

Rowan University

## Rowan Digital Works

---

Theses and Dissertations

---

9-10-2014

### An exploratory investigation on the effects of online social networking sites on college students

Alexis Sims

Follow this and additional works at: <https://rdw.rowan.edu/etd>



Part of the [Higher Education Commons](#), and the [Student Counseling and Personnel Services Commons](#)

---

#### Recommended Citation

Sims, Alexis, "An exploratory investigation on the effects of online social networking sites on college students" (2014). *Theses and Dissertations*. 271.  
<https://rdw.rowan.edu/etd/271>

This Thesis is brought to you for free and open access by Rowan Digital Works. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Rowan Digital Works. For more information, please contact [graduateresearch@rowan.edu](mailto:graduateresearch@rowan.edu).

**AN EXPLORATORY INVESTIGATION OF THE EFFECTS OF ONLINE  
SOCIAL NETWORKING SITES ON COLLEGE STUDENTS**

by  
Alexis Sims

A Thesis

Submitted to the  
Department of Educational Services, Administration and Higher Education  
College of Education

In partial fulfillment of the requirement

For the degree of  
Masters of Arts in School Psychology

at  
Rowan University  
May 6, 2013

Thesis Chair: Terri Allen, Ph.D.



## **Abstract**

### **AN EXPLORATORY INVESTIGATION OF THE EFFECTS OF ONLINE SOCIAL NETWORKING SITES ON COLLEGE STUDENTS 2013/14**

Terri Allen, Ph.D.

Master of Arts in School Psychology

The purpose of this study was to examine the effects online social networking sites have on college students, mainly the effects on their communication. A study at Rowan University was conducted using a random selection of undergraduate students. The Rowan Subject pool was used to recruit students. Although each student was in different majors, all of the students were in an introduction to psychology course. To examine the effects online social networking sites have on college students, there were two separate groups of students designed to interact with one another in two different ways. A group was instructed to communicate face-to-face on a topic and the group were audio and visually recorded. The other group was instructed to communicate through a Facebook page created by the researcher. A status was posted on the main page and the subjects were instructed to communication via Facebook. To examine communication, the number of words was counted. I hypothesized due to the increased use of online social networking sites; the group communicating through Facebook would have a higher word count than the group communicating face-to-face.

## **Table of Contents**

Abstract	iii
List of Figures	vi
List of Tables	vii
Chapter 1: Introduction	1
Chapter 2: Literature Review	4
Definition of a Social Networking Site	4
Maintaining and Establishing Friendshi	5
Social Support	22
Romantic Relationship Satisfaction	28
Psychological Effects	29
Personality Characteristics	32
Online Networking Sites For The Use of Educational Purposes	33
Negative Effects	42
Chapter 3: Methodology	45
Participants	45
Design	45
Procedures	46
Chapter 4: Results	48
Statistical Analysis	48
Descriptive Analysis	49
Chapter 5: Discussion	51
Conclusions Regarding Sample	51

## **Table of Contents (Continued)**

Limitations	52
Summary	52
Conclusion	53
References	55

## **List of Figures**

Figure	Page
Figure 1 Comparing Mean Word Count Between Both Groups	50

## **List of Tables**

Table	Page
Table 1 Communication Group Word Count	50



## **Chapter 1**

### **Introduction**

College students are becoming a target for various social networking sites. Since cell phone use has increased, online social networking sites now have applications that can easily be downloaded onto any smart phone, making social sites more accessible. Many thoughts have been given to such easy access to social sites, but it has not been stated the effects that can occur. Facebook can yield positive and negative effects (Paradise & Sullivan, 2012). However, few have investigated how one perceives the negative effects of Facebook on themselves (Paradise & Sullivan, 2012). Do social sites positively enhance college students' interpersonal relationships? Or is there a negative correlation? It is important to receive a better understanding of the effects because the effects are not being regularly stated. Although there is an increased benefit to being able to socialize via text, email and other social sites, there are downsides as well. It is important to know and understand the downside to all of the benefits to online social media.

**Operational definitions:** The term online social network website is being defined as a networking service that are websites which allow individuals to learn about and communicate with others, allowing users to establish a profile containing personal information such as interests, religious beliefs, political beliefs, hobbies, etc., to indicate with other users with whom they share a connection with, send private messages to other users, leave publicly viewable messages on others' profiles, join social groups, and organize social gatherings (Baker & Oswald, 2010). The term computer-mediated communication (CMC) is defined as electronic mail, instant messaging and text messaging (Baker & Oswald, 2010). Status updates are short messages that are posted to

the personalized welcome page, the so-called newsfeed (Deters & Mehl, 2012). They serve as the main function on Facebook and Twitter (Deters & Mehl, 2012). They can be directed to a large unknown audience (e.g., everybody on the Internet, often on Twitter) or, in the case of Facebook, to a large known audience (all friends on Facebook) (Deters & Mehl, 2012). They tend to share what is currently going on in one's life (Deters & Mehl, 2012). Status updates allow followers to comment (Deters & Mehl, 2012).

A friend request is when a Facebook account user asks another Facebook account user for permission to view their Facebook page, including pictures and status updates (De Feyter, De Couck, & Stough, 2013). A comment is when an individual types their response into the comment box (De Feyter et al., 2013). A "Like" means to agree with a comment that was made (De Feyter et al., 2013). To "Like" a comment, an individual presses the Like button on the screen (De Feyter et al., 2013).

Hypothesis: Due to the extensive use of social networking sites; the Facebook communication group will have a higher word count than the face-to-face communication group.

Limitations: A limitation of the study was the subject size. Since the subject size was small, it was difficult to generalize the results to the general public. Another limitation was convenience. Although a subject pool was used to recruit participants of various racial/ethnic backgrounds, different ages and genders, only using Rowan University students may not allow the results to be generalized to other college and university students.

Assumptions: It was assumed the college students participating in the study had an online social network account in use. In addition it was assumed subjects understood the term online social networking site and its definition.

In summary, the reasoning for conducting this study was to examine the effects the use social networking sites had on college students in relation to their personal relationships. Even though positive effects had been readily stated such as social relationships online tend to be strong and intimate social relationships offline, negative effects should be stated as well (Hogan & Quan-Haase, 2010).

## **Chapter 2**

### **Literature Review**

#### **Definition of a Social Networking Site**

Social networking sites (SNS) can be described as a web-based service which allows individuals to construct a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection and view and traverse their list of connections and those made by others within the system (Boyd & Ellison, 2007). These sites have been turned into virtual life-domains for gathering and sharing information, ideas and opinions (Hossain & Veenstra, 2013). Boyd and Ellison (2007) described a social networking site in a distinctive manner. Social network sites are unique as they allow individuals to meet strangers, but enable users to articulate and make their social networks visible (Boyd & Ellison, 2007). It can result in connections with other individuals that may not have been made (Boyd & Ellison, 2007).

The main component of these sites consists of visible profiles that display an articulated list of friends who are also users of the system (Boyd & Ellison, 2007). After joining an SNS, an individual is asked to fill out pages containing a series of questions (Boyd & Ellison, 2007). The profile is generated using the answers to these questions, which typically include descriptors such as age, location, interests, and a about me section (Boyd & Ellison, 2007). Most sites also encourage users to upload a profile photo (Boyd & Ellison, 2007). Some sites allow users to enhance their profiles by adding multimedia content or modifying their profile's look and feel (Boyd & Ellison, 2007).

