measured by self-reported grade point average and self-reported time spent on both co-curricular student involvement and online social networking?

2. How do these relationships vary based upon time spent by students studying and doing coursework and work for pay on and off campus?

3. How do these relationships vary based upon student residence, gender, ethnicity, and class standing?

Definition of Terms

The following definition of terms offers the reader a context for understanding the terminology used in the current research.

Co-curricular student involvement. Co-curricular student involvement refers to a student’s participation in university or college sponsored programs and activities that occur outside of the classroom experience. For the purpose of this study co-curricular student involvement will include time spent attending campus events and participating in student organization activities.

Grade Point Average. Grade point average is self-reported and defined as the statistical average of a student’s grades overall.

Online social networking. Online social networking refers to the freely obtained online technologies used for the purposes of information sharing, communication, and collaboration. Media such as photos and video can also be exchanged using these networks. For the purposes of this study, online social networking technologies include Facebook, Twitter, etc.
Peer group. Peer group refers to the groupings of students with which an individual student has an affiliation or identification (Astin, 1993).

Student. All persons referred to in this research as student are college or university students.

Student involvement. “Student involvement refers to the amount of physical and psychological energy that the student devotes to the academic experience” (Astin, 1999, p. 518).

Student success. Student success is widely used as a descriptive phrase. It can be broadly defined as the combination of student persistence to graduation, involvement in the curricular and co-curricular and the personal growth and development of students.

Student residence. Student residence is defined as either living in on-campus housing or living off-campus.

Significance of the Study

Astin’s (1984) student involvement theory suggests that the time and effort students spend on educational endeavors has a direct impact on their success and persistence. Additionally, his theory hypothesized that students engaged in co-curricular programs and activities would be more academically successful. So while a large body of evidence exists that supports Astin’s theory that co-curricular involvement increases student achievement, the existing literature does not specifically address the relationship between time spent by students engaged in co-curricular activities and grade point average.

Online social networking has emerged as one of the primary activities that 18-24 year old people engage in each day. Madge, Meek, Wellens, and Hooley (2009)
additional three main purposes students had for using their Facebook accounts, (a) keeping in touch with old friends, (b) planning social events, and (c) making social links with others at the university (pp. 145-147). Astin’s (1993) research shows that peer support and interaction is critically important to student success so keeping in touch with friends, making new friends, and interacting through social events would appear to positively relate to student success. Additionally, as we seek to understand how online social networking may or may not support peer group development, we also seek to understand how online social networking might support co-curricular student involvement.

Astin’s student involvement theory has widely been accepted, so this research seeks to further Astin’s earlier research by more closely examining the impact of the level at which students engage in co-curricular activities. Additionally, since Astin’s research was completed before the creation of current versions of online social networking, this research endeavors to understand the influence that online social networking may have on student academic achievement. Lastly, by evaluating the relationships between student academic achievement, online social networking and co-curricular student involvement in the context of other demographic characteristics such as student residence, ethnicity, gender, class standing, and work for pay this study furthers the research related to these factors.

**Delimitations**

This research was conducted at a large, public institution and therefore the results may not be generalizable to students enrolled at other types of institutions. Institution size has been determined to have an impact on student success and persistence (Astin,
1993; Kuh et al., 1991). Students attending large institutions are less likely to persist to graduate, but conversely students are more satisfied with student life at larger institutions. Larger institutions offer students are greater variety of student life opportunities, including increased exposure to diversity, more cultural opportunities and a significantly higher number of extracurricular activities (Astin, 1993).

The population sampled for this study included students who were enrolled as leaders in the institution’s student organization database in the Fall 2010 semester. This population was purposefully to participate in the study because of the researcher’s interest in co-curricular involvement. Membership in those student organizations was not readily available to be surveyed and was therefore impractical to use in the study.

Limitations

This study has as a limitation that is found in all survey research which is that the data are self-reported by the survey participants. Participants may have answered the survey based upon what they believed to be the most socially acceptable answer or the answer that they believed the surveyor wanted to the participant to report. While grade point average was also self-reported in this study, several researchers have found that self-reported grade point average is not significantly different than the student’s actual grade point average. In particular Kuncel, Crede, and Thomas (2005) conducted a meta-analysis of studies with almost 60,000 participants. Their analysis concluded that there was a high level of accuracy in self-reported grades, with college grade point average being reported more accurately than high school grade point. They found no significant differences between males and females, but did find differences in reporting among participants who had lower actual grade point averages. Similarly, in a small study by
Cassady (2001) with 89 undergraduate students, the researcher found little discrepancies between the self-reported grade point averages of participants and their actual graduate point averages.

**Conclusion**

Little research has been conducted to indicate how specific amounts of time spent on specific activities such as co-curricular involvement or online social networking can be associated with student academic achievement. Additionally, some evidence exists to suggest that residential status and work for pay either on or off campus may have an impact on student academic achievement. The following chapter will examine the existing research related to co-curricular student involvement, online social networking, and the influences of work for pay and residential status. The study’s methodology will next be described and the study’s findings will be reported Chapter Four. Finally, thorough consideration of the data, the findings of the study along with implications for future research will be discussed in Chapter Five.
Chapter 2

Review of the Literature

The relevant literature related to this research will first be defined in the broader context of student involvement in learning and student success. The remaining literature can be divided into several sections including literature related co-curricular student involvement and literature related to online social networking, as they each relate to student development and academic achievement. Additionally, literature related to the impact of student residence and work for pay on academic achievement and co-curricular student involvement will be outlined. The final component of the literature review will discuss the role of time spent and quality of effort students spend engaged in educational endeavors such as co-curricular student involvement and working for pay.

Student Involvement in Learning and Student Success

In the early 1980’s, Manuel Justiz, then Director of the National Institute of Education, formed a study group to look at the current conditions and future of higher education in the United States. The result of that study was a report issued with permission of the Secretary of Education and the National Institute of Education entitled, *Involvement in Learning: Realizing the Potential of American Higher Education* (1984). Authors of the report included Alexander Astin, Zelda Gamson, J. Herman Black, Harold L. Hodginson, Howard R. Bowen, Barbara Lee, and Kenneth Mortimer. The authors noted trends in higher education at that time including the fact that nearly one half of all
students who begin college never complete the bachelor’s degree having had that as their intention from the beginning of their higher education experience. The study group additionally concluded that in order for institutions of higher education to be more successful at educating students, three conditions need to be met:

1. That institutions of higher education produce demonstrable improvements in student knowledge, capacities, skills and attitudes between entrance and graduation.

2. That these demonstrable improvements occur within established, clearly expressed, and publicly announced and maintained standards of performance for awarding degrees based on societal and institutional definitions of college-level academic learning; and

3. That these improvements are achieved efficiently, that is, that they are cost-effective in the use of student and institutional resources of time, effort, and money. (Astin, Gamson, Blake, Hodginson, Bowen, Lee, & Mortimer, 1984, pp. 16-17).

Additionally, the authors indicate that condition number one has as its primary purpose student involvement in learning. “There is now a good deal of research evidence to suggest that the more time and effort students invest in the learning process and the more intensely they engage in their own education, the greater will be their growth and achievement” (Astin et al, 1984, p. 17).

George Kuh and additional researchers (2005) identified twenty colleges and universities across the United States that had employed practices to increase student retention and learning. Referring again to the generally low completion of degrees rate
among American college students, Kuh et al. state, “what students do during college counts more for what they learn and whether they will persist in college than who they are or event where they go to college” (p. 8). Two engagement strategies were identified that attribute to student success in college including degree completion. The first engagement strategy refers to the idea that the time and energy students spend on their educational endeavors is extraordinarily important to student success. The second strategy is an institutional responsibility for providing learning opportunities and resources so students can engage in purposeful activities and receive appropriate services.

While these authors agree that the best way to predict whether a student will persist to graduation is based upon the student’s academic preparation and motivation for learning, consequently if colleges and universities really want to increase the ratio of students who receive degrees then they would only admit students with the best grades and the highest levels of motivation. However, the values of higher education in the United States require that institutions admit students regardless of their preparation and willingness to be active partners in the educational endeavor. Therefore, colleges and universities must be prepared to offer appropriate programs and services to students who are not as well prepared or ready to learn.

**Co-curricular student involvement**

The theoretical foundation for this study relies heavily upon the research done by Alexander Astin (1977) through the 1960’s and 1970’s and is represented in his book entitled *Four Critical Years*. Using survey responses collected over ten years by the Cooperative Institutional Research Program (CIRP), Astin analyzed data from over 200,000 first year students and 300 institutions. Students were analyzed using a set of
behavioral and psychological constructs related to both cognitive and affective outcomes. The conceptual framework Astin (1977) developed is the “I-E-O Model” (see fig.1). Inputs are the first parts of the model which are the characteristics students enter the institution with such as students’ high school grade point averages, their demographic characteristics, and the reasons the students chose to attend college. Environment is the second part of the model and refers to the things to which students are exposed during their experience at a college or university. These things might include people like faculty members and peers, activities such as student organizations and place of residence, and things such as the curriculum and financial aid. The last part of the model is the outcomes students report after their experiences with the environment of a particular institution.

Astin repeated his 1977 research in the late 1980’s and the findings were published in 1993 in a book entitled, What matters in college: Four critical years revisited. This study pulled data from first year students who were administered the CIRP entering college first year student survey and then that same cohort of students was surveyed four years later in 1989. Data regarding the institutions and their faculty were gathered from the US Department of Education. In total 24,847 first year students were included in the sample. Using a multiple regression analysis of the environmental factors, several important conclusions were drawn related to students’ co-curricular involvement. “Practically all of the involvement variables showing positive associations with retention suggest high involvement with faculty, with fellow students, or with academic work” (Astin, 1993, p. 196-197).
Student development outcomes, growth in leadership abilities and growth in interpersonal skills, were each highly correlated with student organization affiliation, fraternity and sorority membership, and participation in sports. Astin (1996) stated:

The most important generalization to be derived from this massive study is that the strongest single source of influence on cognitive and affective development is the student’s peer group. In particular, the characteristics of the peer group and the extent of the student’s interaction with that peer group have enormous potential for influencing virtually all aspects of the student’s educational and personal development. Generally speaking, the greater the interaction with peers, the more favorable the outcome. (p. 126)

Student satisfaction with the institution was also a component of Astin’s (1993) study. Satisfaction is an important factor in student success; “overall, satisfaction is also positively related to college GPA” (Astin, 1993, p. 279). Many co-curricular student involvement activities and programs positively correlated to student satisfaction including participation in student organizations, intramural sports, and intercollegiate athletics. Each of these involvement opportunities reflect the important peer group influence on student success. “Student-student interaction… it is positively associated with a number of academic outcomes: degree aspirations, college GPA, and graduating with honors” (p. 385).

Pascarella’s and Terenzini’s (1991) work entitled How College Affects Students, attempted to synthesize the relevant data around student development and change in college. The methodology used to analyze hundreds of studies for the text is called “narrative explanatory synthesis.” In their analysis of studies related specifically to
student co-curricular involvement, Pascarella and Terenzini identified evidence to support the relationship between student persistence and degree attainment and involvement. This correlation was identified as “moderate” and “positive” (pg. 625).

