COLLEGE STUDENTS' FRIENDSHIPS, SELF-ESTEEM, AND EXPERIENCE
USING FACEBOOK

by

Justin M. Young

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Thesis Committee

Dr. Monica Wallace, Chair

Dr. James O. Rust

Dr. Teresa L. Davis

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ABSTRACT

The purpose of this study was to determine the relationship between Facebook use, friendship, and self-esteem for college age participants who have had a Facebook account throughout adolescence. Previous research has shown a need to study friendship and self-esteem in relation to Facebook use. Because Facebook has been so pervasive, and friendship and self-esteem so integral to adolescent development, it was important to examine how these constructs related to one another. The present study examined 96 undergraduate college students' Facebook use, friendship, and self-esteem through online questionnaires. This study had important results including a positive correlation between number of Facebook friends and friendship intimacy, which was unexpected considering that past research on Facebook, friendship, and self-esteem indicated otherwise. The present results support the conclusion that friendship as an overall construct might be changing, which could also mean that Facebook has played a role in how we form, maintain, and view friendships.

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CHAPTER I

Introduction

Overview

Social media, also known as social networking, is pervasive making it difficult not to use (Ahn & Shin, 2013). Because social media research is somewhat of a new field, researchers are still trying to learn the overall uses and effects of social media (Lewis & West, 2009). Twitter is advantageous for political mobilization (Dabner, 2012); Facebook, Twitter, and YouTube, are a substantial source for news (Weeks & Holbert, 2013); Youtube has educational advantages with learning videos (Everhart, 2009). Facebook is playing a dramatic role in how people communicate with each other and how people develop friendships (Dabner, 2012). Social networking sites have increased the number of possible human connections and made social connections more easily attainable than before (Lewis & West, 2009).

Friendship is an important aspect of life across the lifespan. Healthy friendships are related to better psychosocial adjustment (Bagwell et al., 2005). Friendships are useful to learn important emotional skills, practical skills, and moral reasoning (Carter, Asmus, & Moss, 2013; Healy, 2011). Both quantity and quality of friendships have been shown to be significantly and positively correlated to college adjustment for freshmen students (Buote et al., 2007).

Facebook is one of the most popular social networking sites and studies show that as many as 98% of college students have a Facebook account (Lee, 2012). Facebook centers around 'friending' and allowing users to communicate in various ways (Ellison, Steinfield, & Lampe, 2007). Facebook users can create a Facebook profiles for others to

see, look at other users' profiles, gather online friends, and interact with those friends sending messages, comments, and gifts (Ellison et al., 2007; Kalpidou, Costin, & Morris, 2011). Facebook users can join online groups or pages based on similar interests, see each others' events, and learn each others' hobbies, relationship status, and other personal information (Ellison et al., 2007).

Due to the importance of friendship and its positive correlations on psychosocial adjustment, combined with the pervasiveness of social networking sites such as Facebook, it is important to find out the relationship that the pervasiveness of Facebook use has with friendship intimacy. Researchers speculate that Facebook is popular because it creates a low stress environment for people to get to know one another (Hsu, Wang, & Tai, 2011). This could be problematic when the relationship between Facebook and self-esteem is considered.

Some researchers have noted that social media cannot replace face-to-face communication, because it does not have the same benefits, such as emotional support (Ahn & Shin, 2013). Other researchers have noted that whether or not internet use will be seen as positive or negative is dependent on how it helps users develop strong versus weak ties (Kraut et al., 1998). Strong ties are friendships that are considered intimate, with deep feelings of connection and commitment, involving frequent contact, and are supported by physical proximity. Conversely, weak-ties are seen as easily broken, casual, with rare contact (Kraut et al., 1998). Weak ties are useful in linking people to resources, information, and events (Ellison et al., 2007; Kraut et al., 1998). However, it is strong ties that are useful in providing intense psychological and emotional support that improves psychological well-being (Kraut et al., 1998).

Though Facebook is the most popular social networking site among college students and is so pervasive, there is very little research about its relationship to psychological well-being (Kalpidou et al., 2011). The social compensation hypothesis proposes that lonely people are more likely to substitute online communication for face-to-face interaction than people who are not lonely (Valkenburg & Peter, 2007). Yet, results show that participants who reported using social media to mitigate feelings of social isolation only exacerbated their feelings of social isolation (Ahn & Shin, 2013). Consistent with the social compensation hypothesis, people with low self-esteem are more likely to have more friends on Facebook than people with high self-esteem and fewer friends on Facebook, because they need to compensate for their low self-esteem (Lee, Moore, Park, & Park, 2012). Researchers have found that respondents with low self-esteem are nearly three times more likely to reveal intimate information online than participants with high self-esteem and 16.3% of respondents with low self-esteem said that online friends knew things that they could not share with real-life friends (Zywica & Danowski, 2008). Similarly, respondents with low self-esteem think that it is important to look popular on Facebook (Zywica & Danowski, 2008).

The paradox is that the main function of the internet has become an outlet to increase social connection, but internet use is correlated with declines in face-to-face communication and psychological well-being that go with social involvement (Kraut et al., 1998). The concern around Facebook is that people are motivated to use it for social connection, but it may actually displace strong ties and substitute weak tie friendships, because of the convenience and low-commitment (Kalpidou et al., 2011; Lewis & West, 2009). In other words, social media can increase the ease and possibility of human

connection, but does not act as channel to strengthen relationships that are characterized by emotional and intimate bonds.

The purpose of this study is to research the possible problematic use of social media to enhance friendships. Questions targeted to be answered in the current study include the following: (a) Do people who report strong intimate friendships have fewer Facebook friends? (b) Do people who report fewer intimate friendships have low self-esteem? (c) Do people with low self-esteem report having more friends on Facebook than people with high self-esteem?

Internet Use and Social Media

Internet use has increased exponentially in the past 15 years. In 1997, the first time the US census included internet survey questions, 18% of people reported that they accessed the internet at home (File, 2013). By 2001, this rate increased to 50.4% and in 2011, 71.7% of individuals reported home internet use (File, 2013). The internet has become intertwined with the daily activities of people's lives, from email to other forms of social media including such things as Facebook, Twitter, and MySpace. The increase in internet use has promoted a level of connectedness that is widely considered a result of social media use (Konrath, 2012).

Definitions of social media vary but tend to focus on technology that allows communal sharing of information (Kushin & Yamamoto, 2010). For example, Correa, Hinsley, and de Zuniga (2010) defined social media as a digital means for people to communicate and interact. Social media also has been conceptualized as interactions based on the online sharing of words, pictures, videos, and audio (Dabner, 2012). Similarly, Bowman, Westerman, and Claus (2012) defined social media as a user-driven

form of disseminating information. This is in contrast to the past, where media companies have typically controlled information. Social media allows the user to disseminate information, through a form of sharing with friends and acquaintances online. Essentially, user control delineates social media from other forms of media (Correa et al., 2010). Though there are a variety of definitions, researchers generally agree that social media consists of communal interaction often in the form of sharing or disseminating user-driven information, personal or otherwise (Bowman et al., 2012; Correa et al., 2010; Kushin & Yamamoto, 2010).

Social media research is a fairly new field and social media researchers are still learning about the uses and effects of social media (Lewis & West, 2009). Facebook, Twitter, and YouTube, are a substantial source for news (Weeks & Holbert, 2013). During natural disasters, in a very short of amount of time, personal and informational accounts of the events are on social networks sites such as Facebook (Dabner, 2012). YouTube has numerous and varying types of videos including, historical, cultural, individual development, and educational. Examples include videos that show an interview with Rosa Parks or the moon landing (Everhart, 2009; Jones & Cuthrell, 2011). Youtube has educational advantages with learning videos that can be useful in the classroom (Everhart, 2009). Facebook, with its emphasis on 'friending,' is playing a dramatic role in how people develop friendships and communicate with one another (Dabner, 2012). For example, people can be become friends online without ever seeing in each other face-to-face.

Social networking sites have increased the number of possible human connections and made social connections more easily attainable than before (Lewis & West, 2009).

Social media accounts for roughly a quarter of the amount of total time spent on the internet (Konrath, 2012). Seventy-two and a half percent of people use social media and 80% of people online regularly participated in social media (Correa et al., 2010).

The literature suggests that Facebook is the most popular social media site (Konrath, 2012). Ninety-eight percent of university students have a Facebook account (Lee, 2012). According to Facebook's website and information about company information (resource taken from https://newsroom.fb.com/Key-Facts), Facebook has 655 million daily active users on average and 1.11 billion monthly active users as of March 2013. Facebook users self-reported spending an average of 10-30 minutes a day on Facebook and having 150-200 friends online (Ellison et al., 2007). Facebook was created in 2004, open only to college students at Harvard and then to other schools in the Boston area. In September 2006, Facebook was opened to everyone 13 years and older with a valid email address.

Facebook Use Comparison Data

In a study of 800 undergraduate students, researchers looked at several different questions to measure the degree of Facebook use using the Facebook Intensity (FBI) scale. There are two main questions asked that pertain to the current study. For the question, "About how many total Facebook friends do you have?" the mean score on the FBI scale was 4.39 (SD = 2.12). Responses were based on a Likert scale from 0 to 8 (0 = 10 or less, 1 = 11-50, 2 = 51-100, 3 = 101 = 150, 4 = 151-200, 201 = 250, 6 = 251-300, 7 = 301-400, 8 = more than 400). Thus, undergraduate students reported having an average of 151-200 Facebook friends (Ellison et al., 2007). Researchers looking at Facebook use, loneliness, substance abuse, and anxiety using a sample of 229 undergraduate students

found that the average range of number of Facebook friends was between 301 and 400 (Clayton, Osborne, Miller & Oberle, 2013).