The visibility of a profile varies by site and according to the user's discretion (Boyd & Ellison, 2007). By default, profiles are made visible to anyone, regardless of

whether or not the viewer has an account (Boyd & Ellison, 2007). Sites like MySpace allow users to choose whether they want their profile to be public or friends only (Boyd & Ellison, 2007). Facebook takes a different approach; by default users who are part of the same network can view each other's profiles, unless a profile owner has decided to deny permission to those in their network (Boyd & Ellison, 2007). The public display of connections is a crucial component of a SNS (Boyd & Ellison, 2007). The "friends" (Boyd & Ellison, 2007) list contains links to each friend's profile, enabling viewers to traverse the network (Boyd & Ellison, 2007).

### **Maintaining and Establishing Friendships**

A striking aspect of the socialization environment in Western cultures in the early part of the 21st century was emerging adults having a variety of communication technologies at their disposal to manage quickly and efficiently (Manago, Taylor, & Greenfield, 2012). Facebook was the most popular social networking site in the United States and the fourth most visited website on the Internet (Manago et al., 2012). Estimates were 90% of undergraduates on the majority of college campuses used social media sites, creating online profiles of them and adding other users to their lists of friends on the network (Manago et al., 2012). Instant messaging was less commonly used amongst emerging adults (Subrahmanyam, Reich, Waechter, & Guadalupe, 2008). More males (65%) used instant messaging compared to females (46%) (Subrahmanyam et al., 2008). Mazur and Richards (2011) stated majority of social networking site users usually interacted with others from the same age, gender and race. As the increase of the use of such a large communication network, it raised the question about the changing nature of friendship (Manago et al., 2012).

As college students' Facebook networks have increased over the past few years, the relationship between intensity of Facebook use and perceived emotional support has disappeared (Manago et al., 2012). Does Facebook create an orientation toward popularity and large numbers of friends at the expense of dependable social support from close friends and the development of skills for intimate relations (Manago et al., 2012)? To what extent and in what way is intimate self-disclosure transferred to an online social networking site (Manago et al., 2012)? How does the nature of the online social network and the nature of online communication relate to a sense of social support (Manago et al., 2012)? These are a few questions Manago et al (2012) addressed in their study. Manago et al (2012) examined the composition of a friendship of college students' Facebook networks and its implications for social interactions and social support.

In the current study, Manago et al (2012) considered the influence of Facebook on emerging adults' social development through the lens of a sociocultural and historical change. Evidence in online interactions came from surveys, which indicated Facebook was used in the general population to maintain ongoing communication with close, rather than distant, relationships (Manago et al., 2012). Baker and Oswald (2010) also stated in their article most users reported these services helped them connect with old and current friends. Online social networking sites create opportunities for young people to nurture friendship intimacy (Manago et al., 2012). Other research indicated the youth used the Internet to connect with friends, support and create emotional ties and create new friendships (Reich, Subrahmanyam, & Espinoza, 2012).

Smahel, Brown and Blinka (2012) stated in their article as well how these social Internet programs provide young individuals with new dimensions of social activities.

Young people can initiate and maintain relationships with individuals they encounter online, but also supplement face-to-face interactions with offline acquaintances (Smahel, Brown, & Blinka, 2012). Social networking services may facilitate intimacy between peers also indicated by Baker & Oswald (2010). The amount of information available (e.g., hobbies, favorite books, religious and political views) makes it easy to learn about and disclose to others (Baker & Oswald, 2010). Given that learning about others and disclosing personal information often leads to greater intimacy (Baker & Oswald, 2010).

In one college sample, more frequent Facebook use was associated with higher perceptions of emotional support (Manago et al., 2012); in another sample, 20% asserted MySpace brought them closer to their friends (Manago et al., 2012). Individuals who participate in communicating via instant messaging have an increase in friendship quality one year later (Reich et al., 2012). It would perceive having multiple methods of communication, also known as “media multiplexity” (Manago et al., 2012) enables continual steady contact with others that could increase intimacy (Manago et al., 2012). Reich et al (2012) discovered a similar finding; communicating via multiple online social applications provides additional ways for intimacy and an emotional connection to develop.

As stated in this article Mango et al (2012) defined intimacy broadly as closeness or the disclosure of private information requiring high levels of trust and confidentiality between individuals (Manago et al., 2012). Intimacy begins to appear in friendships during early to mid-adolescence, but does not advance to more mature levels until late adolescence and emerging adulthood; the period that is the focus of the study (Manago et al., 2012). In interpersonal communication research, closeness and intimacy are critical to

a strong relationship (Hsu, Wang, & Tai, 2011). Intimacy in relationships is one of the social resources that quality close relationships can provide (Manago et al., 2010). Some researchers hint Facebook could introduce distortions into the normal pattern of friendships and intimate relationships in real life (Lewis & West, 2009).

During the developmental period spanning from adolescence to adulthood, friendships grow as a means of companionship, support for self-esteem and a source of instrumental support in familial social support (Manago et al., 2012). Research with emerging adults indicates those who report an increase in social support over the course of emerging adulthood demonstrate increases in psychological wellbeing (Manago et al., 2012). Whereas low perceived social support among college students is related to depression and loneliness (Manago et al., 2012). Intimacy development is refracted in two different directions as it is transferred onto the screens of online social networking sites: depth and breadth (Manago et al., 2012).

Depth and breadth appear to be important to healthy development during emerging adulthood (Manago et al., 2012). Intimate close relations are widely regarded as conducive to psychosocial wellbeing (Manago et al., 2012). Breadth in social relationships is essential to the process of expanding social circles as young persons' experience broader horizons in their development toward adulthood (Manago et al., 2012). Other researchers who have studied the impact of SNS have also recognized that relationships play an important role (Hsu et al., 2011).

The question still remains; does the expansion of online social networking sights present a socializing context that encourages superficial relationships more than close connections (Manago et al., 2012)? Intimacy is encountered amongst Internet settings



(Hsu et al., 2011). Users' popularity is not socially grounded and is different from offline popularity (Hsu et al., 2011). Users behave differently offline than they do online (Hsu et al., 2011). In the study conducted by Manago et al (2012), it was examined the relationship between network size and perceived social support to see whether the growth of social networks has led to a disconnection between Facebook use and a sense of social support from close relationships. It may be suggested a type of communication via Facebook is important for a sense of social support (Manago et al., 2012).

Disclosing more secrets and providing support to friends constitute behaviors, which treat friends more seriously than just sending feedback (Hsu et al., 2011). Intimacy is found amongst face-to-face interactions, but it is also found in online social networking sites as well (Rau, Gao, & Ding, 2008). In the study conducted by Rao, Gao and Ding (2008), they too found their subjects had a high level of intimacy in their social networks.