Subsequent studies (Foubert and Grainger, 2006; Kuh, 1995; Huang and Chang, 2004) confirmed Astin’s findings related to positive student development outcomes for students involved in co-curricular programs and activities. Several studies focused on specific types of co-curricular involvement. One such study, conducted by Foubert and Grainger (2006) investigated students involved in student clubs and organizations. Their longitudinal study included approximately 300 students who were surveyed at the end of their first year of college and again at the end of their senior year. The study found that at the end of first year, students involved in student organizations had larger personal development gains than those who did not. While the result was statistically significant as determined by the MANOVA tests, the effect sizes were low. Similar findings were present in the senior year survey results. Despite the small effect size, this study gives support to the involvement theory which it had intended to test.

**Figure 1.** I-E-O Visual Model
Kuh’s (1995) mixed methods study of 149 senior level college students focused on linking specific co-curricular student involvement experiences with specific developmental outcomes described as competencies. The data were analyzed using an inductive analysis process by four different transcript readers and then quantified using a factor analysis. Eighty-five percent of respondents indicated that having specific leadership responsibilities contributed to their personal growth and development. The associated competency gains were noted in interpersonal competencies with 20.9% of students with specific leadership responsibilities and 49% related to practical competency gains.

Astin’s involvement theory was tested on students studying outside of the United States in one research study. Huang and Chang (2004) used data from a sample of 627 Taiwanese college students. This study showed growth in cognitive skills, self-esteem, and the interpersonal skills of students involved in co-curricular activities. Additionally, and importantly, the study showed a strong positive relationship between academic and co-curricular involvement.

**Online Social Networking**

A very large study in 2005 by the EDUCAUSE Center for Applied Research (ECAR) examined student technology use across the United States. Over 18,000 students participated in an online survey, and additional interviews were conducted with 82 students. While primarily focused on student use of technology for classroom related purposes, some additional findings were pertinent to this current research. Nearly 18,000 of the respondents used technology devices besides cell phones an average of 11-15
hours per week. Additionally, almost 17,000 used the internet for personal reasons between 1-2 hours per week (Kvavik & Caruso, 2005). Lenhart, Purcell, Smith, and Zuickuhr (2010) surveyed 800, 12 to 17 years old teenagers and 2,253 adults over age 18 in a study conducted the Pew Research Center’s Internet & American Life Project. This study showed an increase from the 55% of teens reporting using online social networking sites in the 2006 study, to 65% percent using these sites by 2008. Additionally, 72% of 18-29 year olds in the study use online social networking sites. Facebook was the most prevalent site used by adults in the study. This study points to a marked increase of online social networking between 2006 and 2008. One conclusion that can be drawn related to this particular study is that because of the increased use of social networking sites by younger teens, there is a higher likelihood that this behavior will continue for users as they go to college.

Online social networking is a relatively new phenomenon in higher education and not included specifically in the large survey described above. Some research is available that addresses the role online social networking plays in student success and peer group development. Several recent studies have made connections to student development, in particular in relationship to student’s psychosocial and personal development. Finally, there are two specific studies that examine academic achievement indicators and Facebook use.

Lloyd, Dean and Cooper (2009) surveyed 385 undergraduate students using a convenience sample from a large, public institution. The survey consisted of a locally developed instrument in combination with the nationally sampled instrument, the Student Developmental Task and Lifestyle Assessment (p. 700). Three sub-sets were identified
by the assessment including peer relationships, educational involvement, and salubrious lifestyle (p. 700). While the survey addressed broader use of technology beyond social networking, a significant finding of the study was that “peer relationship scores are negatively correlated with the amount of time a student uses the Facebook (r= -.125, p=.014)” (p. 701). The authors hypothesized that this evidence might suggest that while Facebook is a mechanism students use to communicate with each other, it may in fact prevent or inhibit them from developing more meaningful peer relationships.

Ellison, Steinfield, and Lampe (2007) surveyed 286 undergraduate students at Michigan State University. Ninety-four percent of those surveyed used Facebook, spending between 10 and 30 minutes on average per day on the site, and having between 150 and 200 Facebook “friends” (p. 1153). The researchers use the terminology “social capital” to describe the resources people gain through relationships with each other. Further, they delineate the term by describing bridging social capital and bonding social capital. Bridging is a type of social capital that implies weaker relationships between people that would typically not include emotional support for one another (p. 1146).

Using regression analysis, Ellison et al. found support for their research hypothesis that students with lower satisfaction with the institution and low self-esteem scores would show increased gains in bridging social capital if they were more intensely using Facebook. The bridging social capital variable “assessed the extent to which participants were integrated into the MSU community, their willingness to support the community, and the extent to which these experiences broadened their social horizons or worldview” (p. 1162). Additionally, the researchers observed a positive relationship between Facebook use and building and maintaining social capital generally. The
findings of this study are particularly interesting because they substantiate that Facebook is a mechanism by which a peer group can both form and be maintained.

Madge, Meek, Wellens and Hooley (2009) studied students who were enrolled at a university in the United Kingdom and were users of Facebook. Only first year students were included in the study and the total sampled involved 213 students, representing 7% of the overall population of first year undergraduates. The study sample was solicited by the researchers through university Facebook pages and other general advertisements for participation. This resulted in greater participation in the sample by female student (67%) in comparison in the university’s female student population of about 53%. The academic programs represented in the sample were comparable to the campus population. Sixty-two percent of respondents indicated the fashion in which they were using Facebook since coming to college had changed in three primary ways. Students were using Facebook to communicate with high school friends, planning social events and joining student groups affiliated with the university, and for making links with other people at the institution. “Overall, 21% of respondents felt Facebook had been very important in helping them to form friendships at the university and a further 52% said it had been important or quite important” (p. 47). Interesting data emerged through the study around the informal use of Facebook for academic purposes. “Forty-six percent of respondents stated that they used Facebook to informally discuss academic work with other students on a daily or weekly basis and 22% on a monthly basis” (p. 149). Because recruitment of study participants was done through existing Facebook pages, the participation of non-Facebook users was not well represented in this study.
Lou (2009) conducted a quantitative study with a sample of 340 first-year students from a university and a community college to determine if there was a relationship between the use of Facebook, loneliness, and psychosocial self-esteem. There was a positive relationship between the time spent on Facebook and the respondents’ perceived levels of loneliness. Additionally, while Facebook use had a positive relationship with developing offline friendships, the development of those friendships did not have an effect on increased psychosocial self-esteem.

Miller’s (2007) study examined how students use online social networks in relationship to influencing their social networks and experience living on campus. The study was qualitative in nature and used in-depth interviews to derive the study’s themes. Fourteen first-year students who were daily users of online social networking sites were selected to participate. Eight themes were identified including two of note related to peer group development and integration into the environment. Those two themes were, “after the first connection social networks develop quickly” and “close friendships facilitate integration and positive experiences” (p. 55). Additionally, study participants indicated using Facebook to get to know the people around them in the residence hall more without having a face-to-face interaction. The researcher described this as a reference check of others living on the participants’ floor or in the building (p. 77). Forty-three percent of the participants believed that not having a Facebook profile would have had a negative impact on their ability to meet and get to know others (p. 79). This study further illustrates the role that social networking sites have in peer group development which has been identified as a key factor in student success.
Online social networking and academic achievement have rarely been linked in the review of literature. One exploratory study presented at an American Education Research Association conference by Karpinski and Duberstein (2009) attempted to connect these two variables. The study included 102 undergraduate and 117 graduate students. The population sampled was not representative of the student population. The instrument was locally developed and administered to volunteers and the only variable controlled for in the study related to academic status as either an undergraduate or graduate student. Seventy-eight percent of the respondents used the internet at least 3 to 4 hours per day and 91% spent more than five hours per week in extracurricular activities. The results indicated that Facebook users in particular had lower grade point averages and were spending less time per week studying than non-Facebook users. This same exploratory study was further described in an article by Kirschner and Karpinski (2010). MANOVA tests were performed on the variables and this test indicated statistical significance related to Facebook use and student status (p. 1242). Additionally, “for hours spent studying per week, FB users reported studying in the 1-5 h/week range and the nonusers in the 11-15 h/week range” (p. 1242). Importantly, the study did not find a causal link between Facebook use and lower self-reported grade point averages but rather a statistically significant relationship between the variables. While the size and scope of this study limit its generalizability, it does point to the need for more research on this particular subject. Hargittai and Hsieh published results from their 2007 study using over 1000 first-year students enrolled in writing courses. This study included a broad set of questions about student use of social networking sites along with other demographic information and student grade point average. The sample was demographically diverse
with 56% female, 8% African American, 30% Asian. Additionally, 21% were students whose parents did not have college degrees. All students in the sample were enrolled in their first year in college so the results of the study are limited by this factor. Eight-eight percent of those studied use social networking sites, with Facebook being the most popular site with nearly 79% of students. Using regression models to analyze the data set, the researchers found relationships to higher grade point averages based upon demographic characteristics such as gender. For example, women in the study had higher GPA’s than men and those with parents who had college degrees also had higher GPA’s. Variables were added to each regression model until the final model which included variables regarding the ways students used social networking sites. The researchers found no significant differences in GPA based upon the level of neither social networking use nor the types of activities students used the site for (Hargittai and Hsieh, 2007, p. 529). Comparing this study to the Karpinski study points to contradictory findings around social networking use and its relationship to student academic achievement and thusly, points to the need for additional research on this topic. The proposed investigation will include the same academic achievement variable of grade point average, which will help to strengthen the current literature related to how social networking impacts student academic achievement.

**Student Residence**

Residential students have been reported to be more engaged in co-curricular programs and activities than commuting students. Astin (1993) reported positive effects for students living on-campus related to joining social fraternities and sororities and participating in student government; both are specific types of co-curricular involvement.
Higher retention rates generally are reported for students living on-campus than commuting students. Much of the research points to the availability of resources like personal counseling and financial aid and the proximity of involvement opportunities for residential students as factors that increase student achievement and degree attainment (Pascarella & Terenzini, 1991).

Pascarella’s and Terenzini’s (1991) work entitled *How College Affects Students*, attempted to synthesize the relevant data around student development and change in college. The methodology used to analyze hundreds of studies for the text is called “narrative explanatory synthesis”. In their analysis of studies related specifically to student residence, Pascarella and Terenzini state, “even when controls were made for important precollege characteristics such as academic aptitude, socioeconomic status, educational aspirations, and secondary school achievement...living on campus still exerted a statistically significant positive influence on persistence and completion of the bachelor’s degree” (p. 401). The proposed study will also analyze the role of student residence as it relates to academic achievement, student co-curricular involvement and online social networking.

**Effect of Work for Pay**

The impact of work on and off campus on student achievement is not clear in the literature. Work on campus for a few hours per week appears to have a strong, positive impact on student achievement (Astin, 1993; Pascarella & Terenzini, 1991). Conversely, work off-campus either part time or full time may have significant negative influences on student achievement. “Working a full-time job off campus is associated with a pattern of outcomes that is uniformly negative...holding a part-time job off campus has a pattern of
effects that is almost identical to the pattern associated with working full-time” (Astin, 1993, pp. 387-388).