For the question, "In the past week, on average, approximately how many minutes per day have you spent on Facebook?" the mean score on the Friendship Intensity questionnaire was 1.07 (SD = 1.16). This item was measured on the following Likert scale (0 = less than 10, 1 = 10-30, 2 = 31-60, 3 = 1-2 hours, 4 = 2-3 hours, 5 = more than 3 hours). Undergraduate college students spent an average of 10-30 minutes on Facebook per day (Ellison et al., 2007). Additionally, researchers found that the average amount of time participants spent on Facebook was between 30 minutes and 1 hour (Clayton et al., 2013).

Facebook Cohort and Adolescent Development

A review of adolescent behavior and internet use in the past shows that social media is a pervasive part of the lives of adolescents. Eighty-two percent of adolescents use social media to stay in touch with friends, 49% use social media to make new friends, and 72% use social media to make new plans with friends (Lenhart & Madden, 2007). There has not been research identified on the long-term effects of having a Facebook account for an extended period of time. For example, if someone got a Facebook account when it first became available at age 13, that user would be 20 now, and would have had Facebook for seven years. In 2008, 38% of 12-14 year olds had an online social media profile, while 77% of 15-17 year olds had an online social networking profile (Lenhart, Madden, Smith, & Macgill, 2009). Thus, long-term use has occurred, but as noted above the relationship with friendship has not thoroughly been investigated.

Adolescence is a time of identity formation (Pujazon-Zazik & Park, 2010) with multiple stages. Each stage of adolescence (i.e., early, middle, and late) is characterized by different tasks and each stage is a fundamental time for identity development. Facebook use during adolescence could be problematic.

The main concern of early adolescence, the time frame from age 11 to 14, is described as developing a sense of belonging, which includes dealing with conformity, peer pressure, and a new moral reasoning (Barrett, 1996). Additional stressors include events such as puberty and the switch from elementary school to middle school. These challenges can effect other areas of life, such as self-esteem (Bernstein & Nash, 2008). Another important aspect of adolescence is forming an identity. A change from childhood to early adolescence brings a change in how one describes his/her own identity. For example, preschoolers talk about identity in terms of activities they like to do. Conversely, at around the beginning of adolescence, students describe themselves in personal or social terms (Bernstein & Nash, 2008).

During the transition from early to mid-adolescence, the adolescents' behavior at home may strain family relationships (Bernstein & Nash, 2008). The main concern of middle adolescence (ages 14 – 16) is described as developing a unique identity and the time period is characterized by joining cliques, becoming competitive, and possibly falling in love (Barrett, 1996). The main concern in the late adolescence stage is feeling worthy and it is characterized by being more socially conscious than in early and middle adolescence. Additionally, late adolescence is a time for having nostalgic feelings for the safety of childhood (Barrett, 1996). Stressors in late adolescence (ages 17-19) include graduating high school, forming new relationships in college, and becoming aware of

familial obligations (Bernstein & Nash, 2008). Adolescents in this stage strive toward their own personal standards but are also encumbered by societal and academic pressures (Barrett, 1996).

Each consecutive stage of adolescence is a hectic and pivotal period of life with additional life demands, such as dealing with puberty or going to college. Social demands, such as identity formation, falling in love, or avoiding peer pressure are all likely to be effected by social media. For example, how someone interacts online might be misconstrued and effect face-to-face interactions. These challenges are complicated in and of themselves, and when adolescents live and negotiate these changes via social media this adds another layer of challenges (Bernstein & Nash, 2008).

Creating an identity online is one of the key aspects of social media (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011). Social media users reveal their personal information, such as name, gender, profession, hobbies, and other defining qualities to show who they are. This personal information is a way for people to create an online image and express themselves to others (Kaplan & Haenlein, 2010). Social connection over the internet alters the way adolescents form identities because the internet allows anonymity (Pujazon-Zazik & Park, 2010). Additionally, social media, such as Facebook, allows users to present themselves in ways they can't do in real life (Pujazon-Zazik & Park, 2010). Due to the anonymous nature of social media and the ability to try on multiple selves in different settings, research has shown that adolescent's distinct online experiences may make it increasingly difficult to combine the many aspects of ones personality into a coherent identity. Participants who reported that they go online to explore varying parts of their personality also reported low self-concept clarity, in that,

their self-beliefs were not clearly defined or consistent compared to respondents with high self-concept clarity (Davis, 2013). Additionally, having a fragmented identity may make it complicated to develop friendships characterized by strong-ties.

No longitudinal research identified the relationship of Facebook on adolescents. However, longitudinal research has identified personal characteristics that relate to internet use. For example, in a longitudinal study with a duration of 6 months, researchers found that adolescent use of the internet, such as instant messaging, surfing, gaming, emailing, etc., were associated with a decrease in psychological well-being 6 months later (van den Eijnden, Meerkerk, Vermulst, Spijkerman, & Engels, 2008). In another study on internet use and psychological well-being, internet use was associated with declines in psychological well-being during the first 1-2 years of internet use. However, during the next twelve months, internet use was associated with smaller declines in psychological well-being, displaying that there was a diminished relationship of internet use with psychological well-being over time (Subrahmanyam, Greenfield, Kraut, & Gross, 2001). Thus, it seems reasonable to infer that social media might have a similar diminished relationship with psychological well-being, because social media is internet based.

Face-to-face Communication, Connection

Researchers have noted that social media cannot replace face-to-face communication, because it does not provide the same level of emotional support (Ahn & Shin, 2013). Compared to face-to-face communication, the internet has limited methods (i.e., typed words and symbols), of expressing emotions and communicating thoughts (Moody, 2001). Conversely, face-to-face communication has spoken words, tone, and facial expressions that can convey a wider array of feeling and meaning (Moody, 2001).

The fewer methods that are being used to communicate, the more impersonal the communication and the more detached the listener is likely to be than when more methods are being used (Moody, 2001). The interaction is convenient, in that, the listener does not have to pay attention to the same degree as if they would have to if it were face-to-face communication. If the listener is not fully engaged because fewer methods of communication are being utilized, this could promote weak-tie friendships.

In another study, researchers attempted to identify the primary reasons for internet use. A dichotomy was found in that some respondents used the internet to connect or affiliate and other respondents used the internet in a more practical sense, such as to obtain information or goods (Weiser, 2001). Respondents, who had used the internet because of a need to connect actually saw declines in social integration (i.e., community and social activity) along with social support strength. Internet users that were motivated to learn tended to be socially integrated (Weiser, 2001). This implies that using the internet to socially connect can actually displace stronger social integration. Social integration encourages strong-tie relationships, because community and social activity are key characteristics of social integration.

Past researchers have noted that whether or not internet use will be seen as positive or negative is dependent upon how it helps users develop strong versus weak ties (Kraut et al., 1998). Strong ties are friendships that are considered intimate, with deep feelings of connection and commitment, involving frequent contact, and are supported by physical proximity. Conversely, weak-ties are seen as easily broken, casual, with rare contact (Kraut et al., 1998). Weak ties are useful in linking people to resources, information, and events (Ellison et al., 2007; Kraut et al., 1998). However, it is strong ties that are useful in

providing intense psychological and emotional support that improve psychological well-being (Kraut et al., 1998)

Researchers have discovered some differences between face-to-face communication and communication through social media. In a study done with adults ranging in age from 19 to 39, participants completed a survey that asked questions about the amount of face-to-face communication, media use, social isolation and connectedness. Respondents reported that face-to-face communication had an indirect effect on subjective well-being because it encouraged both connectedness and avoiding social isolation. However, communication through social media only encouraged connectedness, but it did not encourage avoiding social isolation (Ahn & Shin, 2013). Thus, seeking connection may motivate users to spend more time on social media, but it cannot replace face-to-face communication, because it does not provide the emotional support that negates social isolation (Ahn & Shin, 2013). This goes along with the concept of weak ties and that communication through social media does not require commitment.

Friendship

Put simply, friendship is a voluntary, interpersonal relationship between multiple people. However, multiple researchers have noted that it is understood that friendship has varying meanings across individuals (Adams, Blieszner, & DeVries, 2000; Mikami, 2010). Friendships can be positive or negative relationships that have an effect on one or more parties (Mikami, 2010). Friendships do not come with a "rule book" and they are often dynamic and evolving (Healy, 2011). As a result, friendships vary greatly across individuals and develop and mature in various ways. Similarly, some have noted that

researchers lament comparing friendships, because of the varying nature of friendships (Adams et al., 2000). Additionally, researchers have noted that the choice of friendship is voluntary, unlike family, classmates, or coworkers (Adams et al., 2000; Haytko, 2004). Friendships usually develop without intentional effort (Carter et al., 2013). Friendship formation is also the result of variables people do not have much control over like proximity or homophily. Homophily, or having similar traits such as gender or age, is a major contributing factor to the creation of friendships and people are more likely to form interpersonal relationships with people of their same age, race, and gender than they are with people of different demographics (McPherson, Smith-Lovin, & Cook, 2001). Friendships are not random and proximity plays a major role in the forming of friendships (Healy, 2011; Morimoto & Yang, 2013) Due to the complex nature of friendships, defining them is not easily done. However, researchers do agree that certain traits are found in most friendships, such as homophily, mutual or voluntary choice, and that friendships are often unique.

Despite the wildly varying nature of people's friendships, there are some commonalities. In a study of people 55 and older who were asked to define friendship, respondents considered aspects such as self-disclosure, sociability, day-to-day assistance, and shared activities to be important aspects of friendship (Adams et al., 2000). Similarly, personal disclosure was found to be a major component of friendships in a study done on the workplace environment (Haytko, 2004). In a study done at Cambridge with 76 participants, researchers noted that good friendships, noted by a high score on the Friendship Questionnaire (FQ), involve people who have personal and empathic friendships, who find interests in each other, and enjoy social interaction (Baron-Cohen

& Wheelwright, 2003). Despite the varying forms of friendships, researchers do agree that a key component of friendship is that it's voluntary and includes mutual intimacy and personal self-disclosure.

