2012

Facebook usage and academic achievement of high school students: a quantitative analysis

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FACEBOOK USAGE AND ACADEMIC ACHIEVEMENT

OF HIGH SCHOOL STUDENTS: A QUANTITATIVE ANALYSIS

A dissertation submitted in partial satisfaction

of the requirements for the degree of

Doctor of Educational Technology

by

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August, 2012

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This dissertation, written by

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DEDICATION

This dissertation is dedicated to my wonderful friends and family who continuously

support my goals and encourage me to reach for the stars.

ACKNOWLEDGEMENTS

Trust in the Lord with all your heart, and lean not on your own understanding; In all your

ways acknowledge Him, and he shall direct your paths.

Proverbs 3:5,6

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ABSTRACT

Online social networking has become an integral part of the lives of America's teenagers with 73% of teens reporting that they use as social networking site such as Facebook daily (Lenhart, Purcell, Smith, & Zickuhr, 2010). Some recent studies have shown a negative relationship between Facebook use and academic achievement (Karpinski & Duberstein, 2009), while other studies have shown no relationship between Facebook use and academic achievement (Pasek, More, & Hargittaai, 2009). Thus, parents, teachers, and administrators remain uncertain of the effects, if any, of students using Facebook.

This study examined Facebook usage and academic achievement of high school students at Dollarway High School. 72 students completed two surveys–the Facebook Intensity Scale (FBI) and ENGAGE for grades 10 to 12. The FBI measures the amount of time spent a student spends on Facebook, the extent of a student's participation on Facebook, a student's emotional connection to Facebook, and a student's integration of Facebook into his/her daily life. ENGAGE measures 10 psychosocial behaviors that affect academic achievement of students including academic discipline, academic self-confidence, commitment to college, communication skills, general determination, goal striving, social activity, social connection, steadiness, and study skills. Students' GPA information was also collected.

Results of the study showed a negative relationship between intensity of Facebook use and GPA, a negative relationship between intensity of Facebook use and goal striving, and a negative relationship between intensity of Facebook use and steadiness. These findings indicate that a negative relationship does exist among

Facebook use and academic achievement for some populations. More research is needed

to determine why these negative relationships exist in some populations and not in others.

Chapter 1: Introduction

Online social networking, the use of the Internet to connect with people, has increased dramatically since 2008. According to the September 2009 Nielsen Company Report, Internet users spent 17 percent of their time online visiting social networking websites (Nielsen Company, 2009). This is three times the amount of time spent visiting social networking websites in 2008. Jon Gibs, Vice President of Nielsen's Online Division, suggested that this increase indicated a dramatic change in the way people view the purpose of the Internet. Gibs stated that "while video and text content remain central to the Web experience–the desire of online consumers to connect, communicate and share is increasingly driving the medium's growth" (Nielsen Company, 2009, p. 1).

People use online social networking websites for a variety of reasons, including searching for friends, jobs, and relationships. One of the most popular websites for online social networking is called Facebook. Launched in 2004 at Harvard University, Facebook is the fastest growing online social utility with more than 800 million users worldwide ("Facebook IPO," 2012, para. 4). The initial purpose of the website was to connect students at Harvard University, but this purpose was soon expanded to connect high school students, college students, and adults worldwide.

With its expanded purposes, it is no surprise that Facebook has become a popular website among American teenagers. A 2009 survey conducted by the Pew Internet & American Life Project showed that 73% of all online American young people between the ages of 12 and 17 used social networking websites for communication (Lenhart, Madden, Smith, & Macgill, 2010). For many of these teens, logging onto Facebook is their first activity when they wake up and their last activity before they go to sleep.

Researcher Dana Boyd described Facebook as an extension of a modern teenager's daily socialization routine:

> For American teenagers, social network sites became a social hangout space, not unlike the malls in which I grew up or the dance halls of yesteryears. This was a place to gather with friends from school and church when in-person encounters were not viable. . . . Social network sites became critically important to them because this was where they sat and gossiped, jockeyed for status, and functioned as digital flaneurs. They used these tools to see and be seen. (Boyd, 2009, para. 29-30)

For American teenagers, Facebook is now simply another place to commune with friends, gain popularity, and catch up on the latest news.

As teenagers socialize, connect, and express themselves through Facebook, many parents question the effects of their children spending so much time online. Responsible parents encourage their children to participate in activities that they deem safe and productive. These same parents seek to discourage their children from pursuing activities that they view as harmful. Yet, it can be difficult for a parent to truly understand the effects of online social networking. Examine the hypothetical plight of Mr. and Mrs. Davidson.

Mr. and Mrs. Davidson have two teenage children–Jack, aged 16 years, and Maria, aged 15 years. Each child has his/her own personal laptop computer and spends most of his or her time online visiting Facebook. Jack is a popular football player who enjoys uploading game photos, taking personality quizzes, and engaging in friendly banter with rival football players on his Facebook page. Maria is a popular cheerleader who enjoys uploading photos of the latest makeup trends, posting updates of her current mood, and professing love for her boyfriend on her Facebook page. Both siblings have busy schedules and active social lives both online and offline. Both siblings are enrolled

in advanced placement courses and have earned the distinction of Honor Roll Recipient throughout their educational careers. Yet, as a new school year begins, Jack's grades begin to fall while Maria continues to earn straight As.

Mr. and Mrs. Davidson are deeply concerned about their son's progress in school. They schedule appointments with his teachers, examine his study habits, and talk to Jack in hopes of discovering a solution to his academic decline. While brainstorming for a solution, Mr. Davidson recalls a recent magazine article describing the negative effects of online social networking (Hamilton, 2009). According to the article, researchers discovered that college students at Ohio State University who used Facebook had significantly lower grade point averages than their counterparts who did not use Facebook (Karpinski & Duberstein, 2009). Mr. Davidson concludes that his son's use of Facebook is contributing to the decline of his grades. Mrs. Davidson strongly disagrees with her husband, citing a different article that criticizes and contradicts the negative results of the Ohio State University study. According to this article, researchers at Northwestern University found no correlation between bad grades and the use of Facebook. On the contrary, the researchers discovered that Facebook usage is more common among students with higher grades (Pasek, More, & Hargittai, 2009). Mrs. Davidson states that while their son may now serve as an example of Facebook users who earn bad grades, their daughter, Maria, is the perfect counterexample for the claim that students who use Facebook earn better grades than students who do not use Facebook as much. The couple wants to do what is best for both of their children, but they do not truly understand the effects of online social networking.

The plight of Mr. and Mrs. Davidson is common in many American households today as more and more teens delve into the world of online social networking. Parents, administrators, and teachers alike ponder the effects of online social networking, if any, on the academic achievement of today's teens.

Purpose of This Study

The purpose of this study was to examine the relationship between Facebook usage and the academic achievement of high school students. It also attempted to determine whether a relationship exists between Facebook usage and psychosocial behaviors of academic success, including academic discipline, academic self-confidence, commitment to college, communication skills, general determination, goal striving, social activity, social connection, steadiness, and study skills.

Research Questions

With the rise in popularity of Facebook among online teenagers and the growing concern for increased student achievement in American schools, this study sought to answer the following research questions:

1. Is Facebook usage related to grade point average (GPA) for high school students?

2. Is Facebook usage related to academic discipline for high school students?

3. Is Facebook usage related to academic self-confidence for high school students?

4. Is Facebook usage related to commitment to college for high school students?

5. Is Facebook usage related to communication skills for high school students?

6. Is Facebook usage related to general determination for high school students?

7. Is Facebook usage related to goal striving for high school students?

8. Is Facebook usage related to social activity for high school students?

9. Is Facebook usage related to social connection for high school students?

10. Is Facebook usage related to steadiness for high school students?

11. Is Facebook usage related to study skills for high school students?

Significance of Study

The significance of this study is that it continued research of a new phenomenon–the rise of online social networking among American students. On May 7, 2009, researchers Aryn C. Karpinski and Adam Duberstein (2009) released a study of 219 undergraduate and graduate students at Ohio State University. According to the study, students who used Facebook earned lower grades than their counterparts who did not use the social networking website. Facebook users reported GPAs ranging from 3.0-3.5, while non-users reported GPAs ranging from 3.5-4.0. Additionally, students who did not use Facebook spent more time studying than those who did use the social networking site (Karpinski, 2009). When the Karpinski and Duberstein study was released, media outlets sensationalized the study, alerting the public to the negative effects of using Facebook. Television, radio, newspapers, magazines, and the Internet featured stories warning parents to limit their children's use of Facebook.

The wide media coverage of the Ohio State University study sparked controversy as many people questioned Karpinski and Duberstein's research methods and results. The controversy motivated researchers Josh Pasek, Eian More, and Eszter Hargittai (2009) to conduct their own study of the relationship between Facebook and academic performance. These researchers attempted to replicate Karpinski and Duberstein's study

by comparing a large sample of 1,000 undergraduate students from the University of Illinois at Chicago, a national sample of 14 to 22 year olds, and a panel of American youth aged 14 to 23. The results of this study greatly differed from the results of Karpinski and Duberstein's study. According to Pasek et al. (2009), there was no "robust negative relationship between Facebook use and grades. Indeed, if anything, Facebook use is more common among individuals with higher grades" (para. 1). The results of the University of Illinois study are a clear contradiction of the results of the Ohio University study.

These two contradictory studies of the relationship between Facebook usage and GPA signal a need for more research. Karpinski acknowledged that her research had limitations and was exploratory in nature. "Once people start doing more and more research in this area, we'll see a pattern develop" (cited in Young, 2009, para. 5). Hargittai agreed, stating, "We need more research with more nuanced data to better understand how social networking usage may relate to academic performance" (cited in Carter, 2009, para. 19). Although these two researchers found different results, they agreed that more research is needed to fully understand what type of relationship, if any, exists between Facebook usage and academic achievement.

This study was the next logical step of inquiry into the relationship between student use of Facebook and academic achievement. This study sought to form a better understanding of the relationship between Facebook usage and academic achievement by focusing on high school students instead of university students. This study also sought to form a better understanding of the relationship between Facebook usage and academic achievement by also focusing on psychosocial behaviors that affect the academic success

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of high school students. Lastly, this study sought to form a better understanding of the relationship between Facebook usage and academic achievement by seeking information beyond time spent on Facebook, including students' integration of Facebook in their daily lives and students' emotional connection to Facebook.

Limitations

This study had the following limitations:

1. The researcher decided to use a convenience sample of high school students in an urban city in Arkansas. Thus, the findings of the study cannot be generalized to areas outside of this city and state.

2. The high school students in the study were enrolled in a public institution. Students enrolled in a private institution may possess different characteristics than students enrolled in a public institution. Thus, high school students attending private institutions are not represented by the sample population.

3. The sample population was selected from a school with a 93% African American population. Students enrolled in educational settings with a different racial makeup may possess different characteristics than those of the sample population and therefore will not be represented by the sample population.

4. The sample population was selected from a city with a 25.5% poverty rate. Students living in cities with less or greater poverty may possess different characteristics than those of the sample population and therefore will not be represented by the sample population.

Assumptions

This study includes the following assumptions:

1. The selected high school students responded to the Facebook Intensity Survey (Appendix A) and ENGAGE™ survey accurately and honestly.

2. The data collected measured intensity of Facebook usage, academic achievement, and the psychosocial behaviors of academic discipline, academic self-confidence, commitment to college, communication skills, general determination, goal striving, social activity, social connection, steadiness, and study skills.

3. The interpretation of the data accurately describes the characteristics of the high school students.

Theoretical Perspective

Social capital theory was used to form a theoretical perspective for studying the relationship between Facebook usage and the academic achievement of high school students. The term *social capital* was introduced as a component of sociological theory in education by James S. Coleman in 1988. According to Coleman (1988), social capital is a productive resource for individuals created through their interactions and relationships with others. Coleman used the concept of social capital to describe the impact of parent-child relationships and community-child relationships on the academic achievement of children in public and private schools. In his study of 4,000 teenagers, Coleman found that students who maintained strong, supportive, and active relationships with their parents and/or community were less likely to drop out of high school than students without these relationships. These results demonstrated the profound effect that social capital (relationships) has on human capital (education).