Pike, Kuh, and Massa-McKinley (2008) analyzed data from the 2004 National Survey on Student Engagement (NSSE) which included 560,000 student participants from over 470 colleges and universities. Using ANOVA and ANCOVA tests, the findings of this study were mixed. Students who worked more than 20 hours per week on or off campus had lower self-reported GPA’s. There was no statistical significance between GPA and work on or off campus for less than 20 hours per week. Interestingly, living on campus was positively correlated to working on campus for less than 20 hours per week but negatively correlated to work off campus or work more than 20 hours per week in either location. The proposed study will examine the impact of work for pay as it relates to academic achievement, student co-curricular involvement and online social networking.

Time Spent and Quality of Effort

One of the fundamental components of Astin’s involvement theory relates the time a student spends engaged in his or her educational endeavors to degree attainment and academic achievement. Involvement refers to the investment of physical and psychological energy in various objects. Specifically, Astin states, “involvement has both quantitative and qualitative features. The extent of a student’s involvement in academic work, for instance, can be measured quantitatively [how many hours the student spends studying] and qualitatively [whether the student reviews and comprehends reading assignments or simply stares at the textbook and daydreams]” (Astin, 1999, p. 519). Additionally, “the amount of student learning and personal development associated
with any educational program is directly proportional to the quality and quantity of student involvement in that program” (Astin, 1999, p. 519).

This fundamental principle has been further researched, most extensively by Pace beginning in the 1960’s through the 1980’s (Pascarella & Terenzini, 1991). Pace’s research manifested itself as a series of “quality of effort scales” that assess academic and intellectual experiences, personal and interpersonal experiences, and group facilities and opportunities (Pascarella & Terenzini, 1991). Pace’s research “showed that students gained more from their studies and other aspects of the college experience when they devoted more time and energy to certain tasks that required more effort than others” (Kuh, 2009, p. 684). These tasks included interacting with their peers and faculty members, studying, and applying their learning to specific problems (p. 684).

The amount of time a student spends engaged in educational activities has been subject of significant research. George Kuh (2009), through his work with the National Survey on Student Engagement (NSSE) and the College Student Expectations and Experiences Questionnaires (CSXQ & CSEQ), noted that approximately 60% of entering first year students expected to spend 15 hours per week studying but in follow up surveys only 40% of those same students reported spending that amount of time studying. Additionally, while most entering college students expected to become involved in co-curricular programs, approximately 30% of students did not in fact get involved in any co-curricular activities (2009).

Kuh, Cruce, and Shoup (2008) studied colleges and universities that used the National Survey on Student Engagement (NSSE) to understand how student engagement impacted student grades and persistence after the first year in college. The data set
included more than 6000 students from 18 different institutions. Institution size and type varied. Additional data were included in the study including student entry characteristics such as standardized test scores and high school grade point average along with financial aid information. The findings from this study indicated that “student engagement in educationally purposeful activities is positively related to academic outcomes” (p. 555). This research further indicated that the number of hours per week a student spent studying positively impacted his or her grade point average.

**Conclusion**

The quality and quantity of student involvement in academic endeavors such as co-curricular student involvement and peer group development has an impact on student success and achievement. Little research has been conducted to indicate how specific amounts of time spent in co-curricular involvement or online social networking can be beneficial or harmful to academic achievement. Additionally, some evidence exists to suggest that residential status and work for pay have an impact on academic achievement. The proposed study, therefore, will explore the relationships between time spent engaged in student co-curricular involvement, online social networking and studying and doing coursework have on academic achievement as measured by grade point average.

Additional factors that impact academic achievement such as residence and work for pay on and off campus will also be analyzed. Finally, demographic characteristics such as gender, ethnicity and class standing will be factored in to the analysis.
Chapter 3

Methodology

Astin (1984; 1999) identified time and effort as a student’s most valuable resource. Astin’s (1999) student involvement theory states, “the extent to which students can achieve particular developmental goals is a direct function of the time and effort they devote to activities designed to produce these gains” (p. 522). Research suggests that the time students spend engaged in co-curricular programs and activities generates positive developmental outcomes including increased academic success (Astin, 1977; 1984). Additionally, because of the influence a student’s peer group has on his or her personal development, it is imperative that we learn more about how the frequency that students access online social networking impacts student success. Therefore, the following research questions were analyzed:

1. What is the relationship between academic performance as measured by self-reported grade point average and self-reported time spent on both co-curricular student involvement and online social networking?

2. How do these relationships vary based upon time spent by students studying and doing coursework and work for pay on and off campus?

3. How do these relationships vary based upon student residence, gender, ethnicity, and class standing?
Research Design

In order to answer the research questions proposed by this study, a quantitative research design was used. Specifically, a correlational research design was employed to address the research questions proposed. Correlational research designs are typically used to find relationships between variables using a single study population. It can also be used to find patterns that may exist between the variables (Gall, Gall, and Borg, 2007). Several advantages come from using a correlational design including:

1. Allows the researcher to analyze relationships among a large number of variables within the context of a single study;
2. Allows for the researcher to investigate how the variables either individually or in combination influence another variable or variables;
3. Provides information concerning the degree of relationship between the variables being studied (Gall, Gall, and Borg, 2007, p. 336).

Population and Sample

The sample used for this study was drawn from students attending a large, public research university in the southeastern United States. Students who were registered as officers of student organizations in the institution’s database were solicited to participate. At the time of the survey over 500 student organizations were registered in the database system at the institution, therefore, a wide range of demographic characteristics in participants was expected. Student organizations represent a broad spectrum of student interests including academic and professional to religious and spiritual. Consequently, all students who participated in this study were expected to spend some number of hours per week engaged in co-curricular student involvement; however, the time spent by students
actually participating in organizational activities is varied greatly among group members.

This population of students was purposefully selected to participate in this study due to the researcher’s interest in co-curricular student involvement and its relationship to student success.

Variables

In this study, predictor variables regarding time spent by students engaged in co-curricular involvement and online social networking were used. Students’ work for pay on and off campus and time spent studying and doing coursework were included as predictor variables and have been analyzed based upon the number of hours spent per week as well. Additional demographic variables for student residence, gender, ethnicity, and class standing were factored into the analysis for this study.

The outcome variable for this study was academic performance as indicated by self-reported student grade point average. Online social networking and student co-curricular involvement were predictor variables. Additional predictor variables included the time spent engaged in studying and coursework and work for pay on and off campus along with demographic characteristics such as student residence, gender, ethnicity, and class standing.

Instrument

A survey was developed for the purposes of this study (see Appendix A). In response to research question one, the relationship between academic performance as measured by self-reported grade point average and time spent both on co-curricular involvement and online social networking, student responses to the number of hours
spent per week on these activities was analyzed. The response options were continuous numeric values based upon the student’s response to Survey Question 2.

The lead question for the five time spent questions included in the survey was, “during a typical week in the fall 2010 semester, how many hours did you spend doing the following activities?” The survey responses for the following response options were used:

- Participating in student organization activities and/or attending campus events
- Online social networking

Similarly, research question two used continuous numerical responses for the number of hours spent per week studying and doing coursework and working for pay both on and off campus.

Four demographic characteristics were analyzed including student residence, gender, ethnicity and class standing. Response options for the question “where did you live during the fall 2010 semester” were:

- On-campus (Code = 1)
- Off-campus (Code = 2)

Response options for gender were:

- Female (Code = 1)
- Male (Code = 2)
- Other (Code = 3)
Response options for ethnicity were:

- African/African-American (Code = 1)
- Asian/Asian-American (Code = 2)
- Caucasian (Code = 3)
- Hispanic/Latino/Latina (Code = 4)
- Native American (Code = 5)
- Multi-racial (Code = 6)
- Other (Code = 7)

Response options for class standing were:

- Freshman (Code = 1)
- Sophomore (Code = 2)
- Junior (Code = 3)
- Senior (Code = 4)
- Graduate student (Code = 5)
- Other (Code = 6)

Finally, student overall grade point averages were self-reported based upon the students cumulative average at the conclusion of the fall 2010 semester. The possible response options to this question were as follows:

- Above 3.75-4.00 (Code = 13)
- Above 3.50-3.74 (Code = 12)
- Above 3.25-3.49 (Code = 11)
- Above 3.00-3.24 (Code = 10)
Validity and Reliability

The survey developed for this study was disseminated to several professionals working in student affairs for review and feedback. Persons included in this review included Dr. Tracy Tyree, Associate Vice President of Student Affairs, Dr. Charlene Herreid, Director of Student Affairs Planning, Evaluation, Assessment and Research, and Dr. Thomas Miller, Associate Professor. This panel was chosen because of their individual expertise as Student Affairs practitioners and scholars. This review process confirmed the face validity of the instrument and may well have confirmed the content validity. Dr. Kim VanDerLinden, Vice President for Assessment Programs at Student Voice stated, “although face validity refers to the extent to which an instrument appears, to the average person, to measure what it attempts to measure, construct validity involves the extent to which, in expert opinion, an instrument measures all of the relevant aspects of a particular construct” (personal communication, November 12, 2010). Some changes were recommended by these professionals. One change regarding the ordering of the
variables was recommended and was subsequently implemented prior to the administration of the survey. Additionally, it was recommended that the study use continuous variables as response options for the use of time questions rather than categorical variables. This change was subsequently implemented prior to the launch of the survey. Finally, it was recommended that the measures initially proposed for co-curricular involvement be collapsed onto a single survey question. This change was also implemented.

Additionally, the survey was piloted with a small group of students who were currently involved with student organizations at the institution where the research would take place. Twenty \( (n=20) \) students completed a paper version of the survey. Their feedback indicated they had a clear understanding of the purpose of the study. The pilot group feedback was minimal with most suggesting a reformatting of the text so that it was better spaced on the page. However, this concern was not be present when the survey is administered online. One additional comment which prompted a change that was subsequently implemented was to include an “other” category on the demographic related to gender.

Reliability of the survey instrument was assessed through a test-retest reliability process. “Test reliability refers to the constituency, stability, and precision of test scores” (Gall, Gall, and Borg, 2007, p. 151). A pilot survey was disseminated to 50 students on December 3, 2010. The same group of students was surveyed again on December 16, 2010. Twenty students responded to both surveys, administrations producing a response rate of 40%. Each of the variables was then tested for reliability. The Pearson correlation coefficients ranged from .68 to 1.0 for each of the variables. Time spent
engaged in co-curricular involvement had the lowest correlation coefficient at .68, while a coefficient of .80 is generally preferred for research purposes (Gall et. al, 2007). Further testing of the co-curricular involvement variable was conducted. The responses were changed from continuous variables to categorical variables by the researcher. The test-retest procedure was conducted again yielding similar results. All other variables had significantly higher correlation coefficients including hours of work on campus at .96, hours of work off campus at 1.0, and online social networking .95. The lower correlation for the co-curricular involvement variable could be attributed to the timing of the test-retest as the retest was administered after the semester had ended.

**Data Collection**

Data for this study came from an online administration of the survey. The survey was disseminated to students who were enrolled at a large, public research institution in the southeastern United States and who were additionally registered in the institution’s database of student organization officers during the fall 2010 semester. There were approximately 580 registered student organizations in Fall 2010 which included 180 organizations categorized as academic and professional organizations and eleven organizations categorized as graduate student organizations. The number of students registered in the database was 2,183. The survey was administered through an online survey collection software called *Survey Monkey* (www.surveymonkey.com). Students received an email invitation to participate in the survey on February 14, 2011 (see Appendix B), with reminder emails on February 17, 2011 and February 21, 2011 (see Appendix C & D). The survey closed on February 25, 2011. This schedule was based upon the suggested reminder schedule in Survey Monkey’s publication, *Response Rates*
& Surveying Techniques: Tips to Enhance Survey Respondent Participant. This publication is available online at www.surveymonkey.com.