Friendship Questionnaire Comparison Data

In a study using the Friendship Questionnaire (FQ) to look at friendship intimacy among adults, the median FQ score was 70 or higher and all scores fell between 30 and 120. The mean score on the FQ score for male participants was 70.3 (SD = 15.7). The mean FQ score for female participants was 90.0 (SD = 16.1). Additionally, 85.7% of female participants scored above the medium FQ score of 70 or higher (Baron-Cohen & Wheelwright, 2003). In a different study looking at friendship quality among 236 students from a Western Canadian University, the mean FQ score for male participants was 82.9 (SD = 15.26). The mean FQ score for female participants was 94.55 (SD = 13.45). The range of scores fell between 33 and 165 (Watson, 2012). The mean scale score for the male participants in the college sample is higher, possibly implying that male college students report having better friendship quality on the FQ compared to adults. However, for both studies, female participants scored significantly higher than male participants on the FQ (Baron-Cohen & Wheelwright, 2003; Watson, 2012).

Friendship Importance

Friendship is an important aspect of life across the lifespan. Friendships that youth have with people who share the same interests are correlated with their overall experiences and quality of life (Carter et al., 2013). Friendships are building blocks for students to gain functional skills and moral reasoning (Carter et al., 2013; Healy, 2011). Because friendships are central to learning the necessary everyday skills, research reveals

that positive friendships are related to healthier psychosocial adjustment (Bagwell et al., 2005). Adults who had no or few friends as children reported worse health than adults who had a greater number of friendships in childhood (Almquist, 2012). In their study of several hundred adults, Powers, Ressler, and Bradley (2008) found that adult depression was negatively correlated with perceived friend support. Perceived friend support predicted lower levels of depression for female respondents who reported a history of emotional abuse or neglect. In the same study, researchers found that friend support predicted lower levels of depression for males who reported a history of emotional abuse (Powers, Ressler, and Bradley, 2008). As previously noted, both quality of friendships and the number of friends was significantly correlated to adjustment to college for freshmen students (Buote et al., 2007).

Friendship and Facebook Use

Researchers speculate that Facebook is popular because it creates a low stress environment for people to keep in touch and to get to know new acquaintances (Hsu et al., 2011). The research on social media use reveals multiple reasons for Facebook use, but the most popular reason for Facebook use was to keep in touch with friends and to meet friends. The main uses for Facebook reported by 1,440 university students was to keep in touch with friends from high school and find out more about someone he/she had met socially (Lampe, Ellison, & Steinfield, 2006). In this aspect, Facebook is used to keep in touch with people that are not a part of users' everyday lives. In a similar study that involved surveying several hundred undergraduate participants once a year in 2006, 2007, and 2008, keeping in touch with friends was the primary motivation for Facebook use (Steinfield, Ellison, & Lampe, 2008). In another study done with university students,

researchers found that university student's main motivation for Facebook use was keeping in touch with old friends and planning social events (Madge, Meek, Wellens, & Hooley, 2009). In a study of 161 adults, researchers found that Facebook was used to become increasingly familiar with new friends and not to become increasingly familiar with close friends (Hsu et al., 2011). Though there are multiple and varying reasons for getting on Facebook, the research shows that the main motivation for Facebook use is to keep in touch with friends from high school and/or to get to know new acquaintances. This is consistent with the idea that Facebook use typically involves low commitment, because it allows users a casual and easy way to keep in touch with high school friends and it allows users to make new connections from the convenience of their computer or other electronic device.

Facebook and Self-Esteem

When constructs such as self-esteem are considered, the way Facebook users connect and maintain friendships online could be problematic. For example, the social compensation hypothesis proposes that lonely people are more likely to utilize online communication and substitute online communication for face-to-face interactions than are people who are not lonely (Valkenburg & Peter, 2007). Participants who reported using social media to mitigate feelings of social isolation, only exacerbated their feelings of social isolation (Ahn & Shin, 2013). Consistent with the social compensation hypothesis, people with low self-esteem are more likely to have more friends on Facebook to compensate for their low self-esteem than are people who have high self-esteem (Lee et al., 2012). In a study that looked at the social compensation hypothesis, researchers found that people with low self-esteem think that it's important to look

popular on Facebook (Zywica & Danowski, 2008). Additionally, participants with low self-esteem are nearly three times more likely to reveal intimate information online than participants with high self-esteem and 16.3% of participants with low self-esteem said that online friends knew things that they could not share with real-life friends (Zywica & Danowski, 2008). This is problematic because it replaces the intimacy and emotional connection of real life friends with online friends, who have not been shown to offer the same emotional support as real life friends (Kalpidou et al., 2011) and this may correlate with self-esteem. Real life friends can offer proximity and shared experiences, such as going to the movies during a tough time as way to relax and have fun.

Self-esteem is fundamentally an evaluation of one's worth. Rosenberg (1965) defined self-esteem, as a global evaluation of one's worth which can be positive or negative. Similarly, Baumeister, Campbell, Krueger, and Vohs (2003) noted that self-esteem is the value a person puts on his/herself and does not require any sort of accuracy. It is a perception or evaluation of a person's self, based off of the knowledge they possess about themselves. As a result, it can be grounded, inflated, or distorted (Baumeister, Campbell, Krueger, & Vohs, 2003).

Rosenberg Self-Esteem Scale (RSES) Comparison Data

In a study of 117 first year undergraduate students, participants reported a mean score of 29.13 (SD = 4.29) on the Rosenberg Self-Esteem Scale (RSES). The minimum score was a 17 and the maximum score was a 38. The RSE is a ten point scale on Likert scale from 1-4, giving it a range of 10 (low self-esteem) to 40 (high self-esteem). This sample has moderate to high self-esteem, which may indicate that university students

may report moderate to high self-esteem on the Rosenberg Self-Esteem Scale (Topham and Moller, 2011).

Self-Esteem Importance

Self-Esteem is widely considered to be an important variable related to significant life outcomes. Studies have shown that self-esteem can affect various parts of life throughout the adult lifespan, including marriage satisfaction and occupational success (Katariina & Jari-Erik, 2007; Murray, Rose, Bellavia, Holmes, & Kusche, 2002). For example, in a study of 214 heterosexual participants that had been married at least one year survey results indicated that self-esteem was positively associated with marriage satisfaction (Shackelford, 2001). The results of that study showed that male's low self-esteem was significantly correlated with female spouse's infidelity (Shackelford, 2001). Additionally, a husband's insult on his wife's physical attractiveness was the most significant predictor of female self-esteem. The studies show that there is a significant relationship between self-esteem and marital satisfaction (Shackelford, 2001).

Similarly, in a study of 104 people with an average of 19.9 months in a relationship, participants with low self-esteem showed greater anxiety and less confidence in the relationship if presented with possible causes for conflict (Murray et al., 2002). Participants with low self-esteem reported significantly less confidence than participants with high self-esteem in an experiment in which the participants were told that people eventually learn about their partner's negative sides and they are often a source of conflict. Respondents were asked to answer questions about their own behavior, such as, "in terms of my personal habits or behaviors [personal preferences or opinions, personality characteristics, private thoughts, past], I try to keep my partner from

seeing…" (Murray et al., 2002, p. 559). Thus, the participants had to consider hidden parts of their character and were told that partners potentially discover hidden aspects of each other's characters, which could cause conflicts (Murray et al., 2002). Participants with high self-esteem considered their partner significantly more favorably than did participants who reported low self-esteem. This shows that people with higher self-esteem are more likely to have confidence in their partners and their relationships than are people with low self-esteem (Murray et al., 2002).

As part of an ongoing study of 297 undergraduates, ages 18 to 25, researchers found that self-esteem during college predicted workplace circumstances 10 years later (Katariina & Jari-Erik, 2007). Undergraduates were surveyed their first year in school and at various times during college and then a follow up survey ten years later was completed. Researchers found that self-esteem during university years significantly predicted unemployment, salary, and whether the work was permanent or temporary. Participants that reported higher self-esteem in college were more likely to be permanently employed and have a higher salary than people with low self-esteem (Katariina & Jari-Erik, 2007). In a longitudinal study done with participants ages 18-96, it was found that low self-esteem is strongly correlated with depressive symptoms throughout the adult lifespan (Orth, Robins, Trzesniewski, Maes, & Schmitt, 2009). The participants were split up into cohorts of ages 18-29, 30-29, 40-49, 50-59, 60-69, and 70 years and older. For each cohort, self-esteem predicted depressive symptoms, but depressive symptoms did not predict low self-esteem (Orth et al., 2009). These studies and others suggest that self-esteem is an important variable that can relate to significant aspects of one's life at various moments throughout development.

Facebook Use and College Students

Though Facebook is the most popular social networking site among college students and use is so pervasive, there is little research about its relationship with psychological well-being (Kalpidou et al., 2011). Recently, researchers have begun to investigate the relationship between social media and self-esteem. In a study with 70 undergraduate students, researchers found that number of Facebook friends was negatively correlated with emotionally adjustment to college (Kalpidou et al., 2011). Additionally, there was a significant negative correlation between emotional connection and self-esteem ($r_{35} = -0.39$, $p < 0.05$, $f^2 = 0.18$). That is, upper class participants (junior and senior students) that reported having an emotional connection to Facebook, such as telling people they are proud to be on Facebook, had lower self-esteem (Kalpidou et al., 2011). In a different survey of 234 undergraduate students, self-esteem had a significant negative correlation with the number of Facebook friends (Lee et al., 2012). The research shows that it is possible that low self-esteem may motivate participants to use Facebook more, but may also be related to decreases in self-esteem.