Social capital theory suggests that "just as physical capital and human capital facilitate productive activity, social capital does as well" (Coleman, 1988, p. 101). As applied to this study, social capital theory holds that Facebook usage may influence the academic achievement of high school students because online social networking builds social capital, thus providing students with the strong, supportive, and active relationships they require to achieve academic success.

Overview of Methodology

This study addressed the relationship between Facebook usage and academic achievement among high school students and the relationship between Facebook usage and the psychosocial behaviors that affect the academic success of high school students. A quantitative survey design was used. In order to test social capital theory, survey data was collected from 72 students at Dollarway High School. This data was used to explain how the intensity of Facebook usage relates to GPA.

The survey data was also used to explain how the intensity of Facebook usage relates to the psychosocial behaviors of academic discipline, academic self-confidence, commitment to college, communication skills, general determination, goal striving, social activity, social connection, steadiness, and study skills. By collecting this quantitative data, the researcher gained a better understanding of the relationship between intensity of Facebook usage and academic achievement and the relationship between intensity of Facebook usage and psychosocial behaviors that affect the academic success of high school students.

Definition of Terms

Existing research about social capital and academic achievement provided the foundation for this study. In addition, literature about the use of technology to enhance social capital provided further support. Below is a list of terms central to the areas of focus in this study. They are grouped into the main categories of this research: social capital, academic achievement, and technology.

Social Capital. Social capital terms that appear in this study include:

- *Social capital* refers to resources that are obtained through relationships with others (Coleman, 1988).

- *Bonding social capital*, also known as *strong ties*, refers to beneficial relationships among family and friends that produce a strong emotional connection and result in emotional support (Granovetter, 1982).

- *Bridging social capital*, also known as *weak ties*, refers to beneficial relationships that are not based upon strong emotional ties. However, these relationships provide individuals with access to new information otherwise unknown by their close family and friends (Granovetter, 1982).

- *Flow* is defined as "a state in which people are so involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it" (Csikszentmihalyi, 2009, p. 4)

- *Network capital* refers to "relations with friends, neighbors, relatives, and workmates that significantly provide companionship, emotional aid, goods

and services, information, and a sense of belonging" (as quoted in Wellman, Haase, Witte, & Hampton, 2001, p. 437).

- *Participatory capital* refers to "involvement in politics and voluntary organizations that affords opportunities for people to bond, create joint accomplishments, and aggregate and articulate their demands and desires a concept enshrined in the American heritage by do Tocqueville" (as quoted in Wellman et al., 2001, p. 437).

- *Community commitment* refers to "social capital that consists of more than going through the motions of interpersonal interaction and organizational involvement. When people have a strong attitude toward community–have motivated, responsible sense of belonging–they will mobilize their social capital more willingly and effectively" (as quoted in Wellman et al., 2001, p. 437).

Academic Achievement. Academic achievement terms that appear in this study include:

- *Grade point average*, also known as *GPA*, is a "measure of scholastic attainment computed by dividing the total number of grade points received by the total number of credits or hours of course work taken" ("Grade point average," 2011).

- *ENGAGE™*, formerly known as *Student Readiness Inventory* or *SRI*, refers to a test that measures academic and psychosocial behaviors of students including motivation, social engagement, and self-regulation (American

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College Testing (ACT), 2007, 2008; Allen, Robbins, & Sawyer, 2010;

Kappler, 2010).

- *Motivation* refers to "personal characteristics that help students succeed academically by focusing and maintaining energies on goal-directed activities" (ACT, 2011b, p. 1).

- *Social engagement* refers to "interpersonal factors that influence students' successful integration into their environment" (ACT, 2011a, p. 1).

- *Self-regulation* refers to "the thinking process and emotional responses of students that govern how well they monitor, regulate, and control their behavior related to school and learning" (ACT, 2011b, p. 1).

- *Psychosocial factors*, also known as *PSFs*, refer to psychological and social behaviors that are predictive of academic achievement (Robbins et al., 2004).

Technology. Technology terms that appear in this study include:

- *Internet* refers to "a vast computer network linking smaller computer networks worldwide (usually preceded by "the"). The Internet includes commercial, educational, governmental, and other networks, all of which use the same set of communications protocols" ("Internet," 2011).

- *Social networking* refers to communication activities that enable a person to increase their social contacts by forming personal and professional relationships with others (Carter, 2005).

- *Social networking sites*, also known as *SNSs*, refers to web based services that allow users to create profiles, communicate with others, list their connections

to others, and share this information in a public or semi-public format (Boyd & Ellison, 2007).

- *Facebook* refers to a popular online tool used for social networking that was launched in 2004 (Facebook, 2011a).

Organization of the Study

This dissertation is organized into five chapters. Chapter 1 discussed the background, purpose, significance, methodology, limitations, and assumptions of the study. It also featured research questions and definitions of the key terms in the study.

Chapter 2 reviews the literature of topics relative to the study including online social networking, social capital, and student achievement. The methodology of the study is presented in Chapter 3 and includes information about research design, sample selection, collection of data, and analysis of data. Chapter 4 presents the results of the study. The dissertation concludes with Chapter 5, a discussion of the study and recommendations for future research.

Chapter 2: Literature Review

This chapter contains a review of the pertinent literature on social capital, academic achievement, online social networking, and the psychosocial factors that predict academic achievement. The main goals of this chapter are to define social capital and demonstrate how it relates to academic achievement of adolescents, to explore the current state of research of online social networking and demonstrate how it relates to academic achievement, and to describe the current state of research of psychosocial factors that predict academic achievement and demonstrate how these factors relate to social capital. After reviewing the pertinent literature, I will demonstrate how the research involving the effects of online social networking on social capital is closely related to the effects of social capital on academic achievement and psychosocial behaviors and thus provide the motivation for the current study.

Social Capital Defined

Social capital is defined as "social relationships from which an individual is potentially able to derive institutional support, particularly support that includes the delivery of knowledge based resources" (Stanton-Salazar & Dornbusch, 1995, p. 119). Social capital, in the abstract sense, is a neutral resource. However, it can be used to produce or reproduce inequality in a society (Bourdieu, 1986). French Sociologist Pierre Bourdieu described social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (Bourdieu, 1986, p. 248). Those who belong to the durable network possess social capital that gives them an advantage over those who do not belong. Class, status, and reputation can all affect an individual's

access to a durable network. Thus, although social capital is a neutral resource, it can

lead to negative results by initiating or duplicating inequality within a society (Bourdieu,

1986).

The neutrality of social capital is further described by sociologist James Coleman

(1988):

> [Social Capital] is not a single entity but a variety of different entities, with two
> elements in common: they all consist of some aspect of social structures, and they
> facilitate certain actions of actors-whether persons or corporate actors–within the
> structure. Like other forms of capital, social capital is productive, making
> possible the achievement of certain ends that in its absence would not be possible.
> Like physical capital and human capital, social capital is not completely fungible
> but may be specific to certain activities. A given form of social capital that is
> valuable in facilitating certain actions may be useless or even harmful for others.
> (p. S98)

Coleman identified three forms of social capital as obligations and expectations,

information flow capability, and norms accompanied by sanctions (1988). The first form,

obligations and expectations, is dependent upon the level of trust within the social group.

Individuals within the social environment must trust that obligations will be upheld and

repaid. For example, if individual A does something for individual B, then A expects B

to return the favor in the future. Meanwhile, individual B feels an obligation to return

this favor. There must be mutual trust within the social environment for this form of

social capital to exist. The second form, information flow capability, is dependent upon

the sharing of information between individuals within a social environment. Shared

information often comes from a social relationship that is maintained for a different

purpose. For example, an individual who does not watch the news or read the newspaper

can remain informed about current events by maintaining a relationship with friends,

family members, or a spouse who closely follow the news. The third form of social

capital, norms accompanied by sanctions, depends on a standard or model of behavior that is enforced through reward and punishment. For example, an individual can walk outside at night without fear of his/her safety in a social environment that prevents crime through norms and sanctions (Coleman, 1988).

Since Coleman's introduction of the three forms of social capital into educational literature, many researchers have analyzed the concept of social capital and published their results. W. E. Baker defined social capital as "a resource that actors derive from specific social structures and then use to pursue their interests; it is created by changes in the relationship among actors" (Baker, 1990, p. 619). M. Schiff provided a more extensive definition, describing the concept as "the set of elements of the social structure that affects relations among people and are inputs or arguments of the production and/or utility function" (Schiff, 1992, p. 161). R. S. Burt provided a simpler definition of social capital as "friends, colleagues, and more general contacts through whom you receive opportunities to use your financial and human capital" (Burt, 1992, p. 9). Alejandro Portes combined all of these definitions to form a consensus of the definition of social capital as "the ability of actors to secure benefits by virtue of membership in social networks or other social structures" (Portes, 1998, p. 6). Portes also defined the three basic functions of social capital as "(a) a source of social control; (b) a source of family support; (c) a source of benefits through extrafamilial networks" (Portes, 1998, p. 9).

Positive Social Capital

The term social capital has gained popularity over the past 30 years, but the concept is not new. The idea "that involvement and participation in groups can have

positive consequences for the individual and the community is a staple notion" in the field of sociology (Portes, 1998, p. 2). The positive consequences of social capital include communities where citizens repay their debts on time, give alms to the poor, donate to charities, and obey traffic laws. These communities exist because people feel obligated to behave in this manner (Portes, 1998, p. 7). Other positive consequences of social capital include communities where wealthy citizens make anonymous endowments to churches, schools, and hospitals, and courageous citizens voluntarily join the military. These consequences exist because citizens feel a strong connection to their community, which is defined as bounded solidarity. These individuals identify with their community and thus support initiatives to improve their community. "Identification with one's own group, sect, or community can be a powerful motivational force" (Portes, 1998, p. 8).

The presence of social capital can be a less costly, non-economic solution to social problems such as teenage pregnancy, low labor force participation, low levels of educational achievement, poverty, and violence (Portes, 1998; Putnam, 1993). Solving social problems requires the cooperation of a community. "Working together is easier in a community blessed with a substantial stock of social capital" (Putnam, 1993, pp. 35-36). Research has shown a correlation between social capital and health (Putnam, 2000, p. 328). In his book, *Bowling Alone*, Robert Putnam stated, "if one wanted to improve one's health, moving to a high-social capital state would do almost as much good as quitting smoking" (Putnam, 2000, p. 328). The book's website, www.bowlingalone.com, stated that "joining one group cuts in half your odds of dying next year."

Negative Social Capital

The term capital implies value. While social capital has the ability to increase the value of a society, it also has the ability to devalue a society.

> Sociability cuts both ways. While it can be the source of public goods, such as those celebrated by Coleman, Loury, and others, it can also lead to public "bads." Mafia families, prostitution and gambling rings and youth gangs offer so many examples of how embeddedness in social structures can be turned to less than socially desirable ends. (Portes, 1998, p. 18)

One negative aspect of social capital is the exclusion of outsiders. Waldinger (1995) described how bounded solidarity can produce social capital that leads to economic advances for a particular group while blocking economic advances of other groups. This is true of the White ethnics, i.e., descendants of Italian, Irish, and Polish immigrants in New York, who have gained control over fire and police unions as well as construction trades. This is also true of Korean immigrants who control businesses in several East Coast cities, Cuban immigrants who monopolize businesses in Miami, and Jewish merchants who control the diamond trade in New York. The success of these businesses strongly depends on the social capital inherent in the relationships within these ethnic groups. However, "the same social relations that . . . enhance the ease and efficiency of economic exchanges among community members implicitly restrict outsiders" (Waldinger, 1995, p. 557).

Another negative aspect of social capital is also a product of the bounded solidarity among members in a community. Portes (1998) described how entrepreneurial success can be limited in these types of communities because many members refuse to contribute to the community and instead reap the benefits of others.