Additionally, campus departments that support student organization officers distributed postcards to students reminding the students to complete the survey (see Appendix E). Also, two administrative offices at the institution put links to the survey in their online newsletters that were disseminated to student organization officers. Students who completed the survey were voluntarily able to register for a drawing for a $25 gift card from Barnes & Noble. Five gift cards were randomly distributed to survey participants. Survey Monkey’s collection system allows for personally identifiable information such as the email address to be collected so that raffle prizes could be distributed. These email addresses were held in a separate database per Survey Monkey’s procedures for this process. The survey results used in the study therefore remained disconnected from the student email addresses used for the prizes.

Once the survey closed on February 25, 2011, the data were downloaded from the online collection tool. There were 667 total responses collected, or a 30.5% response rate. After removing responses to the survey that were not complete, 613 total responses remained, or 28% of those surveyed (N=613). The existing literature does not offer a clear view of what might be a considered a typical response rate for web-based surveys. It is generally agreed that survey participation across all formats has declined (Schuh, 2009; Cook, Health, & Thompson, 2000; Carini, Hayek, Kuh, Kennedy, Ouimet, 2003).

A response rate of 28% was acceptable for the purposes of this study. While certainly not as large of a response rate that was desired, this level of response ensures some diversity in the sample in terms of each of the demographic characteristics. This
return rate means that approximately 70% of those asked to participate in the survey did not. There are a variety of factors that impact a person’s willingness to respond to surveys. One possible rationale for the lack of response by 70% of those asked to participate is survey fatigue. Students regularly are asked to complete surveys and provide feedback to the institution whether that is for research purposes or assessment purposes. The students population used for this study were surveyed several times in the fall semester and once in the spring semester regarding their views on the efficiency and effectiveness of the institution’s office that provides support to student organizations.

**Data Analysis**

Research Question One was what is the relationship between academic performance as measured by self-reported grade point average and self-reported time spent on both co-curricular student involvement and online social networking. This question had one outcome variable; self-reported grade point average, and two predictor variables; time spent on co-curricular involvement and online social networking (see fig. 2). Research Question Two was how do these relationships vary based upon time spent by students studying and doing coursework and work for pay on and off campus? This question had one outcome variable; self-reported grade point average and two additional predictor variables; time spent studying and doing homework and work for pay (see fig. 3). Finally, research Question Three was how do these relationships vary based upon student residence, gender, ethnicity, and class standing? Again, this question had one outcome variable; self-reported grade point average and additional predictor variables; student residence, gender, ethnicity, and class standing (see fig. 4).
**Figure 2.** Question One Model

**Figure 3.** Question Two Model
Figure 4. Question Three Model

All research questions were analyzed using multiple regression analysis. Gall, Gall, and Borg (2007) state that this statistical test is “used to determine the correlation between a criterion variable and a combination of two or more predictor variables” (p. 353). The criterion variable for this study was self-reported grade point average. This variable included an interval scale of responses. Each of the predictor variables used a different response set and different scales, some categorical and some continuous. The time spent variables, co-curricular involvement, online social networking, studying and doing coursework, and work for pay, each were continuous variables. The demographic variables including gender, ethnicity, class standing, and student residence were categorical. Most importantly, multiple regression analysis “estimates both the magnitude and statistical significance of relationships between variables” (Gall et. al,
Multiple regression analysis also allows for the possibility that the predictor variables may correlate with one another.

Specific statistical analysis included the multiple correlation coefficient ($R$). This measure will indicate the “magnitude of the relationship between the criterion variable and the predictor variables” (Gall, Gall, & Borg, 2007, p. 358). Additionally, the coefficient of determination ($R^2$) was calculated for each research question. This statistic will show variance created by adding the additional predictor variables into the regression model. Finally, beta weights ($\beta$) was calculated for each of the predictor variables. Beta weights are used to “maximize the predictive value of the variables” (Gall, Gall, & Borg, 2007, p. 359). Variables were added into the regression model using forward selection, which is to say that each predictor was added into the model based upon this researcher’s view of its importance. All statistical analysis was completed utilizing SPSS 19.0 software.
Chapter 4
Results

Introduction
This research was conducted to describe the relationship between academic achievement as measured by grade point average and the amount of time students spend engaged in student co-curricular involvement, online social networking, and studying and doing coursework. Additional factors such as student residence, gender, ethnicity, class standing and work for pay were also considered. Data gathered in response to the research questions are presented in this chapter.

Data Demographics
Demographic data were collected including gender, ethnicity, residential status, and class standing. The survey respondents included 414 (67.5%) female students and 199 (32.5%) male students. The ethnic make-up of the respondents included 365 (59.5%) Caucasian students, 75 (12.2%) Hispanic/Latino/Latina students, 63 (10.3%) Asian/Asian American students, 57 (9.3%) African American Students, 32 (5.2%) students who identified as multi-racial, three (.5%) Native-American students, and 18 (2.9%) students who identified as other. The survey respondents were primarily off-campus students, with 508 (82.9%) living off campus and 105 (17.1%) living on campus. Lastly, the survey respondents were primarily upper-division students including 133 (21.7%)
graduate students, 255 (41.6%) seniors, 157 (25.6%) juniors, 71 (11.6%) sophomores, and 21 (3.4%) freshmen. An additional six students identified as other which included medical students and post-baccalaureate students.

The sample for this survey was purposeful and not intended to be representative of the institutional demographics; however, institutional data available for Fall 2010 indicated the survey respondents were similar to the overall population of students who attended the institution as it relates to gender, ethnicity and residential status. Approximately 42% of students attending the university were male, while the survey respondents were 32.5% male. The survey respondents were primarily off-campus students, with on-campus students making up 17% of the sample. The institutional percentage of on-campus students was slightly lower with approximately 14% of students living on-campus. Ethnicity among the survey sample was similar to the institutional enrollment for Caucasian, African American and Hispanic students. The survey sample was less similar in regards to Asian/Asian American students as compared to the institutional enrollment (see Table 1).

Institutional comparisons were not possible for two variables in the study, institutional grade point average and class standing. The institution accepts approximately 4000 new first-time in college students each year and approximately twice that many as transfer students. This would indicate much larger junior and senior classes than freshman and sophomore classes but the actual numbers are unknown to the researcher. Additionally, because the sample included only student organization leaders, freshman and sophomore students were less likely to be in leadership roles within student organizations than their upper-division counterparts.
TABLE 1: Ethnicity of Survey Participants in Comparison to Institutional Data

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Survey Frequency</th>
<th>Survey Percent</th>
<th>Institutional Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>57</td>
<td>9.3%</td>
<td>11.3%</td>
</tr>
<tr>
<td>Asian/Asian American</td>
<td>63</td>
<td>10.3%</td>
<td>6.1%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>365</td>
<td>59.5%</td>
<td>60.1%</td>
</tr>
<tr>
<td>Hispanic/Latino/Latina</td>
<td>75</td>
<td>12.2%</td>
<td>15.2%</td>
</tr>
<tr>
<td>Native American</td>
<td>3</td>
<td>.5%</td>
<td>.004%</td>
</tr>
<tr>
<td>Multi-racial</td>
<td>32</td>
<td>5.2%</td>
<td>.01%</td>
</tr>
<tr>
<td>Other</td>
<td>18</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>613</strong></td>
<td><strong>99.9%</strong></td>
<td><strong>92.7%</strong></td>
</tr>
</tbody>
</table>

*Data derived from institutional information database*

Lastly, self-reported grade point average was submitted by all survey participants. The frequency table below illustrates the breakdown among the grade point average categories (see Table 2). Student organization leaders, which make up the study population, are required to be in good standing in order to serve as an officer of any student organization on campus. Therefore, the reporting by only two participants with a grade point average below 2.0 is not surprising given that the institution’s standard for good standing was minimally a 2.0. Additionally, the presence of graduate students in the sample cause the grade point average of the sample to be higher than what may typically be found. The average grade point average for the whole sample, including graduate students was 11.24 which translates to 3.25-3.49 on the scale. The average grade point average for the sample excluding graduate students was 10.93 which translates to 3.0-3.24 on the scale. While lower than the full sample, the overall grade point average of the sample is higher than what was anticipated although not surprising.
given that the population surveyed was student leaders who are required to maintain good standing in order to continue in their roles on campus. The institutional data regarding average grade point average was not available so an institutional comparison on this characteristic is not possible.

**TABLE 2: Self-reported GPA Frequency Table**

<table>
<thead>
<tr>
<th>GPA</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 1.0-1.24</td>
<td>1</td>
<td>.2%</td>
</tr>
<tr>
<td>Above 1.75-1.99</td>
<td>1</td>
<td>.2%</td>
</tr>
<tr>
<td>Above 2.0-2.24</td>
<td>3</td>
<td>.5%</td>
</tr>
<tr>
<td>Above 2.25-2.49</td>
<td>7</td>
<td>1.1%</td>
</tr>
<tr>
<td>Above 2.5-2.74</td>
<td>22</td>
<td>3.6%</td>
</tr>
<tr>
<td>Above 2.75-2.99</td>
<td>74</td>
<td>12.0%</td>
</tr>
<tr>
<td>Above 3.0-3.24</td>
<td>90</td>
<td>14.6%</td>
</tr>
<tr>
<td>Above 3.25-3.49</td>
<td>100</td>
<td>16.2%</td>
</tr>
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<td>Above 3.5-3.74</td>
<td>119</td>
<td>19.3%</td>
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<tr>
<td>Above 3.75-4.0</td>
<td>196</td>
<td>31.8%</td>
</tr>
<tr>
<td>Total</td>
<td>613</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Academic Performance with Involvement and Social Networking**

The first research question examines the relationship between academic performance as measured by self-reported grade point average and self-reported time spent on both co-curricular student involvement and online social networking. The
average response regarding self-reported grade point average was 11.24 which equates to a grade point average between 3.25 and 3.49.

Regression models were analyzed separating the two independent variables, co-curricular involvement and online social networking then combining them in a new model. The mean number of hours reported for co-curricular involvement was 8.10 hours per week. The statistical analysis of the relationship between grade point average and co-curricular involvement showed a significant negative correlation between the variables ($r = -.20, p < .001$). The mean number of hours per week the students in the study engaged in online social networking was 8.05. The statistical analysis of the relationship between grade point average and online social networking showed a significant negative correlation between the variables ($r = -.11, p < .01$).

Next, a regression and correlation analysis was conducted to ascertain the relationship between grade point average and the two predictor variables, co-curricular student involvement and online social networking. Table 3 outlines the results from this analysis. The table illustrates that both co-curricular involvement and online social networking are negatively correlated with grade point average, indicating that the less time spent engaged in these two activities, the higher the grade point average of students. The multiple regression model with both predictors produced $R^2 = .04$, $F(1, 610) = 15.02$, $p < .001$. This implies that co-curricular involvement and online social networking can account for approximately 4% of the change in grade point average among participants in the study. In this model, co-curricular involvement, $\beta = -.19, t(610) = -4.76, p < .001$, and online social networking, $\beta = -.08, t(610) = -1.98, p < .05$, appear to be statistically
significant predictors of grade point average with co-curricular student involvement being somewhat more significant.