University students have more reasons to use Facebook than high school students, such as staying in touch with high school friends and meeting new people (Lampe, Ellison, and Steinfield, 2006), possibly heightening the potential problematic outcomes of Facebook use. In a study of 213 undergraduates students, researchers found that 55% of respondents self-reported they used Facebook to make new online friends before starting college and undergraduate students had an average of 81 virtual friends in the University Facebook network (Madge et al., 2009). Consistent with the concept of weak ties, just because they were friends on Facebook did not mean they were friends in real life

(Madge et al., 2009). Facebook has also been shown to be useful in creating and maintaining social capital, which refers to the possible resources obtained from relationships, such as information about classes or social gatherings (Ellison et al., 2007).

In a study of freshmen college students, participants were asked questions about how they used Facebook during their first year and before starting college (Madge, Meek, Wellens, & Hooley, 2009). Sixty-two percent of respondents said that they used Facebook for different purposes than in high school. For example, respondents said they used Facebook to make social connections and enhance their experiences at college by posting pictures and planning social events (Madge et al., 2009). Facebook was an integral part of the social life on campus (Madge et al., 2009). Similarly, Facebook allows students to find out information that might help them with their academic careers (e.g., finding other students that are also in the same class) (Ellison et al., 2007). Though there is research on university students and Facebook use, as noted before, little is known about user's reasons for Facebook use prior to the university setting (Madge et al., 2009). High school students may have more day-to-day access to their friends than college students, due to the different nature of a high school setting and campus setting. This may change reasons for using Facebook. As noted before, proximity plays a part in developing strong ties (Kraut et al., 1998). Thus, the motivation to utilize Facebook might be stronger for university students, due to large size and number of students on a university campus.

Summary and Study Rationale

Facebook is a popular social networking site that has recently played an integral role in the creation and maintenance of friendships. Facebook's key features revolve around the aspect of "friending" other users and interacting with them in the multiple

ways Facebook allows (Ellison et al., 2007). The paradox is that the main function of the

internet has shifted to becoming an outlet to increase social connection through social

media, but internet use is correlated with declines in face-to-face communication and

psychological well-being that go along with social involvement (Kraut et al., 1998). For

example, as discussed earlier, both quality of friendships and the number of friends was

significantly positively correlated with adjustment to college for freshmen students;

however, number of Facebook friends was negatively correlated with emotional

adjustment to college (Buote et al., 2007; Kalpidou et al., 2011). This implies that while

motivation may be high to join Facebook, and Facebook is useful in creating weak-ties

(Ellison et al., 2007), it could be problematic. If people are motivated to use social media

due to low self-esteem, this may create a problematic cyclic effect because social media

has not been shown to improve psychological well-being (Kalpidou et al., 2011). Much in

the same way, Moody found that high levels of internet use were correlated with low

levels of social loneliness, but higher levels of emotional loneliness (Moody, 2001).

People are motivated to use Facebook for social connection, but it may actually displace

strong ties and substitute weak tie friendships, because of the convenience and low-

commitment (Kalpidou et al., 2011; Lewis & West, 2009). In other words, social media

can increase the ease and possibility of human connection, but does not act as channel to

strengthen relationships that are characterized by emotional and intimate bonds.

The current study includes a cohort of college students who went through early and

middle adolescence stages using Facebook or some other social media site. This could

enhance the problematic behavior if Facebook use is more ingrained than with students in

the past, in part because how and why high school students use Facebook (Madge et al.,

2009) and the possible relationship with identity development.

Another rationale for the current study is that only a few studies have looked at the relationship between self-esteem and Facebook use. For example, studies have shown that people with low self-esteem want to look more popular on Facebook and are more likely to have more Facebook friends than people with high self-esteem and fewer friends on Facebook (Lee et al., 2012; Zywica & Danowski, 2008). Though informative, those studies did not look at whether or not those students had Facebook for several years or the duration that they used Facebook throughout adolescence. It is possible that students with a longer duration of Facebook use will report having fewer intimate friendships, due to the ability of the internet to displace strong tie relationships (Kalpidou et al., 2011). Because this cohort went through most of their adolescence having the opportunity to use Facebook, there might be a pronounced discrepancy between students with strong, intimate friendships then those with weak, low-commitment friendships. It is also possible that's some students might think that it is normal to have mostly weak-tie friendships.

Hypotheses

Hypothesis 1

It was predicted that participants who scored lower on the Friendship Questionnaire (FQ) would report having more Facebook friends on the Facebook Intensity (FBI) scale than participants who scored higher on the FQ, supporting the notion that Facebook promotes weak ties and displaces strong ties

Hypothesis 2

It was predicted that participants who reported having more Facebook friends on

the Facebook Intensity (FBI) scale would report having lower self-esteem on the

Rosenberg Self-Esteem Scale (RSES) than participants who reported having fewer

Facebook friends on the FBI scale.

Hypothesis 3

It was predicted that participants who report longer duration of Facebook use (i.e.,

using a Facebook account for several years) would report a.) more time spent on

Facebook daily than participants who reported shorter duration of Facebook use, b.) more

Facebook friends on the Facebook Intensity (FBI) scale than participants who reported

shorter duration of Facebook use, and c.) lower levels of friendship intimacy on the

Friendship Questionnaire (FQ) than participants who reported shorter duration of

Facebook use.

Hypothesis 4

It was predicted that participants who reported longer duration of Facebook use

(i.e., using a Facebook account for several years) would report lower self-esteem on the

Rosenberg Self-Esteem Scale (RSES) than participants who reported shorter duration of

Facebook use.

CHAPTER II

Method

Participants

The participants for this study were students enrolled in an undergraduate Introduction to Psychology course at Middle Tennessee State University (MTSU). Participants were recruited by the Psychology Department at MTSU. Students enrolled in the introductory course are required to complete a specified amount of hours as participants in studies through MTSU. This study fulfilled part of that class requirement. The majority of the students were incoming freshmen students. The age range for the participants in this study was 18-21.

Procedure

Institutional Review Board (IRB) approved study procedures (see Appendix A). No Permission was required to use the Rosenberg Self-Esteem Scale (RSES) or the Facebook Intensity (FBI) scale (see Appendix B). The researcher obtained necessary approval to use the Friendship Questionnaire (FQ) (see Appendix C). Together the surveys (described below) took thirty minutes to complete. Participants accessed the three surveys by logging on to the Sona System using their MTSU identification information. After they logged on to the Sona System they accessed the surveys about Facebook use, friendship, and self-esteem. After the participants accessed the survey on the Sona System, they followed the directions on the surveys. The Sona System provided the students with the necessary information on how to complete their research participation cards so that they received their class credit.

Measures

  The materials used in this study were a collection of three surveys about friendship, Facebook use, and self-esteem. The first measure completed was the Rosenberg Self-Esteem Scale (RSES). The second measure participants completed was the Friendship Questionnaire (FQ). The third measure that participants completed was the Facebook Intensity (FBI) scale.

Rosenberg Self-Esteem Scale

  This scale measured one's reported self-worth. The questionnaire consisted of ten items, five of which were described in negative qualities and five of which were described in positive qualities. Participants answered questions on a four-point scale ranging from strongly agree to strongly disagree. The scale was originally designed as a Guttman scale, and it was commonly used as a Likert scale scored from 0 to 3. The RSES is split into two subscales: RSES positive and RSES negative. Examples of RSES positive items are "I feel that I have a number of good qualities," and "On the whole, I am satisfied with myself." Examples of RSES negative items are, "I feel I do not have much to be proud of," and "All in all, I am inclined to feel that I am a failure" (Rosenberg, 1965).

  Reliability and validity have been established across age groups and in different countries. One study found with a German sample of 4,988 participants with ages ranging from 14 to 92 showed that the Rosenberg SES has adequate reliability and validity (Roth, et al., 2008). Cronbach's alpha for the total scale was .88. Cronbach's alpha for the two subscales was RSES-negative .86 and RSES-positive was .88 (Roth, et al., 2008). Another study, using a sample of 391 adults ages 19 to 90, found Cronbach's alpha for

the total scale was 0.83 (Lundman, et al., 2011).

Friendship Questionnaire

The FQ consists of 35 questions. The FQ was designed for use with adults of normal intelligence. The Friendship Questionnaire was designed to be easy to easy and straightforward to administer and score. The authors of the survey were also concerned about making a survey that was neutral in regards to male and female friendships due to issues with type of relationships skewing the results. A high score on the FQ indicated that the respondent appreciated friendships that were intimate, empathic, and supportive.

Two purposes of the study reiterated below were to establish validity and measure friendships in different groups of people. Two studies were done to look for sex differences in friendships in the general population and to find evidence that autism was just an extreme form of the male right brain. Study 1 was done with participants from the general population, including students and professionals (n = 76). The Friendship Questionnaire has high internal consistency. For Study 1, with the control population, Cronbach's alpha was calculated as 0.75, signaling adequate internal consistency. Study 2 was used with participants with Asperger Syndrome or high-functioning autism. Cronbach's alpha was calculated as 0.84. Furthermore, the FQ positively correlated with the Empathy Questionnaire and negatively correlated with an Autism Questionnaire; these findings add to the construct validity (Baren-Cohen & Wheelwright, 2003).

Facebook Intensity Scale

The FBI scale (Cronbach's alpha = .83) consisted of eight Likert-scale questions that quantify the extent to which the respondent is emotionally connected to Facebook (Ellison, Steinfield, & Lampe, 2007). The questionnaire had two questions that address

the amount of friends and time spent on Facebook: "Approximately how many total Facebook friends do you have?" and "In the past week, on average, approximately how much time per day have you spent actively using Facebook?" In the original study, responses were based on a Likert scale from 0 to 8 (0 = 10 or less, 1 = 11-50, 2 = 51-100, 3 = 101 = 150, 4 = 151-200, 201 = 250, 6 = 251-300, 7 = 301-400, 8 = more than 400). In the current study, two additional categories were added (8 = 401-500, 9 = 501-600, 10= 601 or more). The creators of the original survey gave permission to alter the numbers as needed depending on the population (See Appendix B). The scale also asked questions that are meant to derive the extent to which respondents experience an emotional connection to Facebook, such as, "I am proud to tell people I am on Facebook," and "I would be sorry if Facebook shutdown." Other questions are meant to tap the extent to which Facebook is an integral part the participant's daily routine, "I feel out of touch when I haven't logged onto Facebook for a while" and "Facebook has become part of my daily routine."