> Thus, cozy intergroup relations of the kind found in highly solidarity communities can give rise to a gigantic free-riding problem, as less diligent members enforce

on the more successful all kinds of demands backed by a shared normative structure. For claimants, their social capital consists precisely of privileged access to the resources of fellow members. (Portes, 1998, p. 16)

A third negative aspect of social capital gained through bounded solidarity is conformity. "The level of social control in such settings is so strong and also quite restrictive of personal freedoms, which is the reason why the young and the more independent-minded have always left" (Portes, 1998, p. 16). Coleman (1988) described social capital's ability to constrain activities as often preventing young people from "having a good time" or "directing their energy away from other activities" (p. S105) if they are gifted in one area such as athletics.

Portes (1998) detailed a fourth negative aspect of social capital produced by group solidarity in which a community has experienced adversity, and there exists a strong belief among the community that this adversity cannot be overcome.

In these instances, individual success stories undermine group cohesion because the latter is precisely grounded on the alleged impossibility of such occurrences. The result is downward leveling norms that operate to keep members of a downtrodden group in place and force the more ambitious to escape from it. (Portes, 1998, p. 17)

Family Social Capital and Academic Achievement

According to Coleman (1988), social capital within the family and within the community has a great effect upon the academic achievement of students, particularly in reducing the probability of dropping out of high school. Social capital within the family is the relationship between parents and their children. Parents must be physically present and attentive to their children's needs in order to share human capital (education) with their children. The transfer of human capital will not take place without the presence of social capital. Social capital within the community is the relationship among parents in

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the community and the relationship between parents and the institutions of the community. When parents are friends with the parents of their children's friends, there exists intergenerational closure in which the community as a whole monitors and guides the behavior of the children. Communities with intergenerational closure provide children with an environment that breeds cognitive growth and stimulation and prevents students from dropping out. Intergenerational closure is especially high within the community of religious-based schools (Coleman, 1988).

Many researchers have shared Coleman's view that social capital plays a critical role in education. Putnam (2000) found that parental involvement affects the overall educational goals and achievements of children. "When parents are involved in their children's education at home, their children do better in school . . . when parents are involved at school, their children go further in school, and the schools they go to are better" (pp. 303-304). Dika and Singh (2002) described social capital as being historically linked to education with a positive correlation existing between social capital and educational achievement, social capital and educational attainment, and social capital and educational aspirations. Crosnoe (2001) examined the relationship between family and school social capital and found a difference between students with higher levels of family capital and students with lower levels of family capital. Students with higher levels of family capital were more able to benefit from school capital than students with lower levels of family capital. Rosenfeld and Richman (1999) uncovered a similar relationship when studying African American and Hispanic males. Children who experienced strong, close, supportive relationships with their parents were more likely to

seek assistance from other male friends than their counterparts who experienced less supportive relationships with their parents.

School Social Capital and Academic Achievement

Social capital garnered in the school environment plays a critical role in education. When children become of school age, their socialization shifts from the family to the school community of teachers, administrators, and peers (Coleman, 1988). Researchers have classified schools as a direct source of social capital because the school environment promotes social interaction and encourages students to participate in social activities (White & Gager, 2007). These school-sponsored activities allow students to create social capital by providing an intriguing atmosphere for social development away from academics (Feldman & Matjasko, 2005). When students participate in school-sponsored activities, also known as extracurricular activities, they have an opportunity to develop mentoring and coaching relationships with adults from the school or community who are supportive of the students' success inside and outside of the classroom. Extracurricular activities also provide students with a means to interact with peers who share common interests and are encouraged to meet common goals (Feldman & Matjasko, 2005; Lamborn, Brown, Mounts, & Steinberg, 1992). These positive relationships with adults and peers enable students to view their relationships with school more positively (Finn, 1989; Gerber, 1996). Research has shown that students who feel a strong sense of connection to their school exhibit increased academic performance (Hendrix, Sederber, & Miller, 1990).

When students participate in school-sponsored activities, they develop social capital through a supportive network of friends and adults (Feldman & Matjasko, 2005;

McNeal, 1999). School-sponsored activities are those involving structure, adult-supervision, and skill building exercises (White & Gager, 2007). The most common activities for adolescents ages 12 to 18 are those involving sports, school organizations, and fine arts. Other common activities include after-school programs that offer academic assistance, recreation, and enriched learning (Mahoney, Larson, & Eccles, 2005). The social ties created through participation in school-sponsored activities allow adolescents to gain access to resources that may be otherwise unavailable. Students involved in these activities can exchange useful information about standards of behavior, school norms, and other educational resources that enable them to achieve their academic goals (Coleman, 1988). Participation in school-sponsored activities also allows adolescents to develop discipline and time management skills. By applying these skills to their daily routines, the teens are more likely to enhance their educational success (Glanville, Sikkink, & Hernandez, 2008).

Many researchers disagree about the positive relationship between participation in school-sponsored activities and academic achievement. Marsh and Kleitman (2002) reported a negative relationship between participation in school-sponsored activities and academic achievement among adolescents. The more time students spend in organized activities, the less time they spend with their families and with their schoolwork. Thus, the school-sponsored activities may serve as a distraction and adversely affect academic performance (Marsh & Kleitman, 2002). When a student is intensely involved in an extracurricular activity, the student's commitment to the activity competes with the student's commitment to academics, sometimes leading to an adverse effect on academic

performance. Thus moderate participation in extracurricular activities is associated with better academic success than intense participation (Mahoney, Harris, & Eccles, 2006).

Community Social Capital and Academic Achievement

Research has shown that what take place outside of the classroom is just as influential as what takes place inside of the classroom when it comes to academic achievement (Fashola, 2003). Social capital obtained through community activities can lead to greater academic achievement for adolescents through supportive networks of adults and peers who encourage the skills and values that are necessary for educational success (White & Gager, 2007). Community activities that build social capital include programs that promote community service and youth organizations such as 4-H, Boys & Girls Clubs of America, and Girls Inc. (Mahoney et al., 2005). By participating in these activities, students develop positive connections with members of their community who are able to provide resources that can enhance their educational achievement (Israel, Beaulieu, & Hartless, 2001). Participating in these activities also allows students to develop skills that are essential to academic success including organization, planning, and time management (Dotterer, McHale, & Crouter, 2007). Jordan and Nettles (2000) reported that teens who were involved in positive, meaningful, and structured community organizations were more likely to be engaged in their schoolwork and more likely to invest in their education. Thus, participation in community groups positively impacts academic achievement.

Many researchers have viewed participation in community organizations as an influential factor for the academic success of students because it allows students to associate with their peers. Academic performance increases when students belong to a

group that focuses on advanced academic achievement, strong peer connections, and adult role models (Valentine, Cooper, Bettencourt, & Dubois, 2002). Strong peer connections are important because as teens grow older, they choose to spend their time with people who are like themselves. Most adolescents spend large amounts of time with their peers in self-structured leisure activities. Consequently, they develop a support system with their peers by simply *hanging out* (Larson & Verma, 1999). Crosnoe (2001) described the characteristics of a peer group as being influenced by its members. Students who are academically successful have friends who are also academically successful. Eccles and Barber (1999) discovered a difference among adolescents who participated in volunteer or church activities and their counterparts who did not. Youth who participated in community activities had more friends with plans of attending college and fewer friends who participated in risky behaviors such as underage drinking and drug use.

Some researchers have discovered that peer connections do not always benefit academic achievement. Adolescents who participate in low-structured activities are more likely to report negative behaviors from their peers such as staying out past curfew and being apprehended by the police (Mahoney & Stattin, 2000). Eccles and Barber (1999) found that students who participated in team sports had more friends who partied and drank excessively than students who did not participate in team sports. Clearly, peer connections are only beneficial to academic achievement if they also reinforce socially acceptable and legal behaviors.

Decline of Social Capital

Coleman (1988) described social capital as a public good, a quality that results in social capital being used differently than other forms of capital. When a person creates social capital, he/she is often not the benefactor of that social capital. The positive effects of social capital are largely experienced by people other than the creator. In fact, social capital is often present without being recognized. Likewise, it may disappear without acknowledgement. "The result is that most forms of social capital are created or destroyed as by-products of other activities" (Coleman, 1988, p. S118). Putnam (1995, 2000) stated that social capital in American communities has been destroyed as a by-product of the invention of the television. Since the introduction of the television in the 1950s, there has been a steady decline in civic engagement among American citizens. "In 1950 barely 10% of American homes had television sets, but by 1959, 90% did, probably the fastest diffusion of a technological innovation ever recorded" (Putnam, 1995, p. 667). As the number of television sets in homes increased, so did the number of hours spent viewing television. Robinson (1990) reported that the average American watched three hours of television per day, resulting in Americans spending 40% of their free time watching television.

Putnam (1995) reported that television viewing is associated with low social capital because a strong negative correlation exists between television viewing and social trust and television viewing and group membership. Researchers pose several possibilities as to why television viewing destroys social capital. One possibility is time displacement. There are only 24 hours in a day. When people spend the majority of their leisure time watching television, they no longer have the time to participate in social

activities outside of the home. They become *homebodies* who prefer sitting alone in front of a television set to gathering socially with family and friends (Bower 1985; Comstock, 1989; Comstock, Chaffee, Katzman, McCombs, & Robert, 1978; Robinson & Godbey, 1995). Another possibility is a pessimistic outlook on life. Heavy consumers of television often possess a skeptical view of the intentions of others resulting in a pessimistic view of human nature. This pessimistic view discourages socialization (Comstock 1989; Dobb & MacDonald, 1979; Gerbner, Gross, Morgan, & Signorelli, 1980).

Coleman (1988) viewed the decline of social capital as a troublesome occurrence that may result in the decline of human capital. This is because strong families and strong communities are necessary for the passage of human capital from adults to youth. The solution is to find a "substitution of some kind of formal organization for the voluntary and spontaneous social organization that has in the past been the major source of social capital available to the young" (Coleman, 1988, p. S118). Recent research (Resnick, 2001) has suggested that the Internet may provide this solution. "Perhaps, with the aid of technology, it is possible to go beyond bowling together to form even more productive social relations even more conveniently" (Resnick, 2001, p. 4). In fact, some research (Lin, 2001; Wellman, 1999, 2001) has suggested that Putnam may be mistaken about the decline of social capital. He was simply looking in the wrong place:

> What if Putnam is only measuring old forms of community and participation while new forms of communication and organization underneath his radar are connecting people? Some evidence suggests that the observed decline has not led to social isolation but to community becoming embedded in social networks rather than groups and a movement of community relationships from easily observed spaces to less accessible private homes. (Wellman et al., 2001, p. 437)

The Internet allows users to communicate with each other in the privacy of their homes instead of in public spaces such as Elk clubs and bowling leagues. Consequently, there is a possibility that instead of conversing in public places, people are going online where they are chatting one-to-one, exchanging e-mails, learning in newsgroups, and organizing in discussion groups and forums (Kraut et al., 1998; Smith, Drucker, Wellman, & Kraut, 1999).

Social Capital and the Internet

Technological advances over the past decade have provided researchers with new opportunities to study the relationship between social capital and the Internet. Initial research into the effects of Internet use on society presented a positive view, predicting the Internet's ability to restore community ties through virtual spaces where people could commune without the limitations of space and time (Baym, 1997; Sproull & Kiesler, 1991; Wellman, 2001). The relationships formed in these online virtual communities often continue in physical space, thus forming a new type of community that is a mixture of online and offline social interactions (Muller, 1999; Rheingold, 2000). When there are gaps between offline face-to-face communications, online social interactions may help to fill that void (Wellman, 2001). This is especially prevalent in North America, "where people move frequently and sometimes far away; where family, friends, former neighbors, and workmates are separated by many miles; and where the many immigrants keep contact with friends and relatives in their homelands" (Wellman et al., 2001, p. 438).

The Internet has been associated with both increases and decreases in social capital among users. Nie (2001) stated that the Internet was responsible for diminishing

the social capital of individuals. Because there are a limited number of hours in each day,

Internet users are replacing time previously spent on social activities with Internet use.

Consequently, Internet use leads to individuals becoming more socially isolated as they

spend less time engaged in face-to-face social functions with family and friends. Among

those using the Internet more than 10 hours per week, 27.0% report talking to their

friends less on the phone, 16.2% report spending less time with their friends, 14.3%

report spending less time with their family, and 12.8% report spending less time at events

outside the home (Nie & Erbring, 2000). Other research has supported this finding, with

58% of American adults reporting that computers have led people to spend less time with

friends and family and 46% of American adults believing that computers have given

people less free time (National Public Radio, 2000).