TABLE 3: Regression Results for Research Question 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Correlation</th>
<th>b</th>
<th>SE b</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>11.24 (3.25-3.49 GPA)</td>
<td>11.72</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>8.10</td>
<td>-.20</td>
<td>-.05</td>
<td>.01</td>
<td>-.19***</td>
</tr>
<tr>
<td>Social Networking</td>
<td>8.05</td>
<td>-.11</td>
<td>-.01</td>
<td>.01</td>
<td>-.08*</td>
</tr>
</tbody>
</table>

*p < .05 **p < .01 ***p < .001

**Academic Performance with Involvement, Social Networking, Studying, and Work for Pay**

The second research question examines the relationships between grade point average, online social networking, and co-curricular student involvement, studying and doing coursework, and work for pay.

Regression models were analyzed separating the three independent variables, studying and doing coursework, work for pay on campus and work for pay off campus. Then these variables were combined with the previous variables into a new model. The mean number of hours reported for studying and doing coursework was 21.75 hours per week. The statistical analysis of the relationship between grade point average and studying and doing coursework showed a significant, positive correlation between the variables ($r = .12, p < .001$). This result indicated that as the number of hours a student spent studying increased, their grade point average also increased. The mean number of hours per week the students spent working for pay on campus was 5.95. The statistical analysis of the relationship between grade point average and work for pay on campus
showed a non-significant correlation between the variables \((r=.05, p = .09)\). The last variable related to this research question, work for pay off campus had a mean number of hours per week of 7.3 The statistical analysis of the relationship between grade point average and work for pay off campus showed a significant, negative correlation between the variables \((r = -12, p < .01)\)

Next, a regression and correlation analysis was conducted to ascertain the relationship between grade point average and the five predictor variables, co-curricular student involvement, online social networking, studying and doing coursework, work for pay on campus and work for pay off campus. Table 4 outlines the results from this analysis. The table illustrates that studying and doing coursework is positively correlated with grade point average, indicating that the more time spent engaged in this activity the higher the grade point average of students. The table additionally illustrates a negative correlation between work for pay off campus and grade point average. The impact of work for pay on campus was negligible and was removed from the model as a predictor. The multiple regression model with all four remaining predictors produced \(R^2 = .09, F(4,608) = 14.56, p < .001\). This implies that the four predictor variables can account for approximately 9% of the change in grade point average among participants in the study. In this model, co-curricular involvement, \(\beta = -.20, t(608) = -5.06, p < .001\), is the most significant predictor, followed by studying and doing coursework, \(\beta = .17, t(608) = 4.12, p < .001\). Both online social networking, \(\beta = -.13, t(608) = 3.17, p < .01\), and work for pay off campus, \(\beta = -.11, t(608) = -2.85, p < .01\), were significant.
TABLE 4: Regression Results for Research Question 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Correlation</th>
<th>b</th>
<th>SE b</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>11.24 (3.25-3.49 GPA)</td>
<td>11.60</td>
<td>.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>8.10</td>
<td>-.20</td>
<td>-.05</td>
<td>.01</td>
<td>-.20***</td>
</tr>
<tr>
<td>Social Networking</td>
<td>8.05</td>
<td>-.11</td>
<td>-.02</td>
<td>.01</td>
<td>-.13**</td>
</tr>
<tr>
<td>Studying and Doing Coursework</td>
<td>21.75</td>
<td>.12</td>
<td>.02</td>
<td>.004</td>
<td>.17***</td>
</tr>
<tr>
<td>Work for pay off campus</td>
<td>7.3</td>
<td>-.12</td>
<td>-.02</td>
<td>.01</td>
<td>-.11**</td>
</tr>
</tbody>
</table>

*p < .05 **p < .01 ***p < .001
Note: Work for pay on campus was removed from the regression model

Academic Performance with Involvement, Social Networking, Studying and Work for Pay, and Demographic Characteristics

The final research examines the relationships between self-reported grade point average, co-curricular student involvement, online social networking, studying and doing coursework, work for pay on campus and work for pay off campus, student residence, gender, ethnicity and class standing.

Regression models were analyzed separating the four independent variables, student residence, gender, ethnicity and class standing. Then these variables were combined with the previous variables into a new model. Because the response sets for these variables yielded categorical data, it is not appropriate to report the means of these variables. The statistical analysis of the relationship between grade point average and student residence showed a non-significant correlation between the variables (r=.01, p = .41). On-campus and off-campus students reported the same mean grade point average between 3.25 and 3.49. The analysis of gender and grade point average showed a significant, positive correlation between the variables (r=.12, p < .001). This finding
implies that female students have higher grade point averages than male students based upon the coding for this variable with an average reported grade point average of between 3.25 and 3.49 whereas male students reported a grade point average between 3.0 and 3.24. Table 5 provides an overview of grade point average by ethnicity. Asian/Asian American students and Caucasian students reported the highest grade point averages among those in the study. Finally, the correlation between grade point average and class standing was the strongest of the categorical variables ($r=.20, p < .001$). This finding implies that graduate students have higher grade point averages than undergraduate students based upon the coding for this variable, specifically reporting the highest grade point averages of between 3.50 and 3.74. Table 6 illustrates grade point average by class standing. Of the non-graduate and professional students in the study, freshman and sophomore students reported the highest grade point averages.

**TABLE 5:** Ethnicity and Grade Point Average

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Reported GPA</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>10.9 (3.0-3.49)</td>
<td>57</td>
</tr>
<tr>
<td>Asian/Asian American</td>
<td>11.63 (3.25-3.74)</td>
<td>63</td>
</tr>
<tr>
<td>Caucasian</td>
<td>11.40 (3.25-3.74)</td>
<td>365</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10.9 (3.0-3.49)</td>
<td>75</td>
</tr>
<tr>
<td>Native American</td>
<td>11.00 (3.25-3.49)</td>
<td>3</td>
</tr>
<tr>
<td>Multiracial</td>
<td>10.84 (3.0-3.49)</td>
<td>32</td>
</tr>
<tr>
<td>Other</td>
<td>9.83 (2.75-3.24)</td>
<td>18</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11.24 (3.24-3.49)</td>
<td>613</td>
</tr>
</tbody>
</table>
TABLE 6: Class Standing and Grade Point Average

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Reported GPA</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>11.38 (3.25-3.49)</td>
<td>21</td>
</tr>
<tr>
<td>Sophomore</td>
<td>11.22 (3.25-3.49)</td>
<td>71</td>
</tr>
<tr>
<td>Junior</td>
<td>10.77 (3.0-3.49)</td>
<td>157</td>
</tr>
<tr>
<td>Senior</td>
<td>10.90 (3.0-3.49)</td>
<td>225</td>
</tr>
<tr>
<td>Graduate Student</td>
<td>12.33 (3.5-3.74)</td>
<td>133</td>
</tr>
<tr>
<td>Other</td>
<td>12.00 (3.5-3.74)</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11.24 (3.24-3.49)</strong></td>
<td><strong>613</strong></td>
</tr>
</tbody>
</table>

Next, a regression and correlation analysis was conducted to ascertain the relationship between grade point average and the ordinal predictor variables, co-curricular student involvement, online social networking, studying and doing coursework, work for pay on campus and work for pay off campus and the four categorical variables, student residence, gender, ethnicity and class standing. Table 7 outlines the results from this analysis. The impact of student residence was negligible in the model so was therefore removed from the analysis. This final multiple regression model with all predictors included, excluding work for pay on campus and student residence, produced $R^2 = .37$, $F(7,605) = 13.52, p < .001$. This implies that the seven predictor variables can account for approximately 37% of the change in grade point average among participants in the study. In this model, class standing $\beta = .16, t(605) = 4.1, p < .001$, is the most significant predictor in the model, followed by co-curricular student involvement $\beta = -.16, t(605) = -4.05, p < .001$. Studying and doing homework $\beta = .15, t(605) = 3.8, p < .001$ and social networking $\beta = -.13, t(605) = -3.12, p < .01$ are contribute significantly to
the model. Lastly, gender $\beta = -.12$, $t(605) = -3.03$, $p < .01$, work off campus $\beta = -.11$, $t(605) = -2.89$, $p < .01$, and ethnicity $\beta = -.11$, $t(605) = -2.77$, $p < .01$ each contribute to the model.

**TABLE 7: Regression Results for Research Question 3**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (3.25-3.49 GPA)</th>
<th>Correlation</th>
<th>b</th>
<th>SE b</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>11.24</td>
<td></td>
<td>11.636</td>
<td>.36</td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>8.10</td>
<td>-.20</td>
<td>-.04</td>
<td>.01</td>
<td>-.16***</td>
</tr>
<tr>
<td>Social Networking</td>
<td>8.05</td>
<td>-.11</td>
<td>-.02</td>
<td>.01</td>
<td>-.13**</td>
</tr>
<tr>
<td>Studying and Doing Coursework</td>
<td>21.75</td>
<td>.12</td>
<td>.01</td>
<td>.003</td>
<td>.15***</td>
</tr>
<tr>
<td>Work for pay off campus</td>
<td>7.3</td>
<td>-.12</td>
<td>-.02</td>
<td>.01</td>
<td>-.11**</td>
</tr>
<tr>
<td>Gender</td>
<td>- .12</td>
<td>-.42</td>
<td>.14</td>
<td></td>
<td>-.12**</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-.12</td>
<td>-.15</td>
<td>.05</td>
<td></td>
<td>-.11**</td>
</tr>
<tr>
<td>Class Standing</td>
<td>.20</td>
<td>.25</td>
<td>.06</td>
<td></td>
<td>.16***</td>
</tr>
</tbody>
</table>

*p < .05 **p < .01 ***p < .001

Note: Work for pay on campus and student residence were removed from the model.

**Summary of Findings**

The purpose of this research study was to determine primarily how students’ use of time relates to academic achievement as measured by grade point average. The primary research interest pertained to the variables relating to student co-curricular involvement and online social networking. The regression analysis with these two variables indicated a negative predictive value with grade point average, with co-curricular involvement being the most negative ($\beta = -.19$) and online social networking also negatively correlated ($\beta = -.08$). The average time spent by students surveyed was approximately 8 hours for each activity per week. The multiple regression model with
both predictors produced $R^2 = .04$, $F(1, 610) = 15.02$, $p < .001$. The effect size for this model was $f^2 = .04$. So while this is a statistically significant finding, the practical significance of the finding is minimal. Statistical significance can largely be attributed to the large sample size in this study, however, statistical significance also has to be partnered with effect size and replicability in order to produce a practically significant result (Hojat & Xu, 2004). Cohen (1992) defines small effect size as .02, medium effect size as .15 and large effect size as .35.

When adding additional variables into the regression model, the data indicate a positive predictive value ($\beta = .17$) between grade point average and studying and doing homework. The correlation between work for pay on campus was negligible and was not ultimately included in the regression model. Work for pay off campus had negative predictive value ($\beta = -.11$). The multiple regression model with all four remaining predictors produced $R^2 = .09$, $F(4,608) = 14.56$, $p < .001$. The effect size for this model was $f^2 = .099$. Again, while statistically significant, the practical significance of the regression analysis is minimal.