CHAPTER III

Results

Descriptive Data

Age range for the 95 participants was between 18 and 21 years old. As Table 1

shows, a total of 64% of the participants had owned a Facebook account since they were

15 years old or younger. Table 2 shows that most of the participants have had a Facebook

for four or more years. The mean number of years each student had owned a Facebook

was 4.7 years. Most of the participants defined themselves as male (53%), while 47% of

participants defined themselves as female.

Table 1
Percentage of age of participants at which Facebook was first acquired

Age	Percentage
<13	28.7%
14	33.0%
15	22.3%
16	8%
17	5.3%
>18	3.1%

n = 95

Table 2

Percentage per number of years Facebook has been owned

Years	Percentage
<1	7.4%
2	6.4%
3	7.4%
4	20.2%
5	25.5%
6	23.4%
7	8.5%
>8	2.1%

n = 95

Friendship Questionnaire

The Friendship Questionnaire (FQ) was scored by adding up certain values for certain responses. The question types varied and some answers were worth more points. Some questions are on a Likert scale, e.g. answers 1 is "Quite difficult" and 5 is "Very easy" are possible responses to the question, "How easy do you find it to make new friends." Other questions require participants to pick from a choice of statements, e.g. "I like to be close to people" or "I like to keep my distance from people." The FQ was scored according to instructions provided in the questionnaire (see Appendix B). The mean score for the FQ is 73.1 ($n = 94$, $SD = 16.5$). The mean score for male participants on the FQ is 67.3 ($n = 50$, $SD = 16.2$). The mean score for female participants is 79.4 ($n = 45$, $SD = 14.6$).

The results are not consistent with the results from the comparisons studies. No mean score was reported for combined gender in the original study using the adult sample

(Baren-Cohen & Wheelwright, 2003). The mean FQ score for female participants in the original study was 90.0 (SD = 16.1). The mean FQ score for male participants in the original study was M =70.3, SD = 15.7. A one-sample t-test was performed to discover whether there was a significant statistical difference between the mean scores in the original study and the results of the current study. The original study split the group by gender, so the sample in the current study is split by gender for a more appropriate comparison. The results of the one-sample t-test using the male sample ($t_{(48)}$ = -1.287, p = .204) indicated that they are consistent with the original results for male participants. The results of the one-sample t-test using the female sample ($t_{(44)}$ = -4.88, p = .000) indicated that they are not consistent with the results of the original study.

The results of the current study are also different than the study that used a sample of undergraduate students. Because the sample also consisted of undergraduate students, it was expected that the results would be somewhat consistent; however, the results on the FQ in the current study were lower. In a comparison study looking at friendship quality among 236 undergraduate students from a Western Canadian University, the mean FQ score for male participants was 82.9 (SD = 15.26). The mean FQ score for female participants was 94.55 (SD = 13.45) (Watson, 2012). A one-sample t-test was performed to discover whether there is a statistically significant difference between the mean FQ score in the comparison group and the results of the current study. The comparison study split the group by gender, so the current split the sample by gender for a more appropriate comparison. The results of the one-sample t-test using the male sample ($t_{(48)}$ = -6.74, p = .000) indicated that they are not consistent. That is, the results of current sample where much lower than the results in the comparison group. The results

of the one-sample t-test using the female sample ($t_{(44)}$ = -6.98, p = .000) indicated that

they are not consistent. That is, the results of current sample where much lower than the

results in the comparison group.

Rosenberg Self-Esteem Scale

The mean score on the Rosenberg Self-Esteem Scale (RSES) scale is 19.18 (n =

95, SD = 6.33). In the current study, each item was measured on a scale from 0-3.

Strongly Disagree = 0, Disagree = 1, Agree = 2, and Strongly Agree = 3 on positive

items. On negative items the values were opposite (Strongly Disagree = 3, Disagree = 2,

Agree = 1, and Strongly Agree = 0). This gives the RSE a range of 0 (low self-esteem) to

30 (high self-esteem) (see Appendix B).

The current study used a Likert scale ranging from 0-3, while other use of the

Rosenberg Self-Esteem Scale (RSES) use Likert scale ranging from 1-4. In a comparison

group of a similar sample, 117 first year undergraduate students, participants reported a

mean score of 29.13 (SD = 4.29) on the Rosenberg Self-Esteem Scale (RSES). A one-

sample t-test was performed to discover whether there is a statistically significant

difference between the mean RSES score in the comparison group and the results of the

current study. The results of a one-sample t-test ($t_{(94)}$ = .075, p = .940) indicated that the

results were not significantly different.

Facebook Intensity Scale

The mean score for the number of Facebook friends as measured by the Facebook

Intensity (FBI) scale was 7.18 (SD = 3.04), which indicates that the average number of

Facebook friends was 301-400. The overall mean score for the FBI scale, designed to

measure the intensity of the interest in Facebook, was not used as part of this thesis.

Other questions were used as supplementary information, such as, "What are the most common reasons you used Facebook in high school?" See Appendix B for information on how the FBI scale was calculated.

The results from the current study are different than when the questionnaire was created, when undergraduate students reported having an average of 151-200 Facebook friends (Ellison et al., 2007). A one-sample t-test was performed to discover whether there is a significant statistical difference between the mean score in the original study and the results of the current study. The results of a one-sample t-test ($t_{(93)} = .8.91$, $p = .000$) indicated that the results were not consistent with the comparison group from 2007. For the comparison study, the results were much lower than the results of the current study ($M = 4.39$, $SD = 2.12$) indicating an average number of Facebook friends between 151-200. The results from the current study, however, are similar to when the same survey was used in a 2013 study and undergraduate respondents reported between 301 and 400 (Clayton, Osborne, Miller & Oberle, 2013). That comparison study, however, did not report the mean.

Hypothesis Testing

Hypothesis 1

This study hypothesized that participants who scored lower on the Friendship Questionnaire (FQ) would report having more Facebook friends on the Facebook Intensity (FBI) scale than participants who scored higher on the FQ. To test this hypothesis, a Pearson's *r* correlation coefficient was computed in Statistical Package for the Social Sciences (SPSS) using the participants' total score on the FQ and the self-

reported number of Facebook friends, as asked on the FBI scale. Results ($n = 94$, $p = .014$, $r = .228$) revealed a significant positive correlation between number of Facebook friends as reported on the FBI scale and more intimate friendships as reported on the FQ. That is, the more Facebook friends participants reported having, the more intimate their friendships. The results did not support Hypothesis 1.

Hypothesis 2

Hypothesis 2 stated that participants who report having more Facebook friends on the Facebook Intensity (FBI) scale would report having lower self-esteem on the Rosenberg Self-Esteem Scale (RSES) than participants who had fewer Facebook friends on the FBI scale. Hypothesis 2 was tested by completing a Pearson's r data analysis using the participants' score on the RSES and self-reported number of Facebook friends, as

asked on the Facebook Intensity (FBI) scale. Results ($n = 94$, $p = .041$, $r = .223$) showed a positive correlation between Facebook friends and the RSES scale. That is, the greater number of Facebook friends participants have was related to high scores on the RSES compared to participants with fewer friends on Facebook. The results did not support Hypothesis 2.

Hypothesis 3a

Hypothesis 3a stated that participants who reported a longer duration of Facebook use (i.e., using a Facebook account for several years) would report more time spent on Facebook daily compared to participants who reported a shorter duration of Facebook use. Hypothesis 3a was tested by completing a Pearson's r data analysis using the participants' self reported duration of Facebook use and participants' self-reported time

spent daily on Facebook. Results ($n = 92$, $p = .125$, $r = .121$) showed that the correlation between duration of Facebook use and more time spent on Facebook was not significant. The results did not support Hypothesis 3a.

Hypothesis 3b

Hypothesis 3b stated that participants who reported longer duration of Facebook use (i.e., using a Facebook account for several years) would report more Facebook friends on the FBI scale than participants who reported less duration of Facebook use. To test this hypothesis a Pearson's *r* data analysis was completed by using participants' self-reported duration of Facebook use and the self reported number of Facebook friends as reported on the FBI scale. Results ($n = 92$, $p = .001$, $r = .324$) showed that participants who owned and used Facebook for several years had accumulated more friends on Facebook. Results supported Hypothesis 3b.

Hypothesis 3c

Hypothesis 3c stated that participants who reported longer duration of Facebook use (i.e., using a Facebook account for several years) would report lower levels of friendship intimacy on the Friendship Questionnaire (FQ) than participants who reported a shorter duration of Facebook use. A Pearson's *r* data analysis was completed by using participants' self-reported duration of Facebook use and participants' scores on the (FQ). Results ($n = 92$, $p = .013$, $r = .232$) revealed a positive correlation between duration of Facebook use and friendship intimacy as scored by the FQ. That is, respondents who reported using a Facebook account for a longer time scored higher on the FQ than respondents who reported using a Facebook account for a shorter amount of time. The results did not support Hypothesis 3c.

Hypothesis 4

Hypothesis 4 stated that participants who reported longer duration of Facebook use (i.e., using a Facebook account for several years) would report lower self-esteem on the RSES than participants who reported a shorter duration of Facebook use and higher self-esteem on the RSES. To test this hypothesis a Pearson r correlation was completed by using participants' self-reported duration of Facebook use and participants' score on the RSES. Results were not significant ($n = 92$, $p = .226$, $r = .121$). Results did not support Hypothesis 4.