This computer-aided social isolation is a symptom of problematic Internet use or

PIU. Beard and Wolf (2001) defined PIU as the "use of the Internet that creates

psychological, social, school, and/or work difficulties in a person's life" (p. 378). PIU

becomes an issue when an Internet user experiences a psychological concept called flow.

When Internet users experience flow, they are transported to "a state in which people are

so involved in an activity that nothing else seems to matter; the experience itself is so

enjoyable that people will do it even at great cost, for the sheer sake of doing it"

(Csikszentmihalyi, 2009, p. 4). There are many qualities that make Internet use

susceptible to the concept of flow, including ease of use, immediate feedback, interactive

concepts, and entertaining activities (Chen, 2006; Hoffman & Novak, 1996). When

Internet users experience flow they lose track of time and ignore other activities in which

they regularly participate, including socializing with friends and family at face-to-face

social functions (Thatcher, Wretschko, & Fridjhon, 2008).

The notion that Internet usage decreases social capital has been criticized by

researchers who claim that Internet usage actually enhances social capital (Wellman,

Haase, Witte, & Hampton, 2001). In 2001, Wellman et al. released a study of the

association between Internet use and three distinct types of social capital:

> 1. *Network capital*: Relations with friends, neighbors, relatives, and workmates
> that significantly provide companionship, emotional aid, goods and services,
> information, and a sense of belonging (Wellman & Frank, 2001).
> 2. *Participatory capital*: Involvement in politics and voluntary organizations that
> affords opportunities for people to bond, create joint accomplishments, and
> aggregate and articulate their demands and desires a concept enshrined in the
> American heritage by de Tocqueville (1835).
> 3. *Community commitment*: Social capital consists of more than going through
> the motions of interpersonal interaction and organizational involvement. When
> people have a strong attitude toward community–have motivated, responsible
> sense of belonging–they will mobilize their social capital more willingly and
> effectively (McAdam, 1982). (As quoted in Wellman et al., 2001, p. 437)

According to this study of 39,211 North American adults (Wellman et al., 2001),

network capital was not decreased by Internet use. Individuals did not increase nor

decrease other forms of communication when using the Internet. Face-to-face and

telephone contact continued and was supplemented by e-mail contact, which resulted in

frequent use of the Internet being associated with more frequent contact with family,

friends, and relatives, regardless of the distance between loved ones.

Similarly, participatory capital was not decreased by Internet use. Individuals did

not decrease their involvement in organizations and politics when using the Internet. On

the contrary, "High Internet use is associated with high participatory involvement in

organizations and politics. The more online participation in organizations and politics,

the more offline participation in organizations and politics" (Wellman et al., 2001, p.

447). The study found no association between Internet use and the third type of capital,

community commitment. Individuals experienced no increase or decrease in feelings of

offline community or offline alienation in relation to their use of the Internet.

Following their study, Wellman et al. (2001) called for future analyses of the

relationship between social capital and the Internet to focus on specific types of activities

that Internet users perform while online and to explore how these specific types of

activities mold into the everyday lives of Internet users and affect their social capital.

Researchers (Ellison, Steinfield, & Lampe, 2007) have answered this call by examining

one specific type of Internet activity performed by many individuals daily–Online Social

Networking.

Definition and History of Social Network Sites

Social networking is defined as communication activities that enable a person to

increase their social contacts by forming personal and professional relationships with

others (Carter, 2005). With the development of the Internet, individuals are now able to

complete the process of social networking online by using social network sites. Social

network sites (SNS) are

> web-based services that allow individuals to (1) construct a public or semi-public
> profile within a bounded system, (2) articulate a list of other users with whom
> they share a connection, and (3) view and traverse their list of connections and
> those made by others within the system. (Boyd & Ellison, 2007, p. 2)

SNSs differ from other traditional social websites in the way participants use them. Most

members of SNSs use the service primarily to connect with people who are already a part

of their extensive offline network (Ellison et al., 2007).

While there are many SNSs with a variety of technical features, there is one

element that all SNSs have in common: a visible profile page that lists an individual's

friends who are also members of the SNS (Boyd, 2007). The profile page is unique to each individual and can be modified by each individual to display characteristics such as age, location, interests, romantic status, and a photographic likeness. The Friends list on the profile page enables users to publicly display their connections for other members of the SNS. Although this list is called a Friends list, "the term 'Friends' can be misleading, because the connection does not necessarily mean friendship in the everyday vernacular sense, and the reasons people connect are varied" (Boyd, 2007, p. 3). Because the purpose of a SNS is social networking, most SNSs also provide users with a communication tool to leave messages and comments on a Friend's profile page. This communication tool is usually accompanied by a private messaging service similar to e-mail or webmail (Boyd, 2007).

"The first recognizable social network site" was launched in 1997 under the name SixDegrees.com (Boyd, 2007, p. 4). It was the first site to combine the ability to create profiles and list Friends together all on one site. SixDegrees.com managed to gain at least a million users, yet it was forced to close in 2000 after never gaining a substantial business footing. From 1997 to 2001, other SNSs began to emerge, including AsianAvenue, BlackPlanet, MiGente, LiveJournal, Cyworld, and LunarStorm. Each of these SNSs possessed some special attribute to attract users from ties to ethnicity to the creation of virtual worlds (Boyd, 2007). The year 2001 welcomed the next era of SNSs with Ryze.com, Tribe.net, LinkedIn, and Friendster. Each of these sites was created by people who were all acquainted both personally and professionally. These acquaintances believed they could support each other's projects without bringing in the negativity of competition (Festa, 2003). However, not all of the projects achieved success. Ryze

never gained a large following while Tribe.net amassed a large group of passionate users. LinkedIn eventually became a powerful source of social networking in the business arena, while Friendster was described as "one of the biggest disappointments in Internet history" (Chafkin, 2007, p. 1)

From 2003 onward, a surge of SNSs were launched on the Internet, culminating in the development of the most popular and successful SNS to date: Facebook.com. With 845 million active users worldwide and a value of $50 billion ("Facebook IPO," 2012), Facebook has attained status as the world's largest and most profitable social network.

Facebook Defined

Facebook was founded in 2004 by Mark Zuckerberg, a sophomore student at Harvard University. Zuckerberg Initially developed the site for socializing among Harvard students only. However, the site soon expanded to include other colleges, followed by high school students, then select businesses, and finally anyone over the age of 13. Since its inception, Facebook has rapidly evolved into one of the world's most popular online destinations, one that is used by teenagers and adults of all ages, and increasingly by businesses all around the world. In country after country, Facebook has become the undisputed leader, often displacing other social network sites ("Facebook IPO," 2012). In the U.S., Facebook is the most popular SNS among teens, college students, and adults (Lenhart, Purcell, Smith, & Zickuhr, 2010), with approximately 900 million users worldwide (Facebook 2012a, para. 4). Facebook's mission is "to give people the power to share and make the world more open and connected" (Facebook, 2012a, para. 1). The official Facebook Newsroom currently lists the following products for use by consumers of the site:

Timeline–Timeline is a new kind of profile that lets people organize and highlight the events and activities that matter most to them. People choose the information they want to share on their timeline, such as their interests, photos and work history. They also control who sees each piece of content. (Facebook, 2012b, para. 1)

Activity Log–People can go to their activity log to review all their posts and activity, from today back to when they first joined Facebook. They can see and adjust the privacy of any of their posts, decide what shows on their timelines and hide or delete any of their posts. (Facebook, 2012b, para. 2)

News Feed–News feed is a regularly updating list of stories from friends, pages, and other connections, like groups and events. People can like or comment on what they see. Each person's news feed is personalized based on their interests and the sharing activity of their friends. (Facebook, 2012b, para. 3)

Photos and Video–With more than 300 million photos uploaded each day, Facebook is the most popular photo uploading service on the web. People can upload an unlimited number of videos and high-resolution photos, create albums, and share with their friends or any audience they choose. It's easy to add details like captions, locations and tags. Tagging lets people identify a friend in a photo or video, easily sharing that content with them. (Facebook, 2012b, para. 4)

Groups–Groups are private spaces within Facebook for people to discuss common interests. People create groups to share with small sets of people, like family, teammates or best friends. People within a group can post updates, photos and chat with everyone at once. People can customize the privacy settings for each group they create.(Facebook, 2012b, para. 5)

Facebook and Social Capital

Recent research has focused on the relationship between Facebook and social capital. In 2001, Resnick presented the possibility that online sites can create new forms of social capital. This is because online activities are often supported by technological tools that strengthen relationships, such as the ability to search for acquaintances, browse photo directories, and register for distribution lists (Resnick, 2001). In 2004, Donath and Boyd presented the possibility of a link between SNSs such as Facebook and bridging social capital. Members of Facebook can use the technological tools found within the site to support loose or weak social ties. This allows members to create and maintain

relationships with a larger more diverse network than they would be able to offline. Facebook members can potentially draw resources from this larger network (Donath & Boyd, 2004).

Influenced by the research of Resnick and Donath as well as that of Boyd (2006) and Ellison et al. (2007) released a study of a random sample of 286 college students in which they examined the relationship between use of Facebook and social capital. The researchers found that 94% of the students used Facebook between 10 and 30 minutes per day primarily to connect with people with whom they already shared an offline relationship instead of using the SNS to meet new people. In addition, the researchers found a positive relationship between certain types of Facebook use and the maintenance and creation of social capital. Moreover, intensive Facebook use served as a significant predictor of bonding, bridging, and high school social capital (Ellison, Steinfield, & Lampe, 2006, 2007). These findings supported the idea that certain media possess the ability to activate loose or weak ties by creating "latent tie connectivity among group members" (Haythornthwaite, 2005, p. 125). When members use Facebook, they are able to activate weak ties through activities such as *friending* a friend of a friend. In addition, members can convert latent ties, ties that exist technically but not socially (Haythornthwaite, 2005), into weak ties through activities such as "looking up the profile of someone in a shared class and finding mutual areas of interest and possible discussion topics" (Ellison et al., 2006, p. 29). According to Ellison et al. (2007), most members use Facebook to maintain or solidify existing offline relationships, and thus also use the site to maintain or solidify their social capital.

Facebook and Teens

Over the last decade there has been a steady increase in the number of teens who go online. Internet use among teens is "near-ubiquitous" (Lenhart et al., 2010, p. 4) as 93% of teenagers ages 12 to 17 report going online for a variety of reasons, including getting news, purchasing clothing, books, or music, and gathering information about health. Today's teenagers grew up in a world of technology that makes the Internet "a central and indispensable element" in their daily lives (Lenhart et al., 2010, p. 5). With the dramatic rise in popularity of SNSs like Facebook, it is no surprise that 73% of American teens report being users of SNSs. Although online social networking is more popular amongst older teens aged 14 to 17 (82%), more than half of younger teens ages 12 to 13 (55%) are avid users of SNSs. Gender differences do not affect the likelihood of a teen using a SNS as males and females are equally likely to visit SNSs. However, socio-economic differences do affect the likelihood of a teen using a SNS, as teens from households earning less than $30,000 annually are less likely to use SNSs than teens from wealthier homes (Lenhart et al., 2010). Similar to adults, most teens are not using SNSs to meet new people. According to Pew Internet Research, 91% of American teens who are members of SNSs use the sites to connect and communicate with people who they already know (Lenhart, Madden, Smith, & Macgill, 2007). These teens use SNSs to send private messages to their friends daily (37%), send group messages (42%), post comments to a friend's blog (52%), and post comments to a picture, page, or wall (85%) within the SNS (Lenhart et al., 2010).