Similar to Baker & Oswald (2010) Manago et al., (2012) and Chung (2013), Bane, Cornish, Erspamer and Kampman (2010) also investigated how computer-mediated communication (CMC) influences friendship development. Overall, Bane et al (2010) research indicated online relationships were lower in understanding, commitment, and interdependence than offline friendships. Other research indicates for women, online friendships improve over time and become comparable in quality to real-life friendships after a year (Bane, Cornish, Erspamer, & Kampman, 2010). A number of characteristics of computer-mediated communication (CMC) may have assisted with friendship development (Bane et al., 2010). Online communication outlets can assist individuals in finding similar individuals online (Bane et al., 2010). Similarity was an important factor in friendship development (Bane et al., 2010). The convenience of CMC allowed more

frequent interactions, which could enhance friendship progression and maintenance, as was also stated in Baker & Oswald (2010). On the other hand, the impact of CMC on real-life, close friendships have been described as minimal according to Lewis and West (2009). Ambiguity in online messages has been identified as a potential barrier to communication (Bane et al., 2010). The purpose of this study was being conducted to examine the barriers placed on communication due to CMC. Nonetheless, individuals attempted to compensate for the ambiguity of CMC by exchanging more intimate questions and disclosures than are exchanged in face-to-face interactions (Bane et al., 2010).

Not only did Bane et al (2010) research online social networking sites such as Facebook, they also studied the use of blogging among females. A blog is verbal communication of personal information about oneself (Bane et al., 2010). Blogs allowed self-expression of one's daily life and personal experiences (Bane et al., 2010). Blogging can be used to maintain and strengthen existing relationships because it allowed for self-disclosure and communication with others through comments (Bane et al., 2010). Blogging provided individuals with the opportunities to develop close friendships (Bane et al., 2010). Fifty percent of bloggers surveyed in the Pew Internet study on blogging endorsed networking and meeting new people as a reason for blogging (Bane et al., 2010).

The reason behind Bane et al (2010) study was to examine female bloggers' perceptions of their interaction patterns present in online and real-life friendships (Bane et al., 2010). In addition to examining their perceptions, Bane et al (2010) also examined their satisfaction with these friendships. Bane et al (2010) too examined the relationships

between self-disclosure in bloggers' posts and their perceptions of their friendships. An online survey of 307 female bloggers was conducted (Bane et al., 2010). The survey data was used to examine differences in bloggers' perceptions of online and real-life friendships, relationship between bloggers' self-reported self-disclosure through their blogs and their perceptions of the quantity and quality of their online and real-life friendships (Bane et al., 2010). In addition to self-reported self-disclosure, in their second study, Bane et al (2010) investigated self-disclosure through blogging using content analysis. Bane et al (2010) defined self-disclosure as sharing multiple types of information, but elaborating on emotions related to the information. A limitation with studies that contained self-reported behavior was there was a difference between what participants' reports compared to what they actually did (Hogan & Quan-Haase, 2010).

After the experiment was conducted and the results analyzed, it was concluded real-life friendships were perceived to be more likely than online friendships to feature interaction patterns of trust, loyalty, emotional support, and practical help (Bane et al., 2010). Opposite to Bane et al (2010) hypotheses, participants perceived the remaining four interaction patterns: I disclose, she discloses, empathy, shared interests, as more likely to occur in offline friendships than in online friendships. Participants perceived all interaction patterns as more likely to occur in real-life friendships than online friendships (Bane et al., 2010). Bane et al (2010) findings are consistent with previous research indicating online relationships are lower in interdependence, understanding, and commitment than real-life relationships (Bane et al., 2010).

Besides being consistent with previous findings, participants were more satisfied with their real-life friendships than their online friendships in their study (Bane et al.,

2010). It is possible the females who participated in this study had lower satisfaction with online friendships because they perceive online friendships as incomplete due to a lack of physical contact (Bane et al., 2010). Physical contact has been identified as an important element of intimacy in friendships (Bane et al., 2010). Davis (2010) also examined blogging among females as well. The age the researcher focused on was adolescent girls (Davis, 2010).

Dynamic and distributed nature of the Internet makes it challenging for researchers to draw representative samples (Davis, 2010). Given this limitation, Davis (2010) did not attempt to assemble a sample that was representative of adolescent bloggers in terms of demographic characteristics such as race and socioeconomic status. Instead, Davis (2010) focused on identifying a group of girls who had sufficient blogging experience to draw on in order to discuss the evolution of their blogging practices and the ways they use their blog to express themselves and connect with others. Thus, in order to be considered for the study, bloggers needed to have maintained their blog for at least 3 years and written a minimum of 100 entries (Davis, 2010). Twenty adolescent girls from LiveJournal were recruited (Davis, 2010). LiveJournal describes its blogs as online journals intended for personal self-expression, making it an appropriate place to recruit individuals who use their blogs to record and reflect on their personal experiences (Davis, 2010). Face-to-face interviews were conducted on the twenty subjects (Davis, 2010).

Many of the subjects stated they joined LiveJournal because their friends had joined (Davis, 2010). Due to that fact, there was overlapping between LiveJournal friends and real life friendships (Davis, 2010). The adolescent girls saw joining the blogging community as sharing an activity with their friends (Davis, 2010). Since the participants

had their real life friends on the blogging website, many of them used their friend's writing styles to shape their own (Davis, 2010). The use of surveys and quizzes, for example, "What kind of cookie are you?" were commonly used amongst the girls (Davis, 2010).

Updating personal pages with personal pictures, information and share their emotions such as high school anxiety and vent (Davis, 2010). One of the subjects stated she finds it easier to share personal thoughts and feelings with friends on LiveJournal because it is often difficult to initiate such intimate conversations in person (Davis, 2010). For these young girls, LiveJournal was used a means of self-expression (Davis, 2010). Tian (2011) examined the use of blogs amongst its users as well.

The subjects, who participated in the study, used the blogging sites LiveJournal.com, Blogger.com and Wordpress.com (Tian, 2011). His results indicated many individuals began using blogs to make new friends (Tian, 2011). Social anxiety was a motivation to start using blog websites sites such as LiveJournal.com and Blogger.com (Tian, 2011). Besides social anxiety acting as a motive to create a blog, maintaining existing friendships and friendship quality was another motive (Tian, 2011). Tian (2011) discovered many individuals created a blog to be able to maintain friendships previously developed. Also, maintaining high friendship quality encouraged individuals to create and sustain a blog (Tian, 2011). While Bane et al (2010) was focusing primarily on women in terms of social impact, like Davis (2010) focusing on adolescent girls, Smahel, Brown and Blinka (2012) was primarily focusing on adolescents residing in the Czech Republic.

Smahel, Brown and Blinka (2012) were interested in the associations between Internet addiction and approaches to friendship. They focused their study on 394 adolescents between the ages of 12 and 26 years of age (Smahel et al., 2012). The sample was divided into three stages of adolescent development, younger adolescents (ages 12-15), older adolescents (ages 16-19) and emerging adulthood (ages 20-26) (Smahel et al., 2012). Ninety-two percent of the younger and older adolescents and 80% of emerging adults indicated they were Internet users (Smahel et al., 2012). To measure the participants' online and offline friendships, Smahel et al (2012) asked the participant's several questions regarding their closeness to their friends. The term "offline friends" was defined as for all friends, with whom youths interact offline now, including those they originally met online. The term "online friends" is used to describe a friend known exclusively online (Smahel et al., 2012). Questions the researchers asked were how many on- line friends do you have whom you have not met in person (Smahel et al., 2012)? Please mention how many of them you perceive as close friends (Smahel et al., 2012). How many friends do you have in the real world altogether (Smahel et al., 2012)? Please mention how many of them you perceive as close friends, and how many of them you met on the Internet (Smahel et al., 2012).