CHAPTER IV

Discussion

Participants

The current study aimed to examine the relationship between Facebook, friendship, and self-esteem of college students who have had Facebook throughout adolescence by looking at self-reported scores on surveys that looked at Facebook use, friendship and self-esteem. The majority of students (84%) had Facebook by age 15 years old. Mid adolescence (ages 14 through 16) is when students start forming an identity and falling in love (Barrett, 1996). This means that the current study consists of college students who experienced mid- and late-adolescence with Facebook. Only a small percentage of students were 13 or younger, and, therefore, experienced early adolescence while owning a Facebook account (28.7%). Early adolescence is described as a time for dealing with puberty, hormones, and other physical changes. Additionally, developing a sense of belonging, which includes dealing with conformity, peer pressure, and a new moral reasoning is a part of this stage (Barrett, 1996).

Hypotheses

Hypothesis 1

Hypothesis 1 stated that participants who scored lower on the Friendship Questionnaire (FQ) would report having more Facebook friends on the Facebook Intensity (FBI) scale than people who scored higher on the FQ, supporting the notion that Facebook promotes weak ties and displaces strong ties. Conversely, results indicated that the more self-reported Facebook friends the more intimate friendships participants reported on the FQ. Previous research suggested that this would not be the case. Past

research hinted that having a Facebook account throughout adolescence would displace strong ties and substitute weak-tie friendships, because of the convenience and low-commitment (Kalpidou et al., 2011; Lewis & West, 2009). That is, people who commit to having an extreme amount of friends on Facebook would have weak-tie relationships due to the number of friendships. Similarly, it was thought that people with fewer friendships on Facebook would have more intimate bonds. However, results indicated that 25% of respondents used Facebook to talk to close friends, only second to keeping in touch with distant relative (28%). This indicated that participants used Facebook to communicate with relatives or close friends. That is, results from the current study showed a strong link between Facebook use and intimate relationships.

The results from the current study are similar to when the same survey was used in a 2013 study and undergraduate respondents reported between 301 and 400 (Clayton, Osborne, Miller & Oberle, 2013). However, this is different from when the questionnaire was first created, when undergraduates reported having an average of 151-200 friends on Facebook (Ellison et al., 2007). This indicates that the longer Facebook is available the average number of Facebook friends increase. This is important to consider, because 44% of participants recorded having 601 or more friends on Facebook. However, 62% of participants reported having one or two best friends on the Friendship Questionnaire (FQ).

The results of the current study are best explained by the complicated nature of friendships and Facebook friends. Facebook does not have a ranking system, or any device, that allows Facebook users to denote the Friendship intimacy of each Facebook friend. A parent, distant relative, acquaintance, and best friend all exist similarly under

the label of Facebook friend and there is no way to differentiate the intimacy between each Facebook friend. In fact, a friend on Facebook is just a few clicks away. Similarly, having 600 or more Facebook friends is not equal to have 600 or more friends. How friendship is portrayed on Facebook and how friendship is measured by the FQ are completely different, and qualify as two separate constructs. The current study indicates that it might be the norm for someone to have one or two best friends and hundreds of Facebook friends (in some cases upwards of 600).

Despite the complicated nature of Facebook friends and friendship, there is a significant positive correlation between the two. That is, there is a correlation between people who have intimate relationships also have more Facebook friends than people who have fewer intimate friendships. The correlation may exist because people who have healthy and intimate friendships might see Facebook as useful tool to maintain or enhance close friendships. People who desire to see people face-to-face, might see Facebook as a tool to aid communication, and not stifle face-to-face interaction. For example, Facebook would allow someone who missed a social engagement with a best friend, due to work, school, etc., to easily see pictures of what happened. People motivated to have intimate healthy friendships might see Facebook as means to do that in ways that were not possible before.

Hypothesis 2

Hypothesis 2 stated that participants who reported having more Facebook friends on the Facebook Intensity (FBI) scale would report having lower self-esteem on the Rosenberg Self-Esteem Scale (RSES) than participants who reported having fewer Facebook friends on the FBI scale. Conversely, the results showed that there was a

positive correlation between number of Facebook friends as reported on the FBI scale and self-esteem as measured on the RSES. That is, the more Facebook friends participants have, the higher their score on the RSES.

In an attempt to understand these results, it is important to note that the mean level of self-esteem reported in the current study is consistent with a comparison group. The current results indicate that the average level of self-esteem in college students has not been affected by Facebook use. It is possible that people who went through adolescence with Facebook found a way to incorporate Facebook use into their lives without letting it alter how they view themselves in terms of self-esteem. Researchers pointed out that people with higher self-esteem have more confidence in their relationships than people with low self-esteem (Murray et al., 2002). That confidence might transfer over to friendships and how one navigates relationships on Facebook. People with high self-esteem might feel more comfortable and capable navigating Facebook, making more friends, and keeping in touch with acquaintances.

People with low self-esteem do not seek out more friends on Facebook as indicated by the social compensation hypothesis. The social compensation hypothesis suggested that people with low self-esteem would have more friends on Facebook to look popular (Zywica & Danowski, 2008). Additionally, people with low self-esteem might acquire Facebook out of peer pressure, but may not be invested in actively using Facebook. That is, not owning a Facebook account could possibly enhance feelings of insecurity, due to the popularity of Facebook use. Similarly, the same person might not post pictures or acquire more friendships on Facebook due to those same feelings of insecurity. Research also indicated that more people are acquiring more friends on

Facebook as time goes on. Results from the current study indicated that the average range for number of Facebook friends was from 301-400. Undergraduate students reported having an average of 151-200 Facebook friends when the Facebook Intensity (FBI) scale was first created (Ellison et al., 2007). Results from the current study could indicate that participants with low self-esteem don't acquire more Facebook friends, because they have difficulty with online communication as well as face-to-face communication. That is, participants with low self-esteem might be lagging behind their peers in utilizing tools Facebook has to acquire more Facebook friends and to have more intimate friendships.

Hypothesis 3a

Hypothesis 3a stated that participants who reported longer duration of Facebook use (i.e., using a Facebook account for several years) would report more time spent on Facebook daily. Results were not significant, indicating that there is no correlation between participants who self-reported longer duration of Facebook use and more time on Facebook per day. In the current study, the majority of respondents (64%) said they used Facebook less than 30 minutes per day. This hypothesis was considered important to investigate under the assumption that Facebook use could hinder friendships. That is, people who spend a great deal more time on Facebook daily might choose to do so instead of spending time with friends, doing school work, or participating in hobbies. Because there was no significant relationship between time spent on Facebook daily and duration of Facebook use, this indicates that getting Facebook at an early age does not mean that participants would spend more time on Facebook and ignore strong-tie relationships. Motivations to first get a Facebook could be based off of proximity to friends and family or a desire to communicate with friends outside of school.

Adolescence is important time for development (Barrett, 1996). The current research indicates that college students who owned and used Facebook throughout adolescence are spending a typical amount of time on Facebook daily. The current study does not indicate if the participants used Facebook more or less than in the past years; however, results could indicate that adolescents have learned to incorporate Facebook into their lives and not let it have unhealthy or negative effects on them.

Hypothesis 3b

Hypothesis 3b stated that participants who report longer duration of Facebook use (i.e., using a Facebook account for several years) would report more Facebook friends on the Facebook Intensity (FBI) scale. This hypothesis was confirmed. The longer duration participants owned and operated a Facebook account the more Facebook friends they had. This is likely because participants would have more time to accumulate friends, from various stages of life (e.g. middle school, high school, extracurricular activities, jobs, college, etc.) than participants who have had Facebook for a shorter period of time. Most people got Facebook by mid-adolescence; therefore, it is possible that people who grew up with Facebook just consider Facebook another means to socialize with people where they already share friendships. When asked, "What were the most common reasons you used Facebook in high school?" on the FBI scale, the most common response (30%) made by participants was, "to talk to close friends." The second most common response (24%) was, "to meet new people." Thus, in adolescence, youth communicate on Facebook with people whom they share intimate and personal friendships primarily, and are motivated to use Facebook to make new friends, secondarily. Persons who have had Facebook for a longer amount of time also are invested in strong-tie relationships. It

seems as though they steadily acquire Facebook friends over time even if it acquiring more friends isn't the most important reason for using a Facebook account.

Hypothesis 3c

Hypothesis 3c stated that participants who report longer duration of Facebook use (i.e., using a Facebook account for several years) would report lower levels of friendship intimacy on the Friendship Questionnaire (FQ). Conversely, results indicated that showing that respondents who reported using a Facebook account for a longer time reported more intimate friendships as scored on the FQ.

It is possible that having intimate friendships can be a mediator for negative aspects of Facebook use. Past research indicated that positive friendships are related to healthier psychosocial adjustment (Bagwell et al., 2005). Additionally, as discussed before, adolescence is a very important time for development of relationships (Barrett, 1996). Therefore, having intimate and healthy friendships throughout adolescence is key for healthy development during one of the most important times of development. The current study did not inquire into the length of friendships between best friends, but it is possible that intimate, empathic, healthy friendships since early adolescence and childhood, encourage more pro-social activity on Facebook and help buffer possible negative effects. That is, people who have history of having intimate and lasting friendships, might be motivated to be more pro-social and seek out friends and use Facebook as a means to keep in touch with friends. Whereas, people who have not had best friends for a longer period of time, might not see the social utility in Facebook.

Hypothesis 4

Hypothesis 4 stated that participants who reported longer duration of Facebook use (i.e., using a Facebook account for several years) would report lower self-esteem on the Rosenberg Self-Esteem Scale (RSES). The results indicated that there was no significant correlation between participants' self-reported duration of Facebook use and their score on the RSES. As noted before, social media is generally hard to avoid (Ahn & Shin, 2013). Additionally, there are various different reasons to get on Facebook at different points across the lifespan (Ellison et al., 2007). One person might get on Facebook to improve current social standing and another might get on Facebook to see pictures of family members. It might be possible to correlate self-esteem with specific motivations to get on Facebook (i.e. to improve current social standing) but not all reasons are closely associated with boosting self-esteem. In the current study, the main reason participants reported using a Facebook account in high school was to keep in touch with close friends (30%). In a similar study, one of the main uses for Facebook reported by 1,440 university students was to keep in touch with friends from high school (Lampe, Ellison, & Steinfield, 2006).