Facebook and Academic Achievement

High levels of social capital have been positively associated with academic achievement (Coleman, 1988). Meanwhile, high levels of certain types of Facebook use have been positively associated with increased levels of social capital (Ellison et al., 2006, 2007). These positive associations have led researchers to question the relationship between Facebook use and academic achievement. In 2009, Karpinski and Duberstein presented a study of 219 undergraduate and graduate students from Ohio State University (OSU) in which the researchers compared the GPAs of Facebook users and non-users. The researchers found that Facebook users had significantly lower GPAs than non-users (3.0-3.5 versus 3.5-4.0). They also found that Facebook users spent significantly less time studying weekly than non-users (1-5 hours versus 11-15 hours). However, Pasek et al. (2009) believed Karpinski and Duberstein's sample and methodology to be flawed. Consequently, they released a study of data gathered from three large scale longitudinal Internet studies: 1,060 undergraduates at the University of Illinois at Chicago (UIC), 700 youth from the 2008 National Annenberg Survey of Youth (NASY), and 320 youth from the 2007 National Annenberg Survey of Youth (NASY), all of whom had agreed to be surveyed again in 2008. Unlike Karpinski and Duberstein, Pasek et al. found no significant relationship between Facebook use and GPA.

However, Karpinski and Duberstein (2009) and Pasek et al. (2009) both compared Facebook users to non-users without taking into account the reality that all Facebook users are not the same. Facebook users vary in the amount of time that they spend on Facebook. Consequently, the results of either study could be misleading. Hargittai and Hsieh (2010) analyzed the data from the UIC study, taking into account the amount of

time Internet users spent on different social networking sites, including Facebook. Hargittai and Hsieh found no systematic relationship between social network use and GPA. However, the results of Hargittai and Hsieh's analysis could also be misleading. When asked how much time they spent on social networking sites, respondents were given the following five choices: "no, have never used it;" "tried it once, but have not used it since;" "yes, have tried it in the past, but do not use it nowadays;" "yes, currently use it sometimes;" and "yes, currently use it often" (Hargittai & Hsieh, 2010, p. 521). The words "often" and "sometimes" can be interpreted differently by respondents. Other researchers have contributed to the discussion of the relationships between Facebook use and academic achievement with results that also differ from those of Karpinski and Duberstein. Ellison et al. (2007) found that Facebook use produced no noticeable effects on grades. Kolek and Saunders (2008) studied Facebook profiles of 471 undergraduates and found no significant difference in GPAs between Facebook users and non-users.

Most recent studies of the relationship between Facebook use and academic achievement have focused on users versus non-users. However, with the dramatic growth of Facebook usage, it is now increasingly difficult to find students who are not Facebook users. Thus, there is a need for future research to focus on other measures of Facebook use other than being a user or a non-user. Also, most recent studies have focused on college students. Thus, there is a need for future research to focus on other populations such as high school students. Lastly, most recent studies have focused on GPA as the only measurement of academic achievement, ignoring psychosocial and academic behaviors that predict the academic success of students. Thus, there is a need

for future research to focus on psychosocial factors that serve as predictive measures of academic achievement, such as motivation, social engagement, and self-regulation.

Psychosocial Factors and Academic Achievement

Many studies of academic achievement focus on two measures: performance (GPA) and retention (not dropping out of school). In 2004, Robbins et al. conducted a meta-analysis of 109 studies published between 1973 and 2002 with research related to academic performance and retention of college students. The primary goal of the study was to combine educational research with psychological research in order to gain a better understanding of the effect of psychosocial constructs, social skills, and study skills on the performance and retention of college students.

Robbins et al. (2004) used the college persistence theories of Tinto (1975, 1993) and Bean (1980, 1983, 1985) to organize educational research into an educational persistence model. Tinto (1975) presented a student integration theory that suggested that factors in a college student's life such as family, social economic status, and high school achievement all help to determine how a student will fit into the academic and social structures of the school. How well a student integrates into the academic and social structures of the school then determines how committed the student will be to the institution and to his or her academic goals. These factors predict the retention behavior of the student and can increase or decrease the student's persistence towards academic success in school. Bean (1980, 1983) presented a student attrition model in which student behaviors such as time spent with faculty and time spent away from campus served as predictors of a student's integration into the academic and social structures of the school or as predictors of a student's lack of involvement with the school. Berger and

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Milem (1999) reiterated the ideas of Tinto and Bean, stating "student involvement leads to greater integration in the social and academic systems of the college and promotes institutional commitment" (p. 644).

Robbins et al. (2004) sought the motivational literature of Covington (2000), Dweck (1999), and Eccles and Wigfield (2002) to organize psychological research into a motivational theory model. Covington highlighted the importance of motivation in achieving academic success:

> The quality of student learning as well as the will to continue learning depends closely on an interaction between the kinds of social and academic goals students bring to the classroom, the motivation properties of these goals, and prevailing classroom reward structures. (Covington, 2000, p. 171)

Covington (1998, 2000) also presented self-worth theory, which describes the importance of possessing high self-esteem, establishing a positive self-image, and maintaining a positive self-concept. Dweck (1986, 1999) highlighted a student's need to achieve coupled with a student's need to belong as factors that drive student motivation and in turn affect both achievement and performance goals of the student. Eccles and Wigfield (2002) discussed the importance of intrinsic motivation, goals, and interests and also highlighted the differences among these ideas as they relate to student motivation. They also presented self-efficacy and control as behaviors that related to academic achievement.

Robbins et al. (2004) combined the educational persistence models with the motivational theory models and identified

> nine broad constructs of psychosocial and study skills factors (PSFs) as follows: achievement motivation, academic goals, institutional commitment, perceived social support, social involvement, academic self-efficacy, general self-concept, academic related skills, and contextual influences (including financial support, size of institutions, and institutional selectivity). (p. 264)

After controlling for the effects of traditional predictors of academic performance and

retention (high school GPA, ACT, Scholastic Aptitude Test (SAT) scores, and

socioeconomic status), Robbins et al. (2004) identified three broad, higher order

psychosocial constructs as being valid predictors of academic performance and

persistence. These broad psychosocial constructs were motivation, social engagement,

and self-regulation:

- Motivation includes personal characteristics that help students succeed academically by focusing and maintaining energies on goal-directed activities.
- Social engagement includes interpersonal factors that influence students' successful integration into their environment.
- Self-regulation includes the thinking processes and emotional responses of students that govern how well they monitor, regulate, and control their behavior related to school and learning. (ACT, 2011a, p. 1; Robbins et al., 2004; Le, Casillas, Robbins, & Langley, 2005, p. 486)

After identifying the three broad psychosocial constructs, the researchers

conducted a study

> to develop an inventory of psychosocial and skills factors that (a) captures the aforementioned higher order constructs, (b) includes other important constructs missing in Robbins et al.'s meta-analysis that may be predictive of college success criteria, and (c) establishes the foundation for the construct validation process of the resulting inventory. (Le et al., 2005, p. 483)

In order to find constructs missing from Robbins et al. (2004), the researchers analyzed

self-regulation literature and personality literature. The researchers sought the self-

regulation literature of Schunk and Zimmerman (2003), Zimmerman (1986), and

Zimmerman and Martinez-Pons (1986) in order to combine the motivational constructs of

goals, self-efficacy, and self-esteem with the cognitive skills of self regulated behavior

and metacognition with the goal of creating a self-regulated learning model. The

researchers sought the personality literature of Digman (1990), Goldberg (1993), and

John (1990) to present information on the five broad personality traits of humans, which were defined as emotional stability (neuroticism), extroversion, conscientiousness, agreeableness, and openness. Three of these personality traits, conscientiousness, emotional stability, and agreeableness, can be used to predict job performance (Barrick & Mount, 1991; Hurtz & Donovan, 2000; Saldago, 1997; Tett, Jackson, & Rothstein, 1991) and turnover (Caligiuri, 2000; Saldago, 2002). According to Le et al. (2005), the constructs of job performance and turnover in the organizational literature are analogous to the constructs of academic performance and retention in educational literature. Thus, conscientiousness, emotional stability, and agreeableness are likely predictors of academic performance and retention.

Le et al. (2005) combined motivational literature, educational literature, psychological literature, self-regulation literature, and personality literature to develop a tool for measuring psychosocial and study skills factors called the Student Readiness Inventory (SRI). The SRI consists of 10 scales:

1. Academic Discipline (reflects the amount of effort a student puts into schoolwork and the degree to which he or she sees himself or herself as hardworking and conscientious),

2. Academic Self-Confidence (reflects the extent to which a student believes he or she can perform well in school),

3. Commitment to College (reflects a student's commitment to staying in college and getting a degree),

4. Communication Skills (reflects how attentive a student is to others' feelings and how he or she manages those feelings),

5. Steadiness/Emotional Control (reflects how a student responds to strong feelings and how he or she manages those feelings),

6. General Determination (reflects the extent to which a student strives to follow through on commitments and obligations),

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7. Goal striving (reflects the strength of a student's effort to achieve objectives and end goals),

8. Social Activity (reflects how comfortable a student feels meeting and interacting with other people),

9. Social Connection (reflects a student's feelings of connection and involvement with the college or school community), and

10. Study Skills (reflects the extent to which a student believes he or she knows how to assess an academic problem, organize a solution, and successfully completes academic assignments).

(Robbins, Allen, Casillas, Peterson, & Le, 2006, p. 600)

In 2006, Robbins et al. conducted a large-scale study of 14,464 students from 48 institutions to determine the predictive validity of the Student Readiness Inventory. After controlling for institutional and demographic effects, the researchers' findings suggested that "specific measures of motivational, self-management, and social engagement factors are all related to academic performance and retention, with academic-specific motivational measures (Academic Discipline and Commitment to College) the best predictors of academic performance and retention" (Robbins et al., 2006, p. 614).

Psychosocial Factors and Social Capital

Through their meta-analyses, Robbins et al. (2004, 2006) and Le et al. (2005) found 10 psychosocial behaviors of students that were predictive of academic achievement. They grouped these into the three categories of motivation, social engagement, and self-regulation. The definitions of these categories share characteristics with the definitions of the three types of social capital: network capital, participatory capital, and community commitment.

Wellman and Frank (2001) defined network capital as relationships with family, friends, co-workers, and neighbors that resulted in emotional support, companionship,

shared information, exchange of goods and services, and a general sense of belonging to the community. In a school environment, this network capital can be viewed as the relationships a student has with parents, teachers, administrators, coaches, and peers who provide emotional support, companionship, shared information, exchange of goods and services, and a general sense of belonging to the school community. The relationships described by network capital share characteristics with the PSFs defined by Robbins et al. (2004). Emotional support resembles the PSF of steadiness, which is defined as a student's responses to and management of their emotions and feelings. The exchange of goods and services resembles the PSF of study skills, which is defined as a student's knowledge of how to solve academic problems and complete academic assignments. Companionship and sense of belonging resemble the PSFs of (a) social activity, a student's level of comfort when interacting with others; and (b) social connection, a student's interaction with the school community. The concept of network capital as a form of social capital shares traits with the psychosocial factors of steadiness, study skills, social connection, and social activity.

Wellman et al. (2001) described the second type of social capital, participatory capital, as voluntary involvement in politics or other organizations that present an opportunity for individuals to bond with others, set common goals, share accomplishments, and discuss their hopes, desires, dreams, and demands with others. In a school environment, participatory capital can be viewed as a student's involvement in extracurricular activities. The opportunities described by participatory capital share characteristics with the PSFs defined by Robbins et al. (2004). Bonding with others resembles the PSFs of (a) communication skills, being aware of other's feelings and

emotions; (b) social connection, being involved in the school community; and (c) social activity, enjoying interactions with others. Setting common goals and sharing accomplishments resembles the PSFs of (a) goal striving, making a concerted effort to achieve benchmarks and goals; and (b general determination, striving to keep commitments, obligations, and promises. The concept of participatory capital as a form of social capital shares traits with the psychosocial factors of communication skills, social connection, social activity, goal striving, and general determination.

Community commitment is the third type of social capital presented by Wellman et al. (2001). It is defined as interactions between people that lead one to develop motivation and responsibility for bettering themselves and the community. Similarly, Robbins et al.'s (2004) description of motivation and skills include PSFs such as (a) communication skills, where an individual has interpersonal relationships where they are aware of others' feeling and work to resolve conflicts; (b) general determination, where an individual works to keep obligations and commitments to others within the school community; and (c) academic discipline, where an individual views him/herself as a hard worker dedicated to achieving goals. Community commitment is also defined as being involved in the community and feeling a strong sense of belonging to the community (Wellman et al., 2001). Similarly, Robbins et al. (2004) described social engagement as including PSFs such as (a) social connection, where an individual feels connected to and involved in the school community; and (b) social activity, where an individual feels comfortable meeting, speaking, and interacting with others in the school community. The concept of community commitment as a form of social capital shares traits with the

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psychosocial factors of communication skills, general determination, social connection, and social activity.