Smahel et al (2012) used a 4-point Likert scale ranging from never to very often and Griffith's specifications to identify Internet addiction. To measure self-esteem, Rosenberg's self-esteem, which was answered on a 4-point Likert scaled that ranged from strongly disagree to strongly agree (Smahel et al., 2012). Participants were also asked a set of questions that dealt with their preferences for online versus offline communication or preference for the online world in general (Smahel et al., 2012). The

questions that were asked are as follows: “I am more open on the Internet than in reality”; “On the Internet, I also reveal private details from my life, which I do not share in everyday life”; “I prefer to meet people on the Internet rather than in a real life”; “I find it easier to express myself on the Internet than in a normal conversation”; and “I can better express my emotions (feelings, senses) on the Internet (Smahel et al., 2012).”

The questions were answered on a 4-point Likert-type scales, ranging from strongly disagree to strongly agree (Smahel et al., 2012). After analyzing, the researchers results indicated the participants had three times as many offline friends and they did online friends (Smahel et al., 2012). However, but only two times as many close offline friends as close online friends (Smahel et al., 2012). As far as approaches to friendship, adolescents who only preferred communication online had a positive association with approaches to online friendship (Smahel et al., 2012). Cleemput (2010) focused primarily on adolescent media communication as well.

The focus was on fifteen-year-old teenage boys and girls (Cleemput, 2010). Cleemput investigated tie strength amongst friends and the forms of communication used based on the friendship’s tie strength. Cleemput (2010) discovered friends who identified themselves as just friends communicated majority via face-to-face (Cleemput, 2010). On occasion, there was communication via text and instant messaging (Cleemput, 2010). There was not usage of landline or mobile phones (Cleemput, 2010). Just friends were also friends on an online social networking site (Cleemput, 2010). Weak ties such as just friends, face-to-face communication was the most preferred communication pattern (Cleemput, 2010).

Adolescents who described themselves as very good friends communicating through text messaging was the most used communication pattern, very closely following was instant messaging, email and face-to-face interaction (Cleemput, 2010). Strong tie relationships were maintained through face-to-face interactions, email, mobile phones and instant messaging (Cleemput, 2010). As you can see, tie strength was correlated with which communication patterns were used. Weak ties primarily used two forms of communication, while strong friendship ties used four forms of communication (Cleemput, 2010). Face-to-face was not the prominent form of communication (Cleemput, 2010). Communication media was supplemented for face-to-face (Cleemput, 2010). While communication was investigated, the contents of what was being discussed with the various forms of communication were being researched (Cleemput, 2010). Instant messaging was used to discuss school related topics (Cleemput, 2010). On the other hand, for non-school related topics, email used over instant messaging (Cleemput, 2010). Valkenburg and Peter (2009) also observed the benefits of online social networking sites on adolescents.

Valkenburg and Peter (2009) conducted their study to debunk previous assumptions stating increased use of online social networking sites on adolescents would hinder their wellbeing and friendships. Studies conducted in the early 1990's until the early 2000's stated increased Internet use in adolescents would negatively impact their social connectedness and wellbeing (Valkenburg & Peter, 2009). Another previous article stated parent's increasing their time spent online would interfere with time they spent with their families (Valkenburg & Peter, 2009). In their attempt to state the effects opposite to previous findings, Valkenburg and Peter's (2009) results indicated



adolescents' social connectedness was enhanced through computer mediated communication. Disclosing personal information usually increased intimacy (Valkenburg & Peter, 2009). Online self-disclosure was positively correlated with friendship formation and quality (Valkenburg & Peter, 2009). Online social networking sites such as Facebook and Twitter have created new communication paradigms, changing the way individuals interact and connect to each other, which can have an impact on social relationships occurring in the real world (Arnaboldi, Guazzini, & Passarella, 2013).

Studies on the properties of online social networking were becoming increasingly popular, but there is still lack of understanding of their key features and their impact on social relationships between individuals (Arnaboldi et al., 2013). Arnaboldi et al (2013) study focuses on the social and psychological aspects of online social networks. Social and psychological aspects of online social networks are important to know, especially as stated by Arnaboldi et al (2013) the impact of them is not being regularly stated.

On the one hand, one could note online social networking sites may represent a new tool to maintain our social relationship with others and the cognitive mechanisms behind our social behavior should remain unchanged by the adoption of these networking sites (Arnaboldi et al., 2013). On the other hand, one could argue online social networking sites have provided a new environment for social interactions, which might result in different structures (Arnaboldi et al., 2013). Arnaboldi et al (2013) conducted a study to show it is possible to predict Facebook tie strength using observable variables about users' interactions. The average distance between two people in Facebook was 4.74 links, which means information circulating in Facebook could reach any random user in

average, less than five jumps (Arnaboldi et al., 2013). It would appear Facebook was reducing even further the famous six degrees of separation (Arnaboldi et al., 2013).

Tie strength played an important role in determining the trust level of a social relationship (Arnaboldi et al., 2013). Numerous variables were used to predict tie strength. The variables showing the strongest correlation with tie strength are the number of days since last communication, the frequency of contact and the number of days since first communication (Arnaboldi et al., 2013). Arnaboldi et al (2013) collected tie strength estimation by asking their participants to clearly evaluate their Facebook friendships through an electronic survey. Arnaboldi et al (2013) found the properties of Facebook networks are compatible with the findings regarding offline networks. The number of active relationships an individual can maintain found in offline social networks are comparable with the one an individual has found in Facebook (Arnaboldi et al., 2013). Relational closeness is an important factor when understanding the social effects of online communication sites.

Ledbetter, Mazer, DeGroot, Meyer, Mao and Swafford (2010) studied the outcomes of online self-disclosure and online social connection. Although the researchers acknowledge that closeness is not the only possible relational outcome worthy of investigation, it was also worth acknowledging that close relationships are important sources of social support (Ledbetter et al., 2010). Ledbetter et al (2010) defined closeness as an experience of intimacy, emotional affinity, and psychological bonding with another person. Attitudes toward online self-disclosure (OSD) and attitudes toward online social connection (OSC) are two fundamental orientations influencing media-use patterns in interpersonal relationships (Ledbetter et al., 2010). Self-disclosure and social connection

are core social networking site behaviors(Ledbetter et al., 2010).

After analyzing their results, Ledbetter et al (2010) concluded though OSC positively predicts Facebook communication when OSD is low, increased levels of OSD weaken the strength of this association(Ledbetter et al., 2010). OSC significantly predicts Facebook communication at both minimally. The results were not significant enough to conclude it at a maximum level (Ledbetter et al., 2010). Ledbetter et al (2010) also noted how one of Facebook's primary functions is building connections within a social network and those who use online communication for that purpose are more likely to communicate with their Facebook friends (Ledbetter et al., 2010). Awan and Gauntlett (2013) examined online social networks in a different context.

They attempted to understand what young people do with the media in all its forms (Awan, F. & Gauntlett, D., 2013). This study set out to develop understandings of young people's media use and communication (Awan, F. & Gauntlett, D., 2013). Awan and Gauntlett's (2013) study took place outside of the United States and was conducted in the United Kingdom. To apply their results to the general public, participants were chosen from different cities from different socio-economic and cultural backgrounds (Awan, F. & Gauntlett, D., 2013). The cities where the participants were from were Newcastle, Manchester, London, Southampton, Dorset and Cumbria (Awan, F. & Gauntlett, D., 2013).