Inconsistent Comparison Data

The research in this area and research using the Friendship Questionnaire (FQ) is scarce, but this study hints that Facebook might be lowering the intimacy of friendships as is measured by the FQ. A one-sample t-test was performed to discover whether there is a statistically significant difference between the mean scores in the original study and the results of the current study. Male participants in the current study scored similarly to the study when the Friendship Questionnaire (FQ) was first created. Female participants

scored significantly lower than the female participants in the original study. This could mean that female adults, as compared to when they were in college, have more intimate friendships. This would mean that friendship intimacy may progress with female participants over time, but is a stable trait with male participants.

The results of the current study are also different than the study that used a sample of undergraduate students. Because the sample also consisted of undergraduate students from Western Canadian University, it was expected that the results would be somewhat consistent; however, the results on the FQ in the current study were lower. A one-sample t-test was performed to discover whether there is a statistically significant difference between the mean FQ score in the comparison group and the results of the current study. The comparison study split the group by gender, so the current split the sample by gender for a more appropriate comparison. That is, the results of current sample where much lower than the results in the comparison group in regards to both male and female participants.

There are possible reasons why the scores for the current study would be lower. Questions specifying ethnicity or race were not asked in the current study. Students in the current student might be more or less diverse. The comparison study reported having that 80% of participants were non-minority students. Additionally, the sample in the above study was 70.76% female participants and 29.23% male participants, while the sample in the current study was 53% male participants and 47% female participants. As noted before, people tend to choose friends who have similar traits, such as race, gender, and age (McPherson, et al., 2001). It is possible that the friendships in the comparison study were more intimate because the environment consisted of more similar people based on

demographics. Conversely, it is also possible that Canadians scored higher on the FQ because they have strong intimate bonds compared to the participants in the current study.

It is clear that Facebook makes certain aspects of friendship easier and more convenient, which, in turn, could help make friendships more intimate. However, by making certain aspects of friendship easier, and possibly enhancing those aspects, Facebook could be altering friendship as a construct. Certain parts of friendship, such as discussing what has happened since the last time one spoke (i.e., keeping in touch with close friends), is one of the main reasons for Facebook use. Whereas, other factors, such as discussing important life decisions, are not as likely to be discussed on Facebook. That is, Facebook could be putting more focus on daily activities, shifting the focus from something else considered important on the Friendship Questionnaire (FQ). Participants who experienced adolescence with Facebook, might, in turn, put more focus on the daily activities of their friends. Considering that this is likely just one of multiple possibilities, it is clear that there is a potential that Facebook could alter how we view friendships.

Summary

The main purpose of this study was to examine how friendship and self-esteem related to Facebook use throughout adolescence. Unexpectedly, the results indicated that the more Facebook friends participants reported, the more intimate their friendships. This hints that friendship as an overall construct might be changing, which could also mean that Facebook has played a role in how we form, maintain, and view friendships. Similarly, results indicated that the more Facebook friends participants reported, the higher their self-esteem. Considering that this is not consistent or what was expected

based off of past research, it is possible that how adolescents integrate Facebook into their lives has altered how they come to terms with who they are and their friendships. Having more intimate friendships might make for healthier adolescents, which, in turn, might translate into using Facebook in positive ways. However, it is possible that Facebook has greatly altered how people form friendships in a way that is in line with how Facebook functions, because the Friendship Questionnaire (FQ) scores in the current study were lower than in the comparison study of college students. However, comparison data for Rosenberg Self-Esteem Scale (RSES) and Facebook Intensity scale (FBI) were consistent with Clayton, et al., 2013. If a person has a desire to have more friends on Facebook and to have more intimate friendships, these might be similar desires as to be pro-social, connect with people, and form bonds, instead of as means to avoid socializing face-to-face.

Limitations

One of the limitations of this study was that all students were enrolled in college and this represents only a portion of the population that make up this age group. College students may form, nurture, and maintain friendships differently from same age peers not attending college. Because the intent of this study is correlational in nature and not an experiment, no causal relationships could be determined. A common problem with online questionnaires is that the accuracy of the responses depended on the honesty and professionalism of the respondents. Because of the year Facebook was created and gained popularity, only a minority of participants had Facebook throughout early adolescence (28.7%). Additionally, the ethnicity and race of the participants were not asked, which relates to homophily, and friendship. As noted earlier, research shows that similarities in

race, gender, and age are major factors that contribute to the creation of friendships (McPherson, Smith-Lovin, & Cook, 2001). Knowing the diversity of the participants would have allowed for greater understanding of the results when compared to similar studies. That is, if the environment the participants lived in was more diverse, this could be considered a challenge to the forming of friendships, and could explain lower scores on the Friendship Questionnaire (FQ). A final possible limitation to this study could be that this sample included only American college students whereas one of the comparison studies used adults of different ages and the other used students from a university in Canada.

Recommendations for Future Research

Studies similar to the current one should be done to support or debate the results of the current study. Further research could use similar surveys or similar constructs to further examine long-term effects of Facebook use throughout adulthood. Further research could look at the reasons and motivations for Facebook use, how they relate to varying factors, such as personal relationships, and self-esteem. For example, further research could look at number of Facebook friends and pro-social or antisocial behavior. Future studies could focus on having a sample that is more indicative of the population. Future studies could use a sample from people in varying demographic areas and educational level. Because of the unexpected results, more studies should be done to examine the relationship between Facebook use and development across the lifespan.

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APPENDICES

APPENDIX A: IRB APPROVAL

MIDDLE TENNESSEE
STATE UNIVERSITY

4/4/2014

Investigator(s): Justin Young, Dr. Monica Wallace, & Dr. James Rust
Department: Psychology
Investigator(s) Email Address: jmy2k@mtmail.mtsu.edu, Monica.Wallace@mtsu.edu

Protocol Title: College Student's Friendships, Self-Esteem, and Experience Using Facebook

Protocol Number: #14-325

Dear Investigator(s),

Your study has been designated to be exempt. The exemption is pursuant to 45 CFR 46.101(b)(2) Educational Tests, Surveys, Interviews, or Observations.

We will contact you annually on the status of your project. If it is completed, we will close it out of our system. You do not need to complete a progress report and you will not need to complete a final report. It is important to note that your study is approved for the life of the project and does not have an expiration date.

The following changes must be reported to the Office of Compliance before they are initiated:
- Adding new subject population
- Adding a new investigator
- Adding new procedures (e.g., new survey; new questions to your survey)
- A change in funding source
- Any change that makes the study no longer eligible for exemption.

The following changes do not need to be reported to the Office of Compliance:
- Editorial or administrative revisions to the consent or other study documents
- Increasing or decreasing the number of subjects from your proposed population

If you encounter any serious unanticipated problems to participants, or if you have any questions as you conduct your research, please do not hesitate to contact us.

Sincerely,

Lauren K. Qualls, Graduate Assistant
Office of Compliance
615-494-8918

APPENDIX B: QUESTIONNAIRES

Friendship Questionnaire

For each of the following questions, tick the box next to the statement which most applies to you.

1. a I have one or two particular best friends. [5]
   b I have several friends who I would call best friends. [2]
   c I don't have anybody who I would call a best friend. [0]

2. a The most important thing about a friendship is having somebody to confide in. [5]
   b The most important thing about a friendship is having somebody to have fun with. [0]

3. a If I had to pick, I would rather have a friend who enjoys doing the same things as me than a friend who feels the same way about life as I do. [0]
   b If I had to pick, I would rather have a friend who feels the same way about life as I do, than a friend who enjoys doing the same things as me. [5]

4. a I like to be close to people. [5]
   b I like to keep my distance from people. [0]

5. a When I talk with friends on the phone, it is usually to make arrangements rather than to chat. [0]
   b When I talk with friends on the phone, it is usually to chat rather than to make arrangements. [5]

6. a I tend to think of an activity I want to do and then find somebody to do it with. [0]
   b I tend to arrange to meet somebody and then think of something to do. [5]

7. a I prefer meeting a friend for a specific activity, e.g., going to the cinema, playing golf. [0]
   b I prefer meeting a friend for a chat, e.g., at a pub, at a café. [5]

8. a If I moved to a new area, I would put more effort into staying in touch with old friends than making new friends. ☐
   b If I moved to a new area, I would put more effort into making new friends than staying in touch with old friends. ☐

9. a My friends value me more as someone who is a support to them than as someone to have fun with. [5]
   b My friends value me more as someone to have fun with than as someone who is a support to them. [0]

APPENDIX

The Friendship Questionnaire (FQ)

This questionnaire has 35 questions. Please answer every question.

The Friendship Questionnaire

10. a If a friend had a problem, I would be better at discussing their feelings about the problem than coming up with practical solutions. [5]

  b If a friend had a problem, I would be better at coming up with practical solutions than discussing their feelings about the problem. [0]

11. a If a friend was having personal problems, I would wait for them to contact me as I wouldn't want to interfere. ☐

  b If a friend was having personal problems, I would contact them to discuss the problem. ☐

12. a When I have a personal problem, I feel that it is better to work it out on my own. [0]

  b When I have a personal problem, I feel that it is better to share it with a friend. [5]

  c When I have a personal problem, I feel that it is better to try and forget about it. [0]

13. a If I have to say something critical to a friend, I think it's best to broach the subject gently. [5]

  b If I have to say something critical to a friend, I think it's best to just come right out and say it. [0]

14. If I fell out with a good friend and I thought that I hadn't done anything wrong, I would

  a do whatever it takes to repair the relationship. [5]

  b be willing to make the first move, as long as they reciprocated. [3]

  c be willing to sort out the problem, if they made the first move. [1]

  d not feel able to be their *close* friend anymore. [0]

15. My ideal working space would be

  a in an office on my own, without any visitors during the day. [0]

  b in an office on my own, with an occasional visitor during the day. [1]

  c in an office with one or two others. [3]

  d in an open plan office. [5]

For the next set of questions, please tick the box to indicate your answer.