The shared traits among the three types of social capital and the psychosocial factors that predict academic achievement present questions for researchers interested in the relationship between Facebook usage and academic achievement. In accordance with the research of Donath and Boyd (2004) and Ellison et al. (2006, 2007), does Facebook usage increase social capital and in turn, have a positive relationship with GPA, and the psychosocial factors that are predictive of academic achievement? Or, in accordance with the research of Nie (2001), does Facebook usage decrease social capital, and in turn have a negative relationship with GPA and the psychosocial factors that are predictive of academic achievement? Finally, in accordance with the research of Pasek et al. (2009), does Facebook usage have no effect on social capital, and in turn, have no relationship with GPA and the psychosocial factors that are predictive of academic achievement? These questions influenced and informed the goals of the present study.

Chapter 3: Methodology

The purpose of this study was to examine the relationship between Facebook usage and the academic achievement of high school students. The researcher sought to answer the following research questions:

1. Is Facebook usage related to GPA for high school students?

2. Is Facebook usage related to academic discipline for high school students?

3. Is Facebook usage related to academic self-confidence for high school students?

4. Is Facebook usage related to commitment to college for high school students?

5. Is Facebook usage related to communication skills for high school students?

6. Is Facebook usage related to general determination for high school students?

7. Is Facebook usage related to goal striving for high school students?

8. Is Facebook usage related to social activity for high school students?

9. Is Facebook usage related to social connection for high school students?

10. Is Facebook usage related to steadiness for high school students?

11. Is Facebook usage related to study skills for high school students?

The methodology used to explore these research objectives is presented in this chapter. It consists of the following sections: research design, population and sample, sampling procedures, instrumentation, data collection procedures, data analysis, limitations, and summary of methodology.

Research Design

A quantitative explanatory research methodology was used in this study. Explanatory research design is "a correlational design in which the researcher is

interested in the extent to which two variables (or more) co-vary, that is, where changes in one variable are reflected in changes in the other" (Creswell, 2008, p. 358). The researcher employed explanatory design to determine the relationship between the variables of Facebook usage and GPA among high school students. The researcher also determined the relationship between the variable of Facebook usage and each of the ten variables of academic discipline, academic self-confidence, commitment to college, communication skills, general determination, goal striving, social activity, social connection, steadiness, and study skills. The researcher did not wish to infer causation between these variables. Instead, the researcher wanted to discover if any relationships existed and to what extent those relationships existed. Thus, explanatory research was most suited for this study because "the goal of correlational studies is to understand the patterns of relationships among variables" (Smith & Glass, 1987, p. 198)

Population

The population for this study consisted of 508 students enrolled in 9th, 10th, 11th, and 12th grades at Dollarway High School, located in Pine Bluff, Arkansas (see Table 1). The student body consisted of 93% African American students, 0.6% Asian students, 1.2% Hispanic students, 0% Native American students, and 5% Caucasian students. Male students comprised 52% of the student body and female students comprised 48% of the student body. Enrollment data reported that 90% of the student body was economically disadvantaged and received free or reduced lunch services.

Table 1

Dollarway High School Student Characteristics

Total Students	Count	Percentage
Gender		
Male	264	52%
Female	244	48%
Ethnicity		
African American	474	93%
Native American	0	0%
Asian/Pacific Islander/Filipino	3	0.6%
Hispanic	6	1.2%
White	25	5%
Other	0	0%
Economic Status		
Free/Reduced Lunch	455	90%
Grade		
9th grade (Freshman)	109	21%
10th grade (Sophomore)	126	25%
11th grade (Junior)	158	31%
12th grade (Senior)	115	23%

Sample and Sampling Procedures

The sample population was represented through a convenience sample of students enrolled at Dollarway High School during the Spring 2012 semester. The sample consisted of Sophomores (10th graders), Juniors (11th graders), and Seniors (12th graders), ranging in age from 16 to 19 years old. After receiving permission to conduct research at Dollarway High School, the researcher sought teachers who were willing to volunteer their class time for the study. Two teachers volunteered their class time for the study. Students enrolled in these two teachers' courses were invited to participate in the study. A total of 244 students were invited to participate in the study. A total of 72 students participated in the study.

Instrumentation

Two survey instruments were used in this study: Facebook Intensity Scale (FBI) (see Table 2), and ENGAGE™ for grades 10-12 (formerly the Student Readiness Inventory). The FBI was developed by researchers at Michigan State University in 2007. The FBI was created to gain a measure of Facebook that extended beyond frequency and duration (Ellison et al., 2007). It includes two self-reported assessments of behavior on Facebook. The FBI measures the amount of time spent on Facebook during a typical day, the number of Facebook "friends," and the extent of participation on Facebook. The FBI includes six items scored using a 5-point Likert-scale and two open-ended questions to determine participant's attitude towards Facebook, including to what extent the participant feels an emotional connection to Facebook and the participant's integration of Facebook into his or her daily life. Studies of the FBI have demonstrated moderate to high internal consistency reliabilities (Cronbach's alpha = .83). The Facebook Intensity

score is computed by calculating the mean of all of the items in the scale. The version of

the Facebook Intensity Scale formatted for this study is included in Appendix A.

Table 2

Facebook Intensity Scale

Scale Items
1. Facebook is a part of my every day activity.
2. I am proud to tell people I'm on Facebook.
3. Facebook has become part of my daily routine.
4. I feel out of touch when I haven't logged onto Facebook for awhile.
5. I feel I am part of the Facebook community.
6. I would be sorry if Facebook shut down.
7. Approximately how many total Facebook friends do you have?
8. In the past week, on average, approximately how much time PER DAY have you spent actively using Facebook?
Response categories ranged from 1 = strongly disagree to 5 = strongly agree

(Ellison, 2007)

ENGAGE™ is a self-report inventory that measures 10 psychosocial behaviors of

students that serve as key predictors of academic success. It is published by American

College Testing (ACT) and used as the academic behavior component of ACT's College

and Career Readiness System. There are currently three ENGAGE assessments designed

for different stages in a student's academic career: ENGAGE 6-9 for middle school

students, ENGAGE 10-12 for high school students, and ENGAGE College for college

students. ENGAGE 10-12 will be used in this study. By using ENGAGE in this study,

the researcher gained information about academic success that extended beyond a calculation of GPA. While prior academic achievement and cognitive ability greatly influence the academic success of students, the academic behaviors of motivation, social engagement, and self-regulation are substantially important for student success in middle school, high school, and college (Robbins et al., 2004).

After testing thousands of students using ENGAGE Grades 6-9 and tracking their academic progress through high school, ACT found that ENGAGE Grades 6-9 was a valid predictor of high school grades. The psychosocial behaviors measured by ENGAGE Grades 6-9 help explain academic performance in high school. ACT (2011b) found that the following relative distribution of the predictors of early high school GPA: middle schools grades (31%), academic behaviors (31%), EXPLORE Composite score (26%), student demographics (9%), and school factors (3%).

After testing over 14,000 students at 48 postsecondary institutions using ENGAGE College and tracking their academic and work performance, ACT found that ENGAGE College was a valid predictor of college grades and work performance. The psychosocial behaviors measured by ENGAGE College help explain academic performance in college. ACT (2011b) found the following distribution of psychosocial behaviors to measure academic performance in college: high school grades (34%), ACT Composite score (30%), academic behaviors (17%), student demographics (12%), and institutional factors (7%).

The same psychosocial behaviors that are important for academic success are also important for students when they enter the workforce. Thus, it is important that students

develop the necessary psychosocial behaviors in middle school and high school in order to be prepared for college and career (ACT, 2007).

The important academic behaviors of motivation, social engagement, and self-regulation develop in stages as students progress from middle school to the workforce. For instance, motivation during middle school involves completing homework or organizing desk and school supplies. In high school and college motivation becomes recording due dates and assignments and studying hard. As an adult it becomes working productively and being able to multitask. Social engagement skills move from being able to cooperating with others, perhaps on group projects, to socializing and engaging with peers and taking part in school events. An adult is then able to collaborate with coworkers and be a good citizen. Self-regulation proceeds from learning to control one's temper to coping with busy situations to managing stress. Self-regulation is also the process of learning to obey rules, from classroom ones to academic honor codes to company policies.

ENGAGE 10-12 features 108 items scored using a 6-point Likert scale that ranges from strongly disagree to strongly agree. ENGAGE 10-12 measures 10 variables (or scales) that each represent a psychosocial or academic behavior that is predictive of academic success: academic discipline, academic self-confidence, commitment to college, communication skills, general determination, goal striving, social activity, social connection, steadiness, and study skills. These 10 scales are divided into the three domains of motivation and skills, social engagement, and self-regulation. Studies of ENGAGE 10-12 have demonstrated moderate to high internal consistency reliabilities (alpha range = .81 to .87; median = .84), as well as incremental validity over

demographic, institutional, and standardized achievement variables (Le et al., 2005; Peterson, Casillas, & Robbins, 2006).

The full ENGAGE assessment and samples of statements for each ENGAGE scale cannot be included because the materials are copyrighted and cannot be reproduced. However, they are available on the internet at www.act.org/engage, along with an abundance of other ENGAGE information and resources.

Data Collection Procedures

The first step in the data collection process was to obtain permission from the Dollarway High School District Superintendant to use Dollarway High School as a research site. After receiving permission from the Superintendant, the researcher sent an e-mail to teachers at Dollarway High School and placed flyers in the teachers' lounge seeking teachers who were willing to volunteer class time for the research project. Two teachers volunteered their class time. Next, the researcher visited each of the two teachers' seven classes to present information about the study and to distribute letters of assent and parental letters of consent. The researcher returned to these classes and collected the signed letters of assent and consent from those students who chose to participate in the study. These students were then given the Facebook Intensity Scale Survey and the ENGAGE 10-12 Survey.

All data was collected in one sitting by the researcher, who visited a total of 14 classes at the school and administered the Facebook Intensity Scale and ENGAGE during the 50-minute class period. These instruments were paper and pencil surveys that the students completed individually and returned to the researcher at the time of completion. Following the survey collection, GPA data was collected from the guidance office for

each participating student. GPA data, FBI data, and ENGAGE resulted in the collection of 12 scores for each student. These included the GPA, Facebook Intensity Scale score, academic discipline score, academic self-confidence score, commitment to college score, communication skills score, general determination score, goal striving score, social activity score, social connection score, steadiness score, and study skills score. These data collection procedures were approved by the Pepperdine Institutional Review Board (IRB) (see Appendix B).

Data Analysis

Data from ENGAGE 10-12 was scored by American College Testing and returned to the researcher. Data from the Facebook Intensity Scale was scored by the researcher. All data was placed in an Excel spreadsheet. The Statistical Package for the Social Sciences (SPSS) computer software program was used to perform analysis of the survey data. Descriptive statistics was used to determine measures of central tendency including the mean, median, range, and standard deviation of the data. Research questions 1 to 11 were tested using the Pearson correlation coefficient. Variables were statistically tested to determine if a positive or negative correlation exists between the variables.

Limitations

The major limitation of the study was the use of a non-probability sampling method. A convenience sample was used. This affects the generalizibility of the study to the population.

Summary of Methodology

   This chapter restated the purpose of this research and the research questions. Participants were chosen from a convenience sample of students at Dollarway High School. The two instruments, Facebook Intensity Scale and ENGAGE, were introduced. The reliability and validity of the two instruments were also discussed. Finally, the procedures for collecting and analyzing the data were described. The results of the data analysis are presented in the following chapter.

Chapter 4: Results

The previous chapter presented the methodology used for the study, rationale, and description of instruments, and information about the population. This chapter presents the results of the study. It is divided into two sections. The first section presents descriptive data of the participants in the study. The second section presents the results of testing for each of the 11 research questions. Two hundred and forty-four students were invited to participate in the study, and 72 students returned student assent (Appendix C) and parental consent (Appendix D) forms granting permission to participate in the study.