The categorical variables produced net positive predictive value related to class standing ($\beta = .16$) and net negative predictive value for gender ($\beta = -.12$) and ethnicity ($\beta = -.11$). Student residence had minimal impact on the regression model and was also not included in the model. This final multiple regression model with all predictors included, excluding work for pay on campus and student residence, produced $R^2 = .37$, $F(7,605) = 13.52$, $p < .001$. This result is statistically significant in that it accounts for approximately 37% of the variance in grade point average among survey participants. The effect size the final regression model was $f^2 = .59$. This was the only large effect size
of all the models. This indicates that this model has the ability to predict a significant amount of the variance in grade point average. This would lead the researcher to believe that the demographic characteristics that were added in to the model had the most significant impact given that the previous models had low to medium effect sizes.

**Secondary Regression Analysis**

After concluding the regression analysis on the original data set, the researcher determined that the presence of graduate students in the study sample could have impacted the results of the analysis. Graduate students tend to have higher grade point averages than undergraduate students, may in fact work more both on and off campus than undergraduate students, and most likely live in off campus residences. Each of these factors could have led to a different set of results. A secondary analysis was conducted with the data set removing 133 graduate students and the six students who identified as other. The resulting data set included 474 students. The demographic characteristics of the data set include 322 female students and 152 male students. There were 43 African American students remaining, 49 Asian/Asian American students, 277 Caucasian, 60 Hispanic/Latino/Latina, three Native American students, 26 who identified as multi-racial and 17 other. The data set remained largely off-campus students with 375 and 99 on-campus residential students. The average grade point average of this data set was between 3.0 and 3.24 which was lower than the average of the data set which included graduate students.

**Academic Performance with Involvement and Social Networking.**

The first research question examines the relationship between academic performance as measured by self-reported grade point average and self-reported time
spent on both co-curricular student involvement and online social networking. The average response regarding self-reported grade point average was 10.93 which equates to a grade point average between 3.00 and 3.24.

Regression models were analyzed separating the two independent variables, co-curricular involvement and online social networking then combining them in a new model. The mean number of hours reported for co-curricular involvement was 9.2 hours per week. The statistical analysis of the relationship between grade point average and co-curricular involvement showed a negative correlation between the variables \( r = -0.13, p < 0.01 \). The mean number of hours per week the students in the study engaged in online social networking was 8.73. The statistical analysis of the relationship between grade point average and online social networking showed a negative, but not statistically significant correlation between the variables \( r = -0.06, p = 0.08 \).

Next, a regression and correlation analysis was conducted to ascertain the relationship between grade point average and the two predictor variables, co-curricular student involvement and online social networking. Table 8 outlines the results from this analysis. The table illustrates that both co-curricular involvement and online social networking were negatively correlated with grade point average, indicating that as the grade point average of those in the study increases, the number of hours spent engaged in these activities decrease.

The multiple regression model with both predictors produced \( R^2 = 0.02, F(2, 471) = 4.34, p < 0.05 \). This implies that co-curricular involvement and online social networking can account for approximately 2% of the change in grade point average among participants in the study. This revised regression model and correlations proved to be
slightly less significant than the model which included graduate students despite an increased amount of time spent by students engaged in co-curricular involvement and online social networking.

**TABLE 8:** Regression Results for Research Question 1 Secondary Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Correlation</th>
<th>b</th>
<th>SE b</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>10.93 (3.0-3.24 GPA)</td>
<td></td>
<td>11.25</td>
<td>.13</td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>9.20</td>
<td>-.13</td>
<td>-.03</td>
<td>.01</td>
<td>-.12**</td>
</tr>
<tr>
<td>Social Networking</td>
<td>8.73</td>
<td>-.06</td>
<td>-.01</td>
<td>.01</td>
<td>-.05*</td>
</tr>
</tbody>
</table>

*p = .28 **p < .01 *** p < .001

**Academic Performance with Involvement, Social Networking, Studying and Work for Pay.**

The second research question examines the relationships between grade point average, online social networking, and co-curricular student involvement, studying and doing coursework and work for pay.

Regression models were analyzed separating the three independent variables, studying and doing coursework, work for pay on campus and work for pay off campus. Then these variables were combined with the previous variables into a new model. The mean number of hours reported for studying and doing coursework was 20.18 hours per week. The statistical analysis of the relationship between grade point average and studying and doing coursework showed a correlation between the variables (r = .11, p < .001). This result indicated that as the number of hours a student spent studying increased, their grade point average also increased. The mean number of hours per week the students spent working for pay on campus was 4.33. The statistical analysis of the relationship between grade point average and work for pay on campus showed a non-
significant correlation between the variables ($r = -0.07, p = 0.06$). The last variable related to this research question, work for pay off campus had a mean number of hours per week of 7.54. The statistical analysis of the relationship between grade point average and work for pay off campus showed a correlation between the variables ($r = -0.14, p < 0.001$).

Next, a regression and correlation analysis was conducted to ascertain the relationship between grade point average and the five predictor variables, co-curricular student involvement, online social networking, studying and doing coursework, work for pay on campus and work for pay off campus. Table 9 outlines the results from this analysis. The table illustrates that studying and doing coursework is positively correlated with grade point average, although slightly less so than in the original analysis which included graduate students. This result indicates that the more time spent engaged studying and doing coursework the higher the grade point average of students, although students in this model studied approximately 1.5 hours less than the average amount of time spent in the model which included graduate students. The table additionally illustrates a slightly greater negative correlation between work for pay off campus and grade point average than in the original model. The impact of work for pay on campus was negligible and was also removed from the model as a predictor. The multiple regression model with all four remaining predictors produced $R^2 = 0.07, F(4,469) = 8.56, p < 0.001$. This implies that the four predictor variables can account for approximately 7% of the change in grade point average among participants in the study. The ability of this model to predict change in grade point average is lower than in the model which included graduate students.
TABLE 9: Regression Results for Research Question 2 Secondary Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Correlation</th>
<th>b</th>
<th>SE b</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>10.93 (3.0–3.24 GPA)</td>
<td>11.25</td>
<td>.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>9.20</td>
<td>-.13</td>
<td>-.03</td>
<td>.01</td>
<td>-.15***</td>
</tr>
<tr>
<td>Social Networking</td>
<td>8.72</td>
<td>-.06</td>
<td>-.02</td>
<td>.01</td>
<td>-.13**</td>
</tr>
<tr>
<td>Studying and Doing Coursework</td>
<td>20.18</td>
<td>.11</td>
<td>.02</td>
<td>.01</td>
<td>.18***</td>
</tr>
<tr>
<td>Work for pay off campus</td>
<td>7.54</td>
<td>-.14</td>
<td>-.02</td>
<td>.01</td>
<td>-.15***</td>
</tr>
</tbody>
</table>

*p < .05  **p < .01  ***p < .001
Note: Work for pay on campus was removed from the regression model

**Academic Performance, Involvement, Social Networking, Studying and Work for Pay, and Demographic Characteristics.**

The final research examines the relationships between self-reported grade point average, co-curricular student involvement, online social networking, studying and doing coursework, work for pay on campus and work for pay off campus, student residence, gender, ethnicity and class standing.

Regression models were analyzed separating the four independent variables, student residence, gender, ethnicity and class standing. Then these variables were combined with the previous variables into a new model. Because the response sets for these variables yielded categorical data, it is not appropriate to report the means of these variables. The statistical analysis of the relationship between grade point average and student residence showed very little correlation between the variables ($r = -.07, p = .63$). The analysis of gender and grade point average showed a correlation between the variables ($r = -.14, p < .001$). This finding implies that female students have higher grade point averages than male students based upon the coding for this variable with an average
reported grade point average of between 3.25 and 3.49 whereas male students reported a grade point average between 3.0 and 3.24. Asian/Asian American students and Caucasian students reported the highest grade point averages among those in the study. These findings are the same as the earlier model which included graduate students.

Finally, the correlation between grade point average and class standing, which had been the strongest relationship of the categorical variables in the previous model, was not so in the current model and was ultimately removed from the analysis \((r = .07, p = .076)\). Lastly, residential students reported higher grade point averages than off-campus students with on-campus students reporting averages between 3.25 and 3.49 and off-campus between 3.0 and 3.24. This is a change from the original analysis which included graduate students.

Next, a regression and correlation analysis was conducted to ascertain the relationship between grade point average and the ordinal predictor variables, co-curricular student involvement, online social networking, studying and doing coursework, work for pay on campus and work for pay off campus and the four categorical variables, student residence, gender, ethnicity and class standing. Table 10 outlines the results from this analysis. While the mean grade point average between on and off campus students changed in this model, the impact of student residence was also negligible in the model so was therefore removed from the analysis. This final multiple regression model with all predictors included, excluding work for pay on campus, class standing and student residence, produced \(R^2 = 0.097\), \(F(4,467) = 8.33, p < .001\). This implies that the six predictor variables can account for approximately 10% of the change in grade point average among participants in the study. This result indicates a decrease in the overall
ability of this regression model to predict a change in grade point average from the original regression model that included graduate students.

**TABLE 10: Regression Results for Research Question 3 Secondary Analysis**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Correlation</th>
<th>b</th>
<th>SE b</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPA</td>
<td>10.93 (3.0–3.24 GPA)</td>
<td>12.32</td>
<td>.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involvement</td>
<td>9.20</td>
<td>-.13</td>
<td>-.03</td>
<td>.01</td>
<td>-.13**</td>
</tr>
<tr>
<td>Social Networking</td>
<td>8.73</td>
<td>-.06</td>
<td>-.02</td>
<td>.01</td>
<td>-.15**</td>
</tr>
<tr>
<td>Studying and Doing Coursework</td>
<td>20.18</td>
<td>.11</td>
<td>.02</td>
<td>.004</td>
<td>.18***</td>
</tr>
<tr>
<td>Work for pay off campus</td>
<td>7.5</td>
<td>-.14</td>
<td>-.02</td>
<td>.007</td>
<td>-.13**</td>
</tr>
<tr>
<td>Gender</td>
<td>-.14</td>
<td>-.45</td>
<td>.16</td>
<td></td>
<td>-.12**</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>-.13</td>
<td>-.16</td>
<td>.06</td>
<td></td>
<td>-.12**</td>
</tr>
</tbody>
</table>

*p < .05 **p < .01 *** p < .001

Note: Work for pay on campus, student residence, and class standing were removed from the model.

**Summary of Findings.**

There was little variance between the regression models using the full population in the study versus the sample which excluded graduate students. The mean grade point averages between the two groups was slightly lower for undergraduate students versus the sample that included graduate students with the average of 10.93 which translated to 3.0-3.24. The sample which included graduate students was 11.24 which translated to 3.45-3.49. The mean number of hours increased in the secondary data analysis for the variables of co-curricular involvement, online social networking and work for pay off-campus while the number of hours decreased for studying and doing coursework. Despite these differences, the regression models still showed low to medium effect sizes.
Regression Model One had an effect size of $f^2 = .02$. Regression Model Two had an effect size of $f^2 = .08$. The final regression model had an effect size of $f^2 = .11$. Unlike in the analysis of the full population sample, the last regression model that excluded graduate students did not have a large effect size nor was the $R^2 = .097$ as significant.