16. How easy do you find discussing your feelings with your friends?

Very easy	[5]	Quite easy	[4]
Not very easy	[2]	Quite difficult	[1]
Very difficult	[0]		

17. How easy would you find it to discuss your feelings with a stranger?

Very easy	☐	Quite easy	☐
Not very easy	☐	Quite difficult	☐
Very difficult	☐		

18. In terms of *personality*, how similar to your friends do you tend to be?

Very similar	[5]	Quite similar	[3]
Not very similar	[1]	Very dissimilar	[0]

19. In terms of *interests*, how similar to your friends do you tend to be?

Very similar	☐	Quite similar	☐
Not very similar	☐	Very dissimilar	☐

20. How important is it to you what your friends think of you?

Of no importance	[0]
Of little importance	[1]
Fairly important	[2]
Very important	[4]
Of upmost importance	[5]

21. How important is it to you what strangers think of you?

Of no importance	☐
Of little importance	☐
Fairly important	☐
Very important	☐
Of upmost importance	☐

22. How easy do you find it to admit to your friends when you're wrong?

Very easy	[5]	Quite easy	[4]
Not very easy	[2]	Quite difficult	[1]
Very difficult	[0]		

23. How easy to do you find it to tell a friend about your weaknesses and failures?

Very easy	[5]	Quite easy	[4]
Not very easy	[2]	Quite difficult	[1]
Very difficult	[0]		

24. How easy do you find it to tell a friend about your achievements and successes?

Very easy	☐	Quite easy	☐
Not very easy	☐	Quite difficult	☐
Very difficult	☐		

25. How interested are you in the everyday details (e.g., their relationships, family, what's currently going on in their lives) of your *close* friends' lives?

Completely disinterested	[0]
Not very interested	[1]
Quite interested	[3]
Very interested	[5]

26. How interested are you in the everyday details (e.g., their relationships, family, what's currently going on in their lives) of your *casual* friends' lives?

    Completely disinterested ☐0

    Not very interested ☐1

    Quite interested ☐3

    Very interested ☐5

27. When you are in a group, e.g., at work, school, church, parent group etc., how important is it for you to know the "gossip," e.g., who dislikes who, who's had a relationship with who, secrets.

    Of no importance ☐0

    Of little importance ☐1

    Fairly important ☐2

    Very important ☐4

    Of great importance ☐5

28. Do you work harder at your career than at maintaining your relationships with friends?

    Yes ☐0   No ☐5   Equal ☐2

29. How often do you make plans to meet with friends?

    Once or twice a year ☐0

    Once every 2 or 3 months ☐1

    Once a month ☐2

    Once every couple of weeks ☐3

    Once or twice a week ☐4

    3 or 4 times a week ☐5

    More than any of the above ☐5

30. How would you prefer to keep in touch with friends?

    (Please put: 1 in the box next to your most preferred method

    2 in the box next to your second preference

    3 in the box next to your third preference)

		Scoring
Face to face contact	☐	If first choice, 5 points
E-mail/letters	☐	If first choice, 0 points
Telephone calls	☐	If first choice, 2 points

    Second and third choices are not scored.

31. How easy to do you find it to make new friends?

    Very easy ☐5   Quite easy ☐4

    Not very easy ☐2   Quite difficult ☐1

    Very difficult ☐0

32. What would be the *minimum* social contact you would need to get through a *day?*

    No contact—I don't get lonely ☐0

    Just being near to people, even if I am not talking to them ☐1

    A casual chat, e.g., with a shop assistant or hairdresser ☐2

    A chat with a friend ☐3

    Two or three chats with friends during the day ☐4

    More than any of the above ☐5

33. What would be the *minimum* social contact you would need to get through a *week?*

    None—I don't get lonely ☐0

    Being around people, even if I wasn't talking to them ☐1

    Casual chats, e.g., with a shop assistant or hairdresser ☐2

    One chat with a friend ☐3

    Two or three chats during the week with friends ☐3

    One chat every day with a friend ☐4

    Two or three chats every day with a friend ☐5

    More than any of the above ☐5

34. When talking with friends, what proportion of your time do you spend talking about the following:

    (Please put: 1 in the box next to the topic that you talk most about,

    2 in the box next to the topic you talk next most about, etc., through to

    7 in the box next to the topic you talk least about.

    Use each number only once, i.e., there should be no ties.)

    Politics and current affairs ☐

    Hobbies and interests (e.g., sport, TV, music, cinema, fashion, holidays, gardening, DIY, etc.) ☐

    Personal matters (e.g., life choice decisions, arguments, feelings) ☐*

    Work ☐

    Family and friends ☐*

The Friendship Questionnaire

The weather ☐

What you've been doing since last time you spoke ☐

Scoring

If either of the two asterisked items are chosen as the most frequently talked about topic, 5 points are awarded. Otherwise no points are awarded. All other rankings are ignored

35. At social occasions, when you meet someone for the first time, how likely are you to talk about the following.

    (Please put: 1 in the box next to the topic that you talk most about,

    2 in the box next to the topic you talk next most about, etc., through to

    7 in the box next to the topic you talk least about.

    Use each number only once, i.e., there should be no ties.)

    Politics and current affairs ☐

    Hobbies and interests (e.g., sport, TV, music, cinema, fashion, holidays, gardening, DIY, etc.) ☐

    Personal matters (e.g., life choice decisions, arguments, feelings) ☐

    Work ☐

    Family and friends ☐

    The weather ☐

    What you've been doing recently ☐

Thank you for completing this questionnaire. Please return it in the Freepost envelope provided.

Rosenberg Self-Esteem Scale

Rosenberg Self-Esteem Scale (Rosenberg, 1965)

The scale is a ten item Likert scale with items answered on a four point scale - from strongly agree to strongly disagree. The original sample for which the scale was developed consisted of 5,024 High School Juniors and Seniors from 10 randomly selected schools in New York State.

Instructions: Below is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle **SA**. If you agree with the statement, circle **A**. If you disagree, circle **D**. If you strongly disagree, circle **SD**.

1.	On the whole, I am satisfied with myself.	SA	A	D	SD
2.*	At times, I think I am no good at all.	SA	A	D	SD
3.	I feel that I have a number of good qualities.	SA	A	D	SD
4.	I am able to do things as well as most other people.	SA	A	D	SD
5.*	I feel I do not have much to be proud of.	SA	A	D	SD
6.*	I certainly feel useless at times.	SA	A	D	SD
7.	I feel that I'm a person of worth, at least on an equal plane with others.	SA	A	D	SD
8.*	I wish I could have more respect for myself.	SA	A	D	SD
9.*	All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
10.	I take a positive attitude toward myself.	SA	A	D	SD

Scoring: SA=3, A=2, D=1, SD=0. Items with an asterisk are reverse scored, that is, SA=0, A=1, D=2, SD=3. Sum the scores for the 10 items. The higher the score, the higher the self esteem.

The scale may be used without explicit permission. The author's family, however, would like to be kept informed of its use:

The Morris Rosenberg Foundation
c/o Department of Sociology
University of Maryland
2112 Art/Soc Building
College Park, MD 20742-1315

Facebook Intensity scale

Scales

Facebook Intensity (FBI)

The Facebook Intensity scale is used to measure Facebook usage beyond simple measures of frequency and duration, incorporating emotional connectedness to the site and its integration into individuals' daily activities. You are free to use the Facebook intensity scale (FBI) as long as correct attribution is used.
Please cite:
Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends:" Social capital and college students use of online social network sites. *Journal of Computer-Mediated Communication, 12,* 1143-1168.

Scale Items
1. Facebook is part of my everyday 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 a while
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 range from 1 = strongly disagree to 5 = strongly agree, unless otherwise noted.

*Can be asked as an open-ended (as in Ellison et al., 2007) or closed-ended (as in Steinfield et al., 2008) question. If asked as an open-ended question, Total Facebook friends must transformed by taking the log before averaging across items to create the scale due to differing item scale ranges. If asked as a closed-ended question, a ten point ordinal scale may be used (e.g. 10 or less, 11–50, 51–100, 101–150, 151–200, 201–250, 251–300, 301–400, more than 400). You may wish to adjust these response categories depending on your population, etc.
Note that earlier versions asked students to distinguish among in-network and total friends. This may or may not be appropriate based on population, site layout etc.

**Can be asked as an open-ended or closed-ended question. If asked as an open-ended question, Facebook minutes should be measured by having participants fill in the amount of time they spend on Facebook. Then the item should then be transformed by taking the log before averaging across items to create the scale due to differing item scale ranges. If asked as a close-ended question an ordinal scale may be used (e.g. 1= 0-14min, 2=15-29 min, etc). Again, response categories may differ based on population means.

Computing the Scale
The Facebook Intensity score is computed by calculating the mean of all of the items in the scale.

APPENDIX C

Permission to use Friendship Questionnaire (FQ)

Of course. Best wishes, Simon Bc

Professor Simon Baron-Cohen, FBA
Autism Research Centre
Psychiatry Department
Cambridge University
Douglas House
18B Trumpington Road
Cambridge CB2 8AH
01223 746057
www.autismresearchcentre.com

My name is Justin Young and I am currently in graduate school for School Psychology. I have started looking for measures for my thesis. I'm researching the differing effects cognitive and affective empathy have on bullying. The scale will be given to college students. Part of the thesis incorporates information about friendship. I was hoping to use the **Friendship Questionnaire** and was wondering if I could have permission to use this measure for my thesis?

Sincerely,

Justin Young