Characteristics of the Sample

Descriptive statistics on the characteristics of the sample are shown in Table 3. Participants had a GPA of approximately C+/B-. Percentile rank scores on the ENGAGE assessment can be interpreted in normative terms: i.e., percentile rank scores above 50 are above the median, and scores below 50 are below the median. In this regard, members of the sample had relatively high percentile rank scores on College Commitment, General Determination, Goal Striving, and Study Skills. Participants also had relatively low scores on the Steadiness and Social Activity scales. Almost half of the sample was in the 12th grade, and only one in five were in the 10th grade. Slightly more than half of the sample was female. With few exceptions, members of the sample were African American.

Table 3

Sample Characteristics

Characteristic	Mean	(SD)	Median	Range
Facebook Intensity	2.85	(0.69)	2.84	0.75–4.31
Grade Point Average (GPA)	2.50	(0.80)	2.45	0.75–4.00
Academic Discipline PR	56.47	(26.04)	59.00	4–99
Academic Self-Confidence PR	52.72	(25.41)	49.00	6–97
College Commitment PR	63.32	(32.20)	75.50	3–99
Communication Skills PR	48.81	(30.07)	48.00	2–99
General Determination PR	63.34	(25.98)	71.00	4–99
Goal Striving PR	70.96	(25.22)	77.00	2–99
Social Activity PR	42.53	(23.43)	37.00	3–97
Social Connection PR	51.18	(26.50)	51.00	1–99
Steadiness PR	40.43	(27.66)	34.50	1–99
Study Skills PR	65.51	(25.98)	72.00	8–99

Gender	Count	Percentage
Male	31	43.1%
Female	41	56.9%

Ethnicity	Count	Percentage
African American	65	90.3%
Native American	0	0%
Asian/Pacific Islander/Filipino	0	0%
Hispanic	0	0%
White	4	5.6%
Two Races	3	4.2%

Grade	Count	Percentage
9th grade (Freshman)	0	0%
10th grade (Sophomore)	14	19.4%
11th grade (Junior)	24	33.3%
12th grade (Senior)	34	47.2%

*Note***:** PR = Percentile Rank; *n* = 72

Research Questions

In order to explore relationships between Facebook Intensity and GPA and

relationships between Facebook Intensity and the ENGAGE variables, Pearson's

correlation coefficient was employed. Pearson's correlation coefficient is appropriate

because all the variables in the study were scale variables, and the relationships between them were thought to be linear. In the following analyses, an alpha level of .05 was employed to reject the Null Hypothesis. In other words, if the probability that the sample came from a population in which the variables were uncorrelated was less than .05, then the Null Hypothesis was rejected in favor of the alternate hypothesis that the variables were related in the population. The results of the correlational analyses are shown in Table 4.

Table 4

Correlation of Facebook Intensity with GPA and ENGAGE scales

	Facebook Intensity
Grade Point Average (GPA)	-.233*
Academic Discipline PR	-.197
Academic Self-Confidence PR	-.179
College Commitment PR	-.196
Communication Skills PR	-.086
General Determination PR	-.165
Goal Striving PR	-.246*
Social Activity PR	-.093
Social Connection PR	.071
Steadiness PR	-.389***
Study Skills PR	-.171

Note: * $p < .05$; ** $p < .01$; *** $p < .001$; $n = 72$

Statistically significant relationships were found between Facebook Intensity and GPA, between Facebook Intensity and Goal Striving, and between Facebook Intensity and Steadiness. Students with higher scores on the Facebook Intensity scale had significantly lower GPAs, as well as significantly lower percentile rank scores on the ENGAGE Goal Striving and Steadiness measures. Follow-up analyses using ENGAGE raw scale scores instead of percentile rank scores obtained the same results: greater Facebook Intensity was related to significantly lower levels of Goal Striving and Steadiness.

The magnitude of the negative correlations of Facebook Intensity with GPA, Goal Striving, and Steadiness were moderately strong. These correlations are presented in Table 5. The strength of a correlation can be determined by computing the square of the correlation; this squared correlation indicates the proportion of variance that is shared by the variables. Facebook Intensity shared 5% of its variance with GPA, 6% of its variance with Goal Striving, and 15% of its variance with Steadiness.

Table 5

Strength of Statistically Significant Correlations

| | Facebook Intensity | |
	R	R^2
Grade Point Average (GPA)	-.233	.05
Goal Striving PR	-.246	.06
Steadiness PR	-.389	.15

Exploratory analyses examined the correlation of Facebook Intensity and students' ACT scores. Higher levels of Facebook Intensity were correlated with lower ACT scores ($r = -.253$). However, because ACT scores were available for only a relatively small number of students ($n = 25$), this correlation did not attain statistical significance.

Cumulatively, the results of the analyses indicated that students who used Facebook more intensely might have lower levels of academic performance. Students who were more engaged with Facebook appeared to be less goal-driven and persistent in their approach to academic tasks. The results of the analyses did not support the view that Facebook activity increases social activities or connections.

Chapter 5: Discussion

As described in Chapter 1, the purpose of this study was to examine the relationship between Facebook usage and the academic achievement of high school students. It also determined whether a relationship existed between Facebook usage and psychosocial behaviors of academic success, including academic discipline, academic self-confidence, commitment to college, communication skills, general determination, goal striving, social activity, social connection, steadiness, and study skills. Specifically, this study addressed the following research questions:

1. Is Facebook usage related to GPA for high school students?

2. Is Facebook usage related to academic discipline for high school students?

3. Is Facebook usage related to academic self-confidence for high school students?

4. Is Facebook usage related to commitment to college for high school students?

5. Is Facebook usage related to communication skills for high school students?

6. Is Facebook usage related to general determination for high school students?

7. Is Facebook usage related to goal striving for high school students?

8. Is Facebook usage related to social activity for high school students?

9. Is Facebook usage related to social connection for high school students?

10. Is Facebook usage related to steadiness for high school students?

11. Is Facebook usage related to study skills for high school students?

Seventy-two high school students participated in the study by completing two surveys: the Facebook Intensity Scale and ENGAGE for grades 10-12. Data analysis

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from these surveys indicated moderately strong negative relationships between Facebook Intensity and the three variables of GPA, Goal Striving, and Steadiness.

This final chapter is organized into four sections. The first section is key findings, where I discuss the results from the current study. The next section is limitations of the study, where I discuss issues that potentially affected the outcomes of the study. This is followed by implications for the field, where I discuss where the present study fits into the body of work on the relationship between online social networking and academic achievement. Lastly, the chapter ends with suggestions for future research.

Key Findings

The first key finding of this study was a moderately strong negative relationship between Facebook Intensity and GPA of the students in the sample ($r = -.233$, $p < .05$). This is not surprising given that Karpinski and Duberstein (2009) asserted that non-users of Facebook earned higher grades than users of Facebook. The present study did not focus on users versus non-users. Because the number of people engaged in online social networking has increased so dramatically since 2008 (Nielsen Company, 2009), it can now be difficult for researchers to locate non-users within a sample. Moreover, 73% of American teens reported that they are users of social networking sites such as Facebook (Lenhart et al., 2010). There were only two non-users within the sample of the present study. One non-user had a GPA of 4.0, which was the highest in the sample. The other user had a GPA of 2.14, which was below the mean of 2.85. Consequently, there was not enough information to make a determination about users versus non-users. There was, however, enough information to determine that the more intensely a student used Facebook, the less academic success they achieved when measuring academic success by

GPA. There was no causal relationship presented in the study. There is simply evidence

that students who used Facebook more intensely experienced lower academic

achievement than their counterparts who used Facebook less intensely.

The second key finding of this study was a moderately strong negative

relationship between Facebook Intensity and Goal Striving ($r = -.246$, $p < .05$). The Goal

Striving scale within the ENGAGE assessment "reflects the strength of a student's effort

to achieve objectives and end goals" (Robbins et al., 2006, p. 600). Goal Striving is

found within the larger construct of motivation, which is defined as "personal

characteristics that help students succeed academically by focusing and maintaining

energies on goal-directed activities" (ACT, 2011b, p. 1). Goal setting appeared to be a

large factor within the lives of the students within the sample. The Goal Striving mean

score was 70.96. However, the data supported the statement that students who used

Facebook more intensely experienced more difficulty in reaching their goals than their

counterparts who used Facebook less intensely. Perhaps intensive Facebook use

prevented these students from focusing and maintaining their energies on goal-directed

activities such as completing homework assignments or studying for tests. As Rouis,

Limayem, and Salehi (2011) explained, using Facebook creates a distraction for many

students, thus preventing them from achieving their academic goals:

> Immersion and engagement in this social activity increases time spent on the
> website and that even spending 5 to 10 hours a week on Facebook could decrease
> students' focus and effort on assignment preparation. This effect can be
> explained by the split attention effect on two tasks that students try to perform
> simultaneously. (Rouis et al., 2011, p. 985)

Again, there was no causal relationship presented in the study. There is simply evidence that students who used Facebook more intensely possessed fewer goal striving and motivation characteristics than their counterparts who used Facebook less intensely.

The third key finding was a moderately strong negative relationship between Facebook Intensity and Steadiness of the students in the sample ($r = -.389$, $p < .001$). The Steadiness scale within the ENGAGE assessment represents "one's responses to and management of strong feelings" (Robbins et al., 2006, p. 600). Steadiness is found within the larger construct of self-regulation, which is defined as "the thinking process and emotional responses of students that govern how well they monitor, regulate, and control their behavior related to school and learning" (ACT, 2011, p. 1). The Steadiness mean score for the sample population was 40.43, which was the lowest mean score of all of the ENGAGE variables. Clearly, steadiness was an important academic behavior that many students within the sample population lacked. Perhaps these students were unable to balance their use of Facebook with their academic duties because they lacked the self-control needed to guide their Facebook usage habits. This third key finding models Rouis et al.'s (2011) application of flow theory to Facebook use. When participants used Facebook, they become so absorbed that they lacked the ability to return to their schoolwork:

> Although users experience delight and enjoyment interacting with others on these networks and appear to be in total command of this activity, they lose control over other tasks that they are expected to perform instead. Time flies while they are absorbed in the effect of joy and curiosity from these websites, and no time or effort is left to carry on with other chief tasks. (Rouis et al., 2011, p. 969)

As with GPA and Goal Striving, there was no causal relationship presented in the study between Intensity of Facebook use and Steadiness. There was simply evidence that

students who used Facebook more intensely possessed fewer steadiness and self-regulation characteristics than their counterparts who used Facebook less intensely.

Limitations of the Study

The primary limitations of this study were the convenience sampling method and small sample size (72 students). Another limitation was the context of the study, namely a specific high school in Pine Bluff, Arkansas where the majority of the students possessed a low socioeconomic status and the majority of the students were of one race–African American.

In the present study, there was no account for the previous academic success of students. It was outside the scope of the present study to control for other variables that may have contributed to an increase or decrease of student achievement. Although the results indicate a relationship between Intensity of Facebook use and GPA, Goal Striving, and Steadiness, these results are merely suggestive of influence; they are not a definitive display of influence. This is due to the lack of controls for other contributing variables. The same is true for the past studies conducted by Karpinski and Duberstein (2009) and Pasek et al. (2009). Thus, future research should focus on controlling for changes in academic success. Researchers should obtain past data about students, such as past standardized test scores and prior GPAs, to determine if students within the study have experienced an increase or decrease in their academic performance due to other circumstances.

It is important to note that Facebook is one of many tools used for online social networking. The website itself is continuously evolving as the online socialization habits of its users continue to evolve. Therefore, the conclusions of this study should be viewed

within the broader context of the online socialization habits of teenagers. The conclusions of this study contribute to the literature detailing the role of social networking in the lives of high school-aged students.