Awan and Gauntlett (2013) discovered the participants in the study were found to be primarily using online social networking sites and instant messaging tools to maintain contact, develop relationships and communicate with their friends and family. It was

found the participants did not utilize the social networking sites to establish new relationships (Awan, F. & Gauntlett, D., 2013). Nearly all of the participants listed friends who were already a part of or related to their existing offline social networks (Awan, F. & Gauntlett, D., 2013). Furthermore, while the social networking sites and instant messaging sites were used regularly to maintain contact with individuals who lived within close proximity, participants placed particular emphasis on their importance for retaining relationships with people who were geographically distant to them (Awan, F. & Gauntlett, D., 2013). Subrahmanyam et al (2008) came across a similar finding with his participants. Many emerging adults utilize online social networking sites to interact with physically distant friends, family members and maintain pre-existing friendships rather than create new ones (Subrahmanyam et al., 2008).

Subrahmanyam et al (2008) too investigated how emerging adults spend their time on online social networks. Their findings suggested majority of the time emerging adults read and responds to comments and posts made on their social sites timeline (Subrahmanyam et al., 2008). Reviewing others' profiles and timelines was another common activity (Subrahmanyam et al., 2008). In addition, Hsu, Wang and Tai (2011) found social networking site users utilize the Internet to make contacts with distant social circles. This finding suggests Facebook is conducive for maintaining large networks of weak ties because the technology allows for easy and efficient maintenance of these relationships (Manago et al., 2012). Similar to Awan and Gauntlett (2013), Park, Lee and Kim (2012) was also interested in how young individuals utilize social networking sites.

Park, Lee and Kim (2012) discovered individuals who have a thicker pre-existing personal network were less likely to post messages on Facebook. Possibly because

individuals pre-existing network characteristic made users carry out communication through other interpersonal media such as email or cell phone (Park, Lee, & Kim, 2012). It was also found individuals' Facebook relationships may stay within Facebook and do not mix with their offline relationships (Park et al., 2012). In other words, Facebook users are likely to have two friendship spheres and operate them differently (Park et al., 2012).

Vitak and Ellison (2012) noted Facebook limits barriers and allows social support to take place by commenting on status updates within the network. While many of the previous stated articles focused primarily on adolescents and young adults involved in higher education, Holmes (2013) widened her subjects from ages eighteen and up.

Participants of this age range were chosen because the researcher was interested in exploring adult communicative styles through the use of technology and how the independent variables of age, gender, geographical location, and marital history affect how one perceives the effect of technology on relationships; whether they be strangers, friendships, or romantic friendships (Holmes, 2013). One of the results from the study indicated the participants felt he/she did not post too much personal information about their own selves (Holmes, 2013). In term of gender differences, men found it more difficult than women to maintain their friendships online (Holmes, 2013). However, there was no gender difference on the concerns to maintain friendships (Holmes, 2013). When participants were questioned about the level of concern they have for their offline image, men were less concerned with how their image appears to others in real life (Holmes, 2013). When the question arose about trusting in the information others post online, men were less trusting about others' posts (Holmes, 2013). Since age was an independent variable being investigated by Holmes (2013), the age range 18-29 spent the most time

online, as the researcher anticipated (Holmes, 2013). Similar to Holmes (2013), Hossain and Veenstra (2013) observed online friendship maintenance.

Hossain and Veenstra (2013) focused their study on graduate students enrolled in a doctoral program. Distance from home was a significant indicator of the level of social network site use (Hossain & Veenstra, 2013). Geographic location was a significant indicator of the percentage of online social network site friends one sees at least once a week (Hossain & Veenstra, 2013). Baker & Oswald (2010) focused on a sense of social support and intimacy in terms of shy individuals.

### **Social Support**

The impact observed was the use of online social websites will have on individuals who are shy. Shy individuals may find communicating via social websites highly valuable (Baker & Oswald, 2010). Shy individuals' face-to-face interaction difficulties leave them with fewer means of achieving intimacy (Baker & Oswald, 2010). Therefore shy individuals may be more likely to achieve peer closeness via social networking services (Baker & Oswald, 2010). Communicating via online social networking sites allows shy individuals to provide self-disclosure (Baker & Oswald, 2010). Face-to-face interactions may inhibit their self-disclosure making it more difficult for them to achieve intimacy (Baker & Oswald, 2010).

Shy persons may feel greater control over their self-presentation on social networking sites because of its slower pace and they are given the opportunity to construct and revise what it is he/she is trying to say (Baker & Oswald, 2010). Individual social networking profiles contain personal information, allowing for shy persons to facilitate conversation topics (Baker & Oswald, 2010). Social networking websites' lack

nonverbal behavior, hence there are fewer negative cues for shy individuals to detect and they are more likely to express themselves (Baker & Oswald, 2010). Baker & Oswald (2010) concluded online social networking sites use was positively correlated with closeness with friends with whom they interact with on Facebook and the support received from friends (Baker & Oswald, 2010). However, Baker & Oswald's (2010) analyses did not address Facebook use as moderating the relationship for friendship quality, a limitation in their study, which can be used for future studies. While Baker & Oswald (2010) observed social support among shy individuals, Carroll & Landry (2010) focused on social support between young people that were grieving or mourning a death.

A memorial MySpace page had been developed for MySpace users that had passed away. MyDeathSpace.com is a website containing news articles and online obituaries (Carroll & Landry, 2010). The site offers opportunities to pay your respects and tributes to the recently deceased MySpace.com members via their comment system (Carroll & Landry, 2010). Nevertheless, little to no scholarly work on online bereavement exists in the various disciplines of communication, including mass communication (Carroll & Landry, 2010). Therefore, Carroll and Landry (2010) made an attempt to begin filling this gap. It has been recognized that online memorializing represents an emerging set of social practices mediated by computer networks (Carroll & Landry, 2010). Identification of the benefits of online memorializing represents a new and important piece of the puzzle in understanding the impact and effects of online social networking on its participants (Carroll & Landry, 2010). By communicating with others who knew the deceased and in sharing knowledge via online social networking sites, a biography can be created allowing survivors to move on and memorializes each

survivor's ties and importance to the deceased (Carroll & Landry, 2010).

Most online memorials are heart-felt, positively portraying the deceased and noting the author's grief at the person's death (Carroll & Landry, 2010). MySpace executives themselves have stated posting on a deceased user's profile is a mode for friends to celebrate the person's life, giving friends a positive outlet to connect with one another and find comfort during the grieving process (Carroll & Landry, 2010). Vicary and Fraley (2010) were also interested in how online communication websites affect recovery after a death.

Vicary and Fraley (2010) paid particular attention to the survivors of the Virginia Tech shooting and the Northern Illinois University survivors. After both traumatic events took place, the students posted their thoughts and feelings onto their Facebook pages (Vicary & Fraley, 2010). Similar to the MySpace memorial pages created to mourn those who passed, Facebook pages were created to mourn victims who died or were injured in the school shootings (Vicary & Fraley, 2010). Participants were asked about their Internet use and grieving behaviors (Vicary & Fraley, 2010). Eighty-nine percent of participants indicated they had joined at least one Facebook group concerning the shooting (Vicary & Fraley, 2010). Participants also stated they had changed their profile picture to support the victims (Vicary & Fraley, 2010). Students reported feeling better after participating in Facebook activities to show their support and condolences (Vicary & Fraley, 2010). Due to the rapid growth of Internet and computer-mediated communication over the last decade, online support groups (OSGs) have become a new venue for social support (Chung, 2013).