The variance in the correlations between the complete population sample and the one which excluded graduate students was also minimal. There were decreases in the correlations between online social networking and co-curricular involvement and grade point average. While both remained negatively correlated, they were both less so in the model that excluded graduate students. Finally, the model which excluded graduate students did not show a significant correlation between class standing and grade point average. This variable was removed from the last regression model.
Chapter 5
Discussion and Conclusions

Summary of the Study

Research suggests that the time students spend engaged in co-curricular programs and activities and the level at which they are involved generates positive developmental outcomes including increased academic success (Astin, 1977 & 1984). The purpose of this research was to understand the relationships between the time students spend engaged in student co-curricular involvement, online social networking, and studying on their academic achievement. Additional factors such as student residence, gender, ethnicity, class standing and work for pay were also considered.

Three research questions were proposed. They were as follows:

1. What is the relationship between academic performance as measured by self-reported grade point average and self-reported time spent on both co-curricular student involvement and online social networking?

2. How do these relationships vary based upon time spent by students studying and doing coursework and work for pay on and off campus?

3. How do these relationships vary based upon student residence, gender, ethnicity, and class standing?

Astin’s student involvement theory has widely been accepted, so this research attempted to further Astin’s earlier research by more closely examining the impact of the
number of hours students engage in co-curricular activities. Additionally, since Astin’s research was completed before the creation of current versions of online social networking, this research endeavored to understand the influence that online social networking may have on student academic achievement. Lastly, by evaluating the relationships between student academic achievement, online social networking and co-curricular student involvement in the context of other demographic characteristics such as student residence, ethnicity, gender, class standing, and work for pay this study hoped to further our understanding of these factors.

Data for this study came from an online survey. The survey was disseminated to students who were enrolled at a large, public research institution in the southeastern United States and who were additionally registered in the institution’s database of student organization officers during the fall 2010 semester. The number of students registered in the database was 2,183. There were 667 total responses collected, or a 30.5% response rate. After removing 54 responses to the survey that were not complete, 613 total responses remained, or 28% of those surveyed (N=613). The results of this study cannot be generalized to other populations of students as the sample is not representative nor was it intended to be. The population was purposefully chosen and represents students who were engaged in the co-curricular activity of student organization leadership in the Fall 2010 semester.

Academic Performance with Involvement and Social Networking Findings and Interpretations

The relationship between co-curricular student involvement, online social networking and academic achievement was the most important question being considered
in this study. Both variables were found to be negatively correlated to academic performance as measured by grade point average. That is to say, as the amount of time spent in these activities decreased, the grade point average of students increased. The results, while statistically significant, had a small effect size so their practical significance is limited.

The negative correlation between co-curricular student involvement and grade point average was unexpected given the vast amount of literature that would suggest the contrary (Astin, 1977, 1984, 1993, 1999; Pascarella & Terenzini, 1991; Kuh, Schuh, Whitt, et al., 1991; Kuh, 2009). The students sampled for this study were involved in co-curricular activities and in particular, served as leaders of student organizations. Their leadership of those organizations was predicated on their continued good standing with the institution so the overall grade point average of the population in the sample was likely higher than that of the general student population. Additionally, their leadership of those organizations likely required a certain amount of time spent on organizational activities in order to serve in that leadership capacity.

The literature suggested that student organization involvement is largely considered to be an educationally purposeful activity. Miller and Herreid (2008) identified that an incoming student’s plan to participate in a student organization was positively correlated to persistence. A study by Foubert and Grainger (2006) investigated students involved in student clubs and organizations, which is the specific population also used in this study. Their longitudinal study included approximately 300 students who were surveyed at the end of their first year of college and again at the end of their senior year. The study found that at the end of first year, students involved in student
organizations had larger personal development gains than those who did not. While the result was statistically significant as determined by the MANOVA tests, the effect sizes were low. Similar findings were present in the senior year survey results.

Time spent engaged in online social networking was also negatively correlated with grade point average. This result may lend support to research by Karpinski and Duberstein (2009) that indicated FaceBook users had lower grade point averages than non-FaceBook users. The current study did not use a control group so the only conclusion that can be safely drawn from the study is to say that there is a statistically significant negative correlation between online social networking and grade point average.

Using both variables in the regression model yielded a very low $R^2$ value of .04 meaning that the model could only account for approximately 4% of the variance in grade point average. This implies that co-curricular involvement and online social networking together had very little impact on the grade point average of those participating in the study.

**Academic Performance with Involvement, Social Networking, Studying, and Work for Pay Findings and Interpretations**

The additional variables of studying and doing coursework and work for pay were added in to the regression model in response to research Question Two. The average amount of time spent by the survey respondents studying and doing coursework was 21.75, work for pay on-campus was 5.95 and work for pay off-campus was 7.3 hours per week. Work for pay on-campus had little to no impact in the regression model and was removed for the analysis.
The item studying and doing coursework was positively correlated to grade point average, implying that the more time spent studying, the higher the grade point average of the student. While this is a positive correlation and statistically significant, its practical significance is low as the effect size of this regression model is small. However, this finding is in keeping with previous research dating back to Astin’s (1984) early work that indicated the more time and energy students’ spend studying, the higher their grade point average.

Work for pay off-campus was found to be negatively correlated with grade point average meaning that the more time spent on work for pay off-campus, the lower the grade point average of the student. Work for pay on-campus has very little correlation and was not ultimately considered as a variable in the model.

It is important to note that only studying and doing coursework was found to be positively, significantly correlated with grade point average whereas all of the other variables in the model were negatively, significantly correlated. The time spent engaged in studying and doing coursework at approximately 22 hours per week was more hours per week than spent on both co-curricular involvement and online social networking combined at approximately 16 hours per week. Again, this would indicated that studying and doing coursework has a significant, positive relationship to grade point average even with a higher number of hours spent per week than the other activities in the study.

Using the additional variables in the regression model yielded a very low $R^2$ value of .09 meaning that the model could only account for approximately 9% of the variance in grade point average. This implies that co-curricular involvement, online social
networking, studying and doing coursework and work for pay off-campus together had
every little impact on the grade point average of those participating in the study.

**Academic Performance with Involvement, Social Networking, Studying, Work for Pay, and Demographic Characteristics Findings and Interpretations**

The demographic variables were added into the regression model for research question three. The findings indicate that female students have higher grade point averages than male students. Asian/Asian-American and Caucasian students in the study had higher grade point averages and that graduate students had higher grade point averages than under-graduate students. Student residence had a negligible impact on the model and was removed from the regression model.

Using the additional demographic variables in the regression model yielded a $R^2$ value of .37 meaning that the model could account for approximately 37% of the variance in grade point average. The effect size of this model was large, the only model within the study to be so. While this model has more statistical and practical significance than the other models, it is difficult to determine its true significance with the large number of variables that were in this final regression model. The presence of the demographic variables most likely accounts for the larger proportion of the variance in this model. Other research exists regarding the role of gender and ethnicity in predicting grade point average.

**Secondary Regression Analysis Findings and Interpretations**

There was little variance between the regression models using the full population in the study versus the sample which excluded graduate students. The mean grade point averages between the two groups were slightly lower for undergraduate students versus
the sample that included graduate students with the average of 10.93 or 3.0-3.24. The grade point average for the sample that included graduate students was 11.24 or 3.45-3.49. The mean number of hours increased in the secondary data analysis for the variables of co-curricular involvement, online social networking and work for pay off-campus while the number of hours decreased for studying and doing coursework. Despite these differences, the regression models still showed low to medium effect sizes.

The variance in the correlations between the complete population sample and the one which excluded graduate students was also minimal. There were decreases in the correlations between online social networking and co-curricular involvement and grade point average. While both remained significantly, negatively correlated, they were both less so in the model that excluded graduate students. These reduced negative correlations were present despite an increase in the actual number of hours spent engaged in these activities by the undergraduate student sample. So while the overall effect is that while time engaged in these activities increase, grade point average decreases, it is less so in the model with undergraduate students than in the model that also included graduate students.

**Recommendations for Practice**

This study yielded statistically significant results related to almost all of the variables and for each of the regression models. The large sample size gathered for this study had an impact on the statistically significant findings. “As reported by Meehl (1967) and many authors since, with a large enough sample and reliable assessment, practically every association will be statistically significant” (McLean & Ernest, 1998, p. 19). However, the practical significance of the results of the study was small. Practical
significance is an important consideration in determining the overall value of the data related to the study as this researcher does not wish to overstate the importance of the findings. “Statistical significance is but one of three criteria that must be demonstrated to establish a position empirically…the other two being practical significance and replicability” (McLean & Ernest, 1998, pp. 17-18). The effect size, which is the primary indicator of practical significance, was between small and medium for each of the regression models and variables except for the third model which included graduate students. The effect size for that particular model was large. Replicability is another determining factor in determining the value of the study. For the purposes of this research, the study was not replicated but a similar one could be done so easily at a future date.

Student involvement in co-curricular programs and activities is widely known to positively relate to student success and retention (Astin, 1977, 1984, 1993, 1999; Pascarella & Terenzini, 1991; Kuh, Schuh, Whitt, et al., 1991; Kuh, 2009). Students who are actively engaged in co-curricular programs and activities such as student organizations, intercollegiate athletics, intramurals, fraternities and sororities, and student government have higher grade point averages and are more likely to graduate from college (Astin, 1993). However, the results of this study did not affirm the prior findings related to this topic nor do the results of this study imply any causation. It cannot be argued through the results of this study that involvement in co-curricular activities causes lower grades. Rather it can simply be stated that there was a negative statistical correlation between the two variables.
These results would be of interest to Student Affairs practitioners who work with student organization leaders in particular as the result is surprising given the existing literature on the topic. This outcome may be attributed to the sample selected for this study as all students participating served as organizational leaders and not simply members. Much of the prior research on this topic, including Astin’s work related to the benefits of membership in student organizations and participation in activities versus leadership of those groups. Student leaders are a unique population of students and may already have higher grade point averages going into their leadership roles. As their commitments to their leadership roles increase in terms of the amount of time spent, it may be possible that their grade point averages become slightly lower. What is clear is that the population studied in this research already had high grade point averages, with an average of above a 3.25, in relationship to what the researcher would have expected from the general student population.

Conversely, the finding related to time spent in online social networking supports another study that was based upon similar variables. Karpinski and Duberstein (2009) study results indicated that Facebook users in particular had lower grade point averages and were spending less time per week studying than non-Facebook users. Specifically, “for hours spent studying per week, FB users reported studying in the 1-5 h/week range and the nonusers in the 11-15 h/week range” (p. 1242). The current research showed a statistically significant, negative correlation between online social networking and grade point average implying that as the number of hours students were engaged in online social networking increased, the lower their reported grade point average was.
While this finding also has low practical significance, it adds to a growing body of evidence that indicates that online social networking may have an overall negative impact on grade point average. As colleges and universities desire to leverage online social networking as a medium to disseminate information to students, the quality of the time spent by students engaged in online social networking will become as important as the quantity of time spent by students. That is to say, the manner in which students are using online social networking to find information and develop peer networks may be as important as the amount of time spent on the activity itself.