Implications for the Field

The present study showed no support for the theory that increased online social networking related to increased social capital and, in turn, increased academic achievement. This is in great contrast to prior studies (Donath & Boyd, 2004; Ellison et al., 2006, 2007), which showed a positive relationship between Facebook usage and social capital. It is also in great contrast to prior studies that showed no relationship between Facebook usage and academic achievement (Kolek & Saunders, 2008; Pasek et al., 2009). Perhaps the difference lies in the age of the participants and the environment. The sample in the present study consisted of teenagers between the ages of 16 to 19 who were all enrolled in high school. The other studies consisted of young adults who were enrolled in colleges or universities. The present study did, however, provide support for previous studies showing a negative relationship between Facebook usage and academic achievement (Karpinski & Duberstein, 2009; Kirschner & Karpinski, 2010). The present study adds to the field of research in three distinctive ways:

1. It focuses on high school students as the population.

2. It focuses on academic behaviors instead of GPA only.

3. It focuses on the intensity of Facebook users instead of users versus non-users.

Suggestions for Future Research

It would be appropriate to conduct this study at other high schools within Pine Bluff, within Arkansas, and within the U.S., using a larger sample size in order to observe

whether students at other high schools experienced the same negative relationship

between Intensity of Facebook Usage and GPA, Goal Striving, and Steadiness.

Furthermore, it would be of interest to explore the relationship between Intensity of

Facebook Usage and all of the ENGAGE variables at high schools with a different

cultural context than that of Dollarway High School. This type of study would enable

researchers to observe whether high school students experienced dissimilar effects with

Facebook usage due to cultural or environmental differences. Lastly, it would be

beneficial to conduct a study using quantitative and qualitative measures in order to gain

a better understanding of the relationship between Intensity of Facebook Usage and

academic achievement among high school students. This could be accomplished by

randomly selecting students from the sample and interviewing them about their attitudes

and behaviors concerning their use of Facebook, their current GPA, and their scores on

the ENGAGE assessment.

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Facebook Intensity Scale

Directions: Listed below are statements about Facebook.
Read each statement and indicate how well it describes you by filling in the circle.

1. Facebook is a part of my everyday activity.

Strongly Disagree　　Disagree　　Neither Agree nor Disagree　　Agree　　Strongly Agree
　　①　　　　　　②　　　　　　　　③　　　　　　　　④　　　　　⑤

2. I am proud to tell people I'm on Facebook.

Strongly Disagree　　Disagree　　Neither Agree nor Disagree　　Agree　　Strongly Agree
　　①　　　　　　②　　　　　　　　③　　　　　　　　④　　　　　⑤

3. Facebook has become part of my daily routine.

Strongly Disagree　　Disagree　　Neither Agree nor Disagree　　Agree　　Strongly Agree
　　①　　　　　　②　　　　　　　　③　　　　　　　　④　　　　　⑤

4. I feel out of touch when I haven't logged onto Facebook in awhile.

Strongly Disagree　　Disagree　　Neither Agree nor Disagree　　Agree　　Strongly Agree
　　①　　　　　　②　　　　　　　　③　　　　　　　　④　　　　　⑤

5. I feel I am a part of the Facebook community.

Strongly Disagree　　Disagree　　Neither Agree nor Disagree　　Agree　　Strongly Agree
　　①　　　　　　②　　　　　　　　③　　　　　　　　④　　　　　⑤

6. I would be sorry if Facebook shut down.

Strongly Disagree　　Disagree　　Neither Agree nor Disagree　　Agree　　Strongly Agree
　　①　　　　　　②　　　　　　　　③　　　　　　　　④　　　　　⑤

7. Approximately how many TOTAL Facebook friends do you have? _____.

8. In the past week, on average, approximately how much time PER DAY have you
 spent actively using Facebook?
 _____

Name_____

APPENDIX B

Pepperdine University Institutional Review Board Approval

PEPPERDINE UNIVERSITY

Graduate & Professional Schools Institutional Review Board

February 21, 2012

Celeste Marie Alexander

Protocol #: E1111D12
Project Title: *Facebook Usage and Academic Achievement of High School Students: A Quantitative Analysis*

Dear Ms. Alexander:

Thank you for submitting your revised IRB application, *Facebook Usage and Academic Achievement of High School Students: A Quantitative Analysis,* to Pepperdine's Graduate and Professional Schools Institutional Review Board (GPS IRB). The IRB has reviewed your revised submitted IRB application and all ancillary materials. As the nature of the research met the requirements for expedited review under provision Title 45 CFR 46.110 (research category 7) of the federal Protection of Human Subjects Act, the IRB conducted a formal, but expedited, review of your application materials.

I am pleased to inform you that your application for your study was granted **Full Approval.** The IRB approval begins today, **February 21, 2012,** and terminates on **February 20, 2013.**

Your final consent and assent form have been stamped by the IRB to indicate the expiration date of study approval. One copy of the forms is enclosed and one copy will be retained for our records. **You can only use copies of the consent and assent forms that have been stamped with the GPS IRB expiration date to obtain consent from your participants.**

Please note that your research must be conducted according to the proposal that was submitted to the GPS IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For *any* proposed changes in your research protocol, please submit a **Request for Modification Form** to the GPS IRB. Please be aware that changes to your protocol may prevent the research from qualifying for expedited review and require submission of a new IRB application or other materials to the GPS IRB. If contact with subjects will extend beyond **February 20, 2013,** a **Continuation or Completion of Review Form** must be submitted at least **one month prior** to the expiration date of study approval to avoid a lapse in approval. These forms can be found on the IRB website at http://services.pepperdine.edu/irb/irbforms/#Apps.

A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the GPS IRB as soon as possible. We will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event. Details regarding the timeframe in which adverse events must be reported to the GPS IRB and the appropriate form to be used to report this information can be found in the *Pepperdine University Protection of Human Participants in Research: Policies and Procedures Manual* (see link to "policy material" at http://www.pepperdine.edu/irb/graduate/).

Please refer to the protocol number denoted above in all further communication or correspondence related to this approval. Should you have additional questions, please contact me. On behalf of the GPS IRB, I wish you success in this scholarly pursuit.

6100 Center Drive, Los Angeles, California 90045 ▪ 310-568-5600

Sincerely,

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cc: Dr. Lee Kats, Associate Provost for Research & Assistant Dean of Research, Seaver College
           Ms. Alexandra Roosa, Director Research and Sponsored Programs
           Dr. Yuying Tsong, Interim Chair, Graduate and Professional Schools IRB
           Ms. Jean Kang, Manager, Graduate and Professional Schools IRB
           Dr. Eric Hamilton
           Ms. Christie Dailo

Encl: Consent, Assent, Confidentiality Notice v. February 21, 2012/expires February 20, 2013

APPENDIX C

Student Assent Form

Facebook Usage and Academic Achievement Students at Dollarway High School:
A Quantitative Analysis.

My name is Celeste Alexander. I grew up in Pine Bluff, Arkansas, and I am a doctoral student at Pepperdine University. I am currently working on research for my dissertation under the supervision of Dr. Eric Hamilton. I have asked your principal and teacher for permission to speak with you about a study I am conducting on how teenagers use Facebook and how they feel about school. I would like to invite you to participate in this study if you are interested. Before I explain more about the study, I want you to know that the choice to participate is completely up to you. No one is going to force you to do something you are not interested in doing. Even if you start the study and decide that you are no longer interested in continuing, just let me know and we will discontinue your participation in the study. Your grade in class will not be affected if you choose not to participate in the study. Your teacher will not be present during study.

Let me tell you about what you will be asked to do if you decide to participate in this study. During one of your class periods, you will complete 2 surveys. One survey takes about 5 minutes to finish. It asks questions about Facebook. The other survey takes about 30 minutes to finish. It asks questions about school. I have asked for a total of 40 minutes for you to complete both surveys.

If you get bored or tired during the survey, just let me know, and we can take a break. It is not a test, so you don't have to worry about getting answers right or wrong. The survey just asks questions about how you feel. I will also talk to your counselor and/or registrar to get information about your current GPA if you agree to participate in the study.

When the results of this study are published or presented to professional audiences, the names of the people who participated in the study will not be revealed. If you have any questions, you may call me at xxx or e-mail me at xxx. You may also contact my dissertation chair, Dr. Eric Hamilton at xxx or send an e-mail to xxx. If you have questions about your rights as a research participant, you can contact Jean Kang, IRB manager at Pepperdine University at xxx or at xxx.

You may keep a copy of this form if you wish.

_____   _____
Youth's signature   Date

_____   _____
Researcher's signature   Date assent obtained

Parental Consent Form

PARENT INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES

Participant/Student Name: _____

Principal Investigator: _Celeste Marie Alexander_____

Title of Project: Facebook Usage and Academic Achievement of Students at Dollarway High School: A Quantitative Analysis

1. I, the parent of_____, agree to allow my child to participate in the research study being conducted by Ms. Celeste Marie Alexander under the direction of Dr. Eric Hamilton for the purpose of the completion of a dissertation by Ms. Celeste Marie Alexander.

2. The overall purpose of this research is to determine if a relationship exists between Facebook usage and academic achievement of high school students.

3. My child's participation will require him/her to complete 2 surveys during one of his/her regularly scheduled classes at Dollarway High School. The first survey is called the Facebook Intensity Scale. The second survey is called ENGAGE. These surveys will ask questions about how my child feels about Facebook and how my child feels about school. The researcher will also meet with my child's counselor and/or registrar to gain information about my grades.

4. My child's participation in the study will take approximately 40 minutes to complete. The study shall be conducted in one of my child's regularly scheduled classes at Dollarway High School.

5. I understand that the possible benefit to society from this research is knowledge about online social networking and how it relates to academic achievement of high school students. I understand that the possible benefit to my child from this research is a better understanding of what my child can do as an individual to improve his/her grades and academic success in school.

6. I understand that there are certain risks and discomforts that might be associated with this research. These risks include the physical risks related to sitting in a classroom environment with others and using pencils or other writing instruments. Emotional or psychological risks are those that might be associated with one feeling judged by responses to the survey questions. There is also a fatigue and boredom factor.

7. I understand that the study will not require recovery time.

8. I understand that my child may choose not to participate in this research.

9. I understand that my child's participation is voluntary and that I may refuse to allow him/her to participate and/or withdraw my consent and discontinue his/her participation in the project or activity at any time without penalty or loss of benefits to which my child is otherwise entitled.

10. I understand that the investigator will take all reasonable measures to protect the confidentiality of my child's records and my child's identity will not be revealed in any publication that may result from this project. However, I must provide written permission that my child's data may be identified in order to score the ENGAGE survey. The confidentiality of my child's records will be maintained in accordance with applicable state and federal laws. Under California law, there are

exceptions to confidentiality, including suspicion that a child, elder, or dependent adult is being abused, or if an individual discloses an intent to harm him/herself or others. I understand there is a possibility that my child's medical record, including identifying information, may be inspected and/or photocopied by officials of the Food and Drug Administration or other federal or state government agencies during the ordinary course of carrying out their functions. If my child participates in a sponsored research project, a representative of the sponsor may inspect my child's research records.

11.	I understand that the investigator is willing to answer any inquiries I may have concerning the research herein described. I understand that I may contact Dr. Eric Hamilton at XXX or XXX. if I have other questions or concerns about this research. If I have questions about my rights as a research participant, I understand that I can contact Jean Kang, IRB manager at Pepperdine University at XXX or at XXX.

12.	I will be informed of any significant new findings developed during the course of my child's participation in this research which may have a bearing on my child's willingness to continue in the study.

13.	I understand that in the event of physical injury resulting from the research procedures in which my child is to participate, no form of compensation is available. Medical treatment may be provided at my own expense or at the expense of my health care insurer which may or may not provide coverage. If I have questions, I should contact my insurer.

14.	I understand to my satisfaction the information regarding my child's participation in the research project. All my questions have been answered to my satisfaction. I have received a copy of this informed consent form which I have read and understand. I hereby consent to my child's participation in the research described above.

_____
Student Name (Please print)

_____
Parent or legal guardian's name (Please print)

_____
Parent or legal guardian's signature

_____
Date

I have explained and defined in detail the research procedure in which the subject has consented to participate. Having explained this and answered any questions, I am cosigning this form and accepting this person's consent.

_____   _____
Principal Investigator   Date