Health-related OSGs have proliferated on the Internet and have become an important source for information and support for many people (Chung, 2013). Online social group patients seek, share information and knowledge about illness and discuss feelings and personal experiences (Chung, 2013). Many studies have shown the benefits OSGs bring to patients (Chung, 2013). Patients feel empowered through the processes of sharing emotions, reading others' experiences, building social relationships, and acquiring information and skills related to illness management and treatment (Chung, 2013). In addition, patients recover and obtain a sense of normalcy by learning how others have coped with similar issues (Chung, 2013). Internet-based support groups offer several unique advantages compared to face-to-face ones (Chung, 2013). Unlike offline support groups, OSGs transcend geographic boundaries (Chung, 2013). Those with rare medical conditions can easily locate people facing similar situations (Chung, 2013).

Persons who are unlikely or unable to participate in face-to-face support groups can benefit from participation in OSGs (Chung, 2013). Online social groups offer many benefits, but they are not without limitations (Chung, 2013). Chung (2013) was interested in how as people build intimate relationships online, there have been concerns about OSG users developing excessive reliance on online communication and as a result becoming increasingly disengaged from offline social connections (Chung, 2013). Chung (2013) conducted a survey and discovered individuals who reported deeper relationships in OSGs were more likely to develop a preference for social interaction in OSGs (Chung, 2013). Also, those who were more dissatisfied with the support received from offline social circles showed a stronger preference for social interaction in OSG (Chung, 2013). Mikal and Grace (2011) were interested in the positive impact Facebook can have on

study abroad students.

Mikal and Grace (2011) discovered online social networking sites provided college students studying abroad a sense of continuity during what was considered a tumultuous transition into a foreign culture. Continuity was established in two ways: allowing students to maintain contact with family and friends and serving as a transitional device, providing a sense of available support (Mikal & Grace, 2011). The Internet had the potential to permit students' transition more smoothly (Mikal & Grace, 2011). Computer mediated communication systems such as email, social networking sites and Skype maintained continued contact with support from family members and friends from home (Mikal & Grace, 2011). Mikal and Grace (2011) noted continuity provided by a sense of connectedness and the consistency of online communities enhanced students' experience by facilitating integration and decreasing stress. According to Mikal and Grace's (2011) measuring scales, the benefits of perceived support, students reported an increased willingness to take risks, initiated more contact with members of the culture they were residing in and experienced less stress as a result of their interactions online. Kim and Roselyn Lee (2011) were interested in Facebook users' psychological wellbeing along with social support.

The purpose of their study was to investigate the effects of Facebook friends and self- presentation on subjective wellbeing (SWB) and the role of perceived social support using data collected from undergraduate Facebook users (Kim & Roselyn Lee, 2011). Kim and Roselyn Lee (2011) also examined perceived social support. The end results were happiness derived from the number of Facebook friends might be due to the conception of Facebook friends, which reminds the users of their social connections and

to subsequent affirmation of self-worth (Kim & Roselyn Lee, 2011). Facebook friendships similar to traditional friendships possibly served as a meaningful source of social support, but only up to the point in which Facebook users can devote a sufficient amount of time and effort to developing and maintaining close connections with friends (Kim & Roselyn Lee, 2011). While there is a difference between users of online communication and non-users, there are also gender differences with users of online communication systems.

Muscanell and Guadagno (2012) studied gender differences with the use of Facebook. Based on their analysis, men were more likely to use social website searching for a potential date, network for possible careers and create friendships (Muscanell & Guadagno, 2012). Men were more likely to play online games within online social networking sites versus women (Muscanell & Guadagno, 2012). On the other hand, women were more likely to post statuses, upload photos, send private messages and send friend requests (Muscanell & Guadagno, 2012). It is clear studies, which intends to highlight the role of social networking sites in the developmental and information behavior of an adolescent peer group, is in fact addressing an exceedingly complex phenomenon (Read, Shah, S-O'Brien, & Woolcott, 2012). Numerous researchers have been identifying the impact online social networking sites have on friendships; some have identified the impact they have had on romantic relationships. Saslow, Muise, Impett and Dubin (2012) studied the correlation between Facebook and romantic relationship satisfaction.

## **Romantic Relationship Satisfaction**

The theory of self- expansion, which described the phenomenon being stated, suggested that greater identity overlap with one's partner was tied to greater relationship wellbeing (Saslow, Muise, Impett, & Dubin, 2012). The self-expansion theory also argued that a close relationship involved expanding the self to include the other, and a greater overlap with one's partner is associated with higher relationship quality (Saslow et al., 2012). Saslow, Muise, Impett and Dubin (2012) examined 115 participants from the United States.

Participants were asked to rate over the past six months how often they had chosen to display, as their main Facebook profile photo, images that included themselves and their spouse (Saslow et al., 2012). The main factor being measured by Saslow et al (2012) was relationship satisfaction. After analyzing had taken place, the results stated individuals felt higher satisfaction in their relationships when posting frequent pictures of themselves with their spouses (Saslow et al., 2012). Couples also felt closer to their partners when frequently posting pictures of themselves and their partners on Facebook (Saslow et al., 2012). The current study provides evidence that dyadic profile pictures on Facebook are an important marker of interconnectedness within a relationship (Saslow et al., 2012). There have been few statements about the emotional wellbeing of an individual regarding their social network usage (Read et al., 2012). Veretilo and Billick (2012) made an attempt to examine those psychological effects.

## **Psychological effects**

Veretilo and Billick (2012) focused on the various psychological issues that stem from the use of Facebook. A new phenomenon was discussed describes a phenomenon called Facebook depression, which is defined as depression that develops when adolescents spend a great deal of time on social networking sites and began to exhibit symptoms of depression (Veretilo & Billick, 2012). A study was conducted on college students' disclosures about depression and whether these disclosures met the DSM-IV criteria for major depression (Veretilo & Billick, 2012). It was found college students frequently displayed symptoms consistent with depression on Facebook (Veretilo & Billick, 2012). Some arguments suggested social networking websites were an innovative avenue for combating stigma surrounding mental health conditions (Veretilo & Billick, 2012). Mikami, Szwed, Allen, Evans and Hare (2010) too was interested in the psychological impact online social networking sites have on its users.

Mikami, Szwed, Allen, Evans and Hare's (2010) seventh and eighth grade participants' self-perceived social acceptance, participation in online social networking websites and psychological adjustment were each assessed. The findings suggest the social connections young adolescents maintain on social networking websites produces changes in their psychological wellbeing over time (Mikami, Szwed, Allen, Evans, & Hare, 2010). One of the primary results of this study was maintaining a greater number of relationships online appears to have something akin to a leveling effect on young adults' future levels of psychological adjustment and predicting elevated well-being (Mikami et al., 2010). Another finding as less socially accepted young adults who maintained a large network of online friends reported a decline in anxious-depressive symptoms over a 1-

year period (Mikami et al., 2010). It would appear having a large online network of friends decreases one's anxious-depressive feelings (Mikami et al., 2010). Those who feel isolated offline may result in turning towards online communities (Mikami et al., 2010). While Mikami et al (2010) and Veretilo and Billick (2012) paid particular attention to depressive symptoms associated with extensive use of online social sites, Hsu et al (2011) noticed personality characteristics. Deters and Mehl (2012) also focused on the psychological effects of computer based communication.