Studying and doing coursework was positively correlated with grade point average in this study. This finding was very consistent with the existing literature and should not be a surprise to anyone who works with college students. The more time spent by students preparing for class, reviewing course materials, and working on course projects, the higher likelihood for academic achievement as measured by grade point average. The number of hours spent by students in this study engaged in studying and doing coursework was over two times the amount of time spent engaged in online social networking and co-curricular involvement. College and university administrators can safely encourage students to spend time studying and doing homework.

The finding of a negative correlation between work for pay off-campus and grade point average was also in keeping with the existing literature. As with all of the other variables, this finding was statistically but not practically significant. Astin strongly argued that work for pay off-campus was detrimental to student success. “Working a full-time job off campus is associated with a pattern of outcomes that is uniformly negative…holding a part-time job off campus has a pattern of effects that is almost
identical to the pattern associated with working full-time” (Astin, 1993, pp. 387-388). The finding of this study supports the earlier finding that work for pay off-campus does not support academic achievement as measured by grade point average. This finding is particularly interesting for college and university administrators who have the opportunity to create on-campus jobs for students as there does appear to be a positive correlation between on-campus work and grade point average. Lastly, as the financial pressures on students attending colleges and universities increase, it will become increasingly difficult for institutions to offer a sufficient number of on-campus work opportunities.

Female students in this study had higher grade point averages as did Asian/Asian-American and Caucasian students. Graduate students had the highest grade point averages of all the students in the study which is not a surprising result given that graduate study requires the maintenance of at least a 3.0 grade point average. Aside from graduate students, freshman and sophomore students had the highest grade point averages in the study although both represent a fairly small proportion of the population in the study and likewise are least likely to be in leadership roles within student organizations. None of the results from the categorical variables offered insight that was not previously known from the literature.

**Implications for Further Research**

Several opportunities exist for additional research related to the topics presented in this study. First, the negative correlation between co-curricular student involvement and grade point average was unexpected. This same study could be easily replicated at a future date with a similar sample of students and the results compared. Additionally, a
random sample of all students attending the same institution could be drawn and then compared with the group of involved students. Other studies comparing student leaders with student organization members could discern whether there are true differences between how these two populations of students use their time and how that might impact grade point average. Data could also be collected from different institution types to find if there is a relationship between the institution type, hours of involvement and grade point average. Each of these new studies would make for interesting contributions to the literature.

The presence of graduate students in future studies should also be considered. It is hypothesized that graduate students have unique contributions and attributes that may in fact create different results in a study. Researchers should consider whether to include or exclude graduate students in future research related to this topic prior to the research being conducted.

Additional research could be conducted using students who are involved in leadership roles in student organizations as the control group with a comparison group of students who are not involved in student organizations. The literature would support a hypothesis that the student organization leaders’ grade point averages would be higher overall than those who are not involved. It may also be true that the grades of student organization leaders is also higher than those who are simply members of the organization.

Our collective understanding of online social networking is still evolving and, in particular, the ways that colleges and universities use these technologies is emerging. Additional study related to how students are using online social networks would be of
value in addition to further study on the amount of time students spend engaged in this activity. The self-reported number of hours spent per week by students in this study was low in the estimation of the researcher. The opportunity for students to be engaged in online social networking through mobile devices is becoming more prevalent, so one might expect there to be an increase in the time spent by students engaged in this activity. Online social networking cannot be said to cause lower grade point averages, however, the results of study confirms prior research on this topic. There is still room for additional research on this topic as the social networking landscape continues to evolve.

Surprisingly there was no statistically significant correlation related to student residential status in this study. Much of the literature supports the notion that living on campus is positively associated with grade point average. In the case of this particular study there was no significant correlation, either statistically or practically, for living on campus or living off campus. This result creates an opportunity for further research related to on-campus living and leadership in student organizations. It may be possible that the leadership role may replace whatever impact living on campus has for students. Additionally, the demographics of this particular population may have contributed to this result in that only 17% of those surveyed were residential students. Finally, a large proportion of the population in the sample was graduate students and upper-division students who are no longer required to live on campus. It is possible that the positive impact of their residential experience was already accounted for in their current grade point average. Additional research could be conducted with a sample which included a larger proportion of residential students to assess the impact of that experience on grade point average.
Lastly, as the financial pressures on students attending colleges and universities increase, it will become increasingly difficult for institutions to offer a sufficient number of on-campus work opportunities. Additional research on ways to make off-campus employment have a more positive impact on academic achievement could be valuable.

**Conclusion**

This quantitative study examined the relationships between academic achievement as measured by self-reported grade point average and the time spent by students engaged in co-curricular involvement, online social networking, studying and doing coursework, work for pay, gender, ethnicity, student residence, and class standing. Astin’s involvement theory provided the theoretical framework for the study. This theory hypothesizes that students are more successful as they are able to commit time and energy to educationally purposeful activities. The literature supports this theory as it relates to co-curricular student involvement and work for pay on-campus.

Based upon the results from the 613 participants in this study, co-curricular student involvement, online social networking, and work for pay off-campus were negatively correlated with student academic achievement as measured by grade point average. Additionally, studying and doing coursework was positively correlated with student academic achievement. Demographic results indicated female students and Asian/Asian American and Caucasian students and graduate students had higher grade point averages.

Additional analysis removing graduate students from the survey sample showed little difference in the overall value of the regression models to predict the variance in grade point average. Co-curricular involvement, online social networking and work for
pay off-campus continued to negatively correlate to grade point average while studying and doing coursework positively correlated. Undergraduate students spent more time engaged in these activities, except studying and doing coursework, than the averages spent by those in the sample that included graduate students.

This research study is concluded with results that both support and conflict with existing literature related to these topics. Recommendations for further research include additional surveying of student leaders related to the time spent on their involvement in comparison to students who are members in student organizations and students who are not involved. Lastly, additional research related to how students are engaging in online social networking, and not simply the amount of time spent but also the ways in which they are using online social networking, may provide further insight into its value as an educational tool.
References


Madge, C., Meek, J., Wellens, J. & Hooley, T. (2009) Facebook, social integration and informal learning at university: It is more for socialising and talking to friends about work than for actually doing work. Learning, Media and Technology, 34, 141 – 155. doi:10.1080/17439880902923606


Appendices
## 2. Student Use of Time

This set of questions asks about the kinds of things you do outside of class and how much time you think you spend on each activity.

1. During a typical week in the fall 2010 semester, how many hours a week did you spend doing the following activities?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studying and doing coursework</td>
<td></td>
</tr>
<tr>
<td>Working on campus</td>
<td></td>
</tr>
<tr>
<td>Working off campus</td>
<td></td>
</tr>
<tr>
<td>Participating in student organization activities</td>
<td></td>
</tr>
<tr>
<td>Attending campus events</td>
<td></td>
</tr>
<tr>
<td>Online social networking (Facebook, Twitter, etc.)</td>
<td></td>
</tr>
</tbody>
</table>
Appendix A: Continued

3. Demographic Questions

These items are to help us better understand the students that are answering the survey.

1. What is your gender?
   - Female
   - Male
   - Other (please specify)

2. What is your ethnicity?
   - African American
   - Asian American
   - Caucasian
   - Hispanic/Latino/Latina
   - Native American
   - Multi-racial
   - Other (please specify)

3. Where did you live in the fall 2010 semester?
   - On-campus
   - Off-campus

4. What was your class standing at the end of the fall 2010 semester?
   - Freshman
   - Sophomore
   - Junior
   - Senior
   - Graduate Student
   - Other (please specify)
5. What was your cumulative grade point average at the end of the fall 2010 semester?

- Above 3.75 - 4.00
- Above 3.50 - 3.74
- Above 3.25 - 3.49
- Above 3.00 - 3.24
- Above 2.75 - 2.99
- Above 2.50 - 2.74
- Above 2.25 - 2.49
- Above 2.00 - 2.24
- Above 1.75 - 1.99
- Above 1.50 - 1.74
- Above 1.25 - 1.49
- Above 1.00 - 1.24
- Below 1.00
Appendix B: Email Invitation to Participants

Dear Student Organization Leader,

I am contacting you to ask if you would be willing to complete a brief survey for my doctoral research at the University of South Florida. The purpose of the study is to understand the how the various ways students spend their time impact academic achievement.

I understand that the role you have on campus as a student organization leader is important and I also understand that your role takes a considerable amount of time and effort. Your participation in this study will help me to better understand how your co-curricular activity among other types of activities such as online social networking impacts your grade point average.

If you are willing to participate in this voluntary study, you will be asked to complete a brief online survey consisting of 10 questions. Previous participants reported spending less than 5 minutes completing the survey.

This unfunded research is considered to be a minimal risk and regrettably no compensation is available to pay you for your participation. However, those completing the survey can register for one of five $25 Barnes & Noble gift cards which will be given at random to survey participants. This research will be anonymous and the survey results will be reported in an integrative manner. Email addresses for those registering for the gift cards will not be associated with your survey responses.

If you have any questions or concerns about this study, please contact Regina Young Hyatt at ryhyatt@mail.usf.edu. Additionally, if you have questions about your rights as a participant in this study, general questions, or have concerns or issues you want to discuss with someone outside the research, please contact the Division of Research Integrity and Compliance of the University of South Florida at (813) 974-9343. The eIRB ID Number for this study, titled “The influence of time spent by students on their academic achievement” is Pro00003098.

I appreciate your time and consideration of participating in this study.

By clicking the link below to go directly to the survey instrument, you are hereby granting informed consent to participate in this research study.

http://www.surveymonkey.com/s/StudentUseofTime
Appendix C: Email Reminder 1 to Participants

Dear Student Organization Leader,

On Monday you received an email requesting your participation in my doctoral research regarding how student's use their time. If you have completed the survey, thank you for your participation. If you have not completed the survey, your participation is still needed.

Those completing the survey can register for one of five $25 Barnes & Noble gift cards which will be given at random to survey participants. If you are willing to participate in this voluntary study, you will be asked to complete a brief online survey consisting of 10 questions. Previous participants reported spending less than 5 minutes completing the survey.

I appreciate your time and consideration of participating in this study.

By clicking the link below to go directly to the survey instrument, you are hereby granting informed consent to participate in this research study.

http://www.surveymonkey.com/s/StudentUseofTime
Appendix D: Email Reminder 2 to Participants

Dear Student Organization Leader,

Last week you received an email requesting your participation in my doctoral research regarding how students use their time. If you have completed the survey, thank you for your participation. If you have not completed the survey, your participation is still needed.

Those completing the survey can register for one of five $25 Barnes & Noble gift cards which will be given at random to survey participants. If you are willing to participate in this voluntary study, you will be asked to complete a brief online survey consisting of 10 questions. Previous participants reported spending less than 5 minutes completing the survey.

I appreciate your time and consideration of participating in this study.

By clicking the link below to go directly to the survey instrument, you are hereby granting informed consent to participate in this research study.

http://www.surveymonkey.com/s/StudentUseofTime
Appendix E: Study Participation Postcards

Dear Student Organization Leader:

Your participation in a research study related to how you use your time is requested.

This five minute survey will be used to gather data for doctoral research about the ways students’ use of time impacts academic achievement.

Study Link

http://www.surveymonkey.com/s/StudentUseofTime

Participation in this study is voluntary. The survey is available beginning February 14 through February 25. Any questions regarding this study should be directed to Regina Hyatt at ryhyatt@usf.edu