Status updates are a form of computer-based communication, which could be criticized for possibly undermining face-to-face communication, which is considered richer, more natural, and thus more beneficial to our social well being (Deters & Mehl, 2012). Status updates appear ideal for sharing what is happening in one's life because their shortness facilitates frequent posts (Deters & Mehl, 2012). Friends can comment on a status update (Deters & Mehl, 2012). Friends also have the option to like a status without writing a comment (De Feyter et al., 2013). What role does this social feedback play for the expected psychological effects of posting status updates was a question Deters and Mehl (2012) were interested in answering. If a posting was understood as an attempt to initiate social interaction, a lack of feedback might result in increased feelings of loneliness (Deters & Mehl, 2012). Low perceived social support among online social networking users is related to depression and loneliness (Manago et al., 2012). For instance, an unanswered status update may be interpreted as social rejection (Deters & Mehl, 2012).

Facebook users assume their status updates reach and are read sooner or later by the recipients even though there is no direct response (Deters & Mehl, 2012). The mere

feeling of having shared something with friends might promote feelings of closeness and social inclusion (Deters & Mehl, 2012). From the 102 university students selected to participate in the study, the mean of Facebook friends each subject had was 495 friends (Deters & Mehl, 2012). All the participants indicated their Facebook friends were also their offline friends (Deters & Mehl, 2012). Some of their Facebook friends were co-workers, professors, supervisors or a parent (Deters & Mehl, 2012). Deters and Mehl (2012) study revealed updating a status more over seven days reduced loneliness. The reduction in loneliness was accounted for by feeling more connected and in touch with friends on a daily basis (Deters & Mehl, 2012).

The content of status updates posted during the study was consistent with the idea that posting status updates helps maintain connectedness by sharing daily experiences and by letting friends take part in one's life (Deters & Mehl, 2012). Nonetheless, the results revealed direct social feedback; comments and likes, was not a necessary condition for the positive social effects of status updating to emerge (Deters & Mehl, 2012). Previous studies on expressive writing have consistently found writing about personally important topics can present psychological benefits including improvements in social functioning (Deters & Mehl, 2012). Very little is known about mechanisms underlying effects of chatting on young adults' emotional adjustment (Van Zalk, Branje, Denissen, Van Aken, & Meeus, 2011).

Van Zalk et al (2011) surveyed freshmen college students from a university in New Zealand. The topic of interest was the effects chatting online has on emotional adjustment. Their findings suggest chatting with online-exclusive peers may indirectly reduce depressive symptoms by improving supportiveness for less extraverted individual

(Van Zalk et al., 2011). A reason could be during online communication, individuals tend to receive and provide more direct feedback on their social supportiveness (Van Zalk et al., 2011). The direct feedback appeared to contain useful information for young adults' supportiveness skills, for instance taking others' values and views into account (Van Zalk et al., 2011). Direct online feedback was accompanied with perceptions of reduced social threat (Van Zalk et al., 2011). Findings indicated chatting with online-exclusive peers might improve self-esteem for individuals with low extraversion (Van Zalk et al., 2011). Although the impact online social networking sites have on communication and psychological wellbeing is highly important, the sites also have an impact on learning.

### **Personality characteristics**

Amichai-Hamburger and Vinitzky (2010) looked at Facebook use as well, but in terms of personality types. Amichai-Hamburger and Vinitzky (2010) discovered after analyzing their surveys from undergraduate students, individuals who have an extroverted personality had a significantly higher number of friends versus individuals who possessed an introverted personality and were a part of more Facebook groups. Another study conducted suggested a similar finding; a personality trait of extraversion was found to belong to significantly more Facebook group (Ross, Orr, Sisic, Arseneault, Simmering, Orr, 2009). Extroverts were more likely to engage in social activities (Ross et al., 2009).

Extroverted personality types posted less personal information about themselves than introverted personalities (Amichai-Hamburger & Vinitzky, 2010). Individuals with a higher level of neuroticism were more willing to share personally identifying information



on Facebook and were less likely to use private messages (Amichai-Hamburger & Vinitzky, 2010). Amichai-Hamburger and Vinitzky (2010) determined neuroticism by using how many personal pictures were posted. Persons with low or high levels of neuroticism prefer to share more basic information than persons with a moderate level of neuroticism (Amichai-Hamburger & Vinitzky, 2010).

Individuals with more of a narcissistic personality are more likely to share more information on social networking sites (Hsu et al., 2011). Social networking sites can be designed to have more purposes to attract the attention of narcissistic persons (Hsu et al., 2011). For example posting information, photos and playing time-consuming games to appeal to others (Hsu et al., 2011). Saslow et al (2012) too stated in their research individuals high in narcissism were more likely to engage in self-promotion on their Facebook profiles, as did De Feyter et al (2013). Facebook users were more likely to be extraverted and narcissistic (Ryan & Xenos, 2011).

### **Online networking sites for the use of educational purposes**

Although the impact online social networking sites have on communication and psychological wellbeing is highly important, the sites also have an impact on learning. Various colleges and universities have integrated education technology with modern face-to-face classes (Dziuban & Moskal, 2011). Most face-to-face courses are enduring some form of enhancement through a number of technological innovations (Dziuban & Moskal, 2011). These opportunities create a rich and varied educational landscape for students to obtain information, experience learning, interact with their peers and instructors, and engage in a wide variety of a school's academic curriculum (Dziuban &

Moskal, 2011). In many respects, expanded class formats comprise a proactive response to the population's need for educational flexibility and responsiveness (Dziuban & Moskal, 2011). A meta-analysis conducted discovered students taking online learning courses performed better than those receiving face-to-face instruction (Dziuban & Moskal, 2011). Forgie, Duff and Ross (2013) found a similar finding. An online survey of health care students revealed that most prefer to use online information sources (Forgie, Duff, & Ross, 2013). Even though the study may have indicated online courses may be more beneficial than face-to-face courses, there were some flaws with the study (Dziuban & Moskal, 2011). The results did not provide evidence to positively conclude online academic courses outweigh face-to-face academic courses (Dziuban & Moskal, 2011).

When students are asked to evaluate courses they have taken, they do not consider course mode an important element when defining the important aspects by which they evaluate their educational experience (Dziuban & Moskal, 2011). Students pay much more attention to the overall educational experience and less attention to the individual aspects of a course identified in the rating questions when evaluating (Dziuban & Moskal, 2011). Also, students in technology-mediated courses build their own personal environment for learning and the structure of the course has less to do with how they evaluate their experiences (Dziuban & Moskal, 2011). Forgie, Duff and Ross (2013) also examined the impact online social networking sites had on learning in regards to medical students, but in a different context.

Twitter is an online social networking service, accessible from any Internet-capable device (Forgie et al., 2013). While other social networking sites are online

confessionals or portfolios of personal current events, Twitter is designed and used as a vehicle to converse and share ideas (Forgie et al., 2013). It allows individuals to converse virtually through micro blogging by exchanging 140 characters or less (Forgie et al., 2013). Twit, Tweepie and Tweeters are Twitter users (Forgie et al., 2013). The Twittersphere is the entire community of Twitter users (Forgie et al., 2013). A Twitterstream is the chronological list (i.e. similar to an e-mail inbox) of Tweets from Twitter users that you follow (Forgie et al., 2013). Every time a Tweepie that you follow Tweets something, it will appear in your Twitterstream (Forgie et al., 2013). Similarly, any of your Tweets would appear in the Twitterstream of people following were you (Forgie et al., 2013). ReTweeting was a way to get started in Twitter by identifying public Tweets in your area of interest and broadcasting them to your followers (Forgie et al., 2013). The more you Tweet, the more Twitter users would find you and follow you (Forgie et al., 2013). A hash tag (#) was used to highlight a search term in a Tweet (Forgie et al., 2013).

Since Twitter was designed to share ideas and hold conversations, Twitter may be the most likely candidate for integrating social networking and medical education (Forgie et al., 2013). Students received as much information from each other as they did from the media (Forgie et al., 2013). Therefore, medical educators should be up to date on available sources and methods to provide online information to students, such as links on a Twitter homepage or useful Tweets about medical education (Forgie et al., 2013). It was advisable that medical educators set up specific Twitter accounts for each of their classes (Forgie et al., 2013). Many medical students and residents were previously accustomed to checking Tweets, texts and e-mails regularly (Forgie et al., 2013). Using

Twitter to post links to credible sources would most likely increase students' use of those resources and as a simple click will lead to the information (Forgie et al., 2013). Twitter has been examined as a tool to enhance participation in lecture-based settings (Forgie et al., 2013). As the classroom discussion unfolds, students were encouraged to Tweet their questions via Twitter and a live stream of Tweets is posted on the Twitter timeline (Forgie et al., 2013). This in turns allowed students to ask questions that related to their own experiences, which may enhance their learning processes (Forgie et al., 2013).

A Live Twitter Chat was also highly helpful for students who may be unable to attend class and (Forgie et al., 2013). An online survey of health care students revealed that most preferred to use online information sources (Forgie et al., 2013). Medical educators must be up to date on available sources and methods to provide online information to students such as links on a Twitter homepage or useful Tweets about medical education (Forgie et al., 2013). Students learned in both formal and informal settings (Forgie et al., 2013). Although Forgie, Duff and Ross (2013) discovered information about the benefits Twitter has on medical students, they did uncover a default in their study. Twitter may increase student engagement in large group learning situations, it is not clear if the use of this technology will lead to deeper learning (Forgie et al., 2013). Hollinderbaumer et al (2013) also stated Twitter has benefits for higher education students. While Forgie et al (2013) investigated the beneficial factors of Twitter on medical students; Kabilan, Ahmad and Abidin (2010) examined beneficial factors as well, but with the use of Facebook.

A study was conducted in Malaysia exploring undergraduate students' uses of Facebook and their views on Facebook as an online educational environment for learning

English (Kabilan, Ahmad, & Abidin, 2010). Prior to the study, Facebook was identified as emphasizing the aspects of students' improvement of language skills, students' motivation, confidence and attitudes towards learning the English language (Kabilan et al., 2010). The results at the end of the study showed majority of the students' was they agree Facebook can be an online learning environment to facilitate English language learning in terms of improvement of language skills and students' motivation, confidence and attitudes towards English language learning (Kabilan et al., 2010). Kabilan et al (2010) also displayed how the students agreed the use of Facebook would enhance their communication and writing skills. Some of the students also took note on how they thought the use of Facebook would increase their confidence in learning the English language (Kabilan et al., 2010). Mainly because students' need to read and write in order to communicate with friends in Facebook, their confidence levels would increase because, they wrote and read more in Facebook (Kabilan et al., 2010). Mazman and Usluel (2011) too examined the beneficial use of Facebook combined with learning.

Facebook was seen as a favorable educational tool due to its structure and various utilities (Mazman & Usluel, 2010). Social network sites supported collaborative learning, engage individuals in critical thinking, enhance communication and writing skills (Mazman & Usluel, 2010). On the other hand, how and for which purposes these tools would be used in educational contexts is still awaiting researchers' interest (Mazman & Usluel, 2010)? In this study, Mazman and Usuel (2010) tested to explain the educational use of Facebook. Educational use of Facebook was explained directly by purposes of Facebook usage (Mazman & Usluel, 2010). The findings suggest the educational use of Facebook has a significant positive relationship with its use for communication,

collaboration and resource/material sharing. In other words, education and adoption of Facebook have a positive relationship (Mazman & Usluel, 2010). Huang, Hood and Yoo (2012) examined other online technologies being integrated in educational learning as well.

Web 2.0, a term created by O'Reilly (Huang, Hood, & Yoo, 2013) is an active and open web architecture that enables users to participate in facilitating their active learning (Huang et al., 2013). Web 2.0 allows users with opportunities to participate in collective and collaborative learning activities through applications such as blogs, wikis, social networking sites, online games, online video sharing and virtual environments (Huang et al., 2013). University students were assigned to Web 2.0 courses in an introductory level educational technology course in a teacher education program (Huang et al., 2013). Throughout the semester students were exposed to different types of Web 2.0 applications and learning how to use them to enhance their teaching practices (Huang et al., 2013). The results indicated the participants had a more positive attitude toward using online social networking sites and online video sharing tools than other Web 2.0 applications (Huang et al., 2013). Furthermore, Huang et al (2013) did discover gender differences when applying the various Web 2.0 technologies. Females were more apprehensive than males with applying Web 2.0 to their teaching practices (Huang et al., 2013). Also females preferred the content of online learning than the male subjects (Huang et al., 2013). Schaper, Forrest, Tipold and Ehlers (2013) conducted a brief study on the impact on German veterinary students.

Internet use among veterinarians is considerably high (Schaper, Forrest, Tipold, & Ehlers, 2013). A social network called NOVICE was specifically created for veterinary

medical students for teaching and training purposes (Schaper et al., 2013). The site enables communication between, professors, other specialists and the students (Schaper et al., 2013). Roblyer, McDaniel, Webb, Herman and Witty (2010) were more interested in college faculty and students' perceptions online social sites have on their higher education.

The researchers compared faculty and students' uses of Facebook as well as their perceptions of its benefits as an educational tool (Roblyer, McDaniel, Webb, Herman, & Witty, 2010). The amount of students who had a Facebook was higher than the amount of staff members who did (Roblyer et al., 2010). However, there was no significant difference on how many times students compared to staff members checked their account (Roblyer et al., 2010). College students were likely to check email and Facebook often, but faculty was more likely to check their email more frequently than Facebook (Roblyer et al., 2010). Since Roblyer et al (2010) was also interested in educational use, they discovered neither the faculty nor students used online social networking sites for educational purposes. That is were the use of online social networking sites use was minimal (Roblyer et al., 2010). Faculty stated they did use Facebook as a means to stay in touch with alumni and students taking courses abroad (Roblyer et al., 2010). It was preferred to use online social sites for communication purposes rather than educational purposes (Roblyer et al., 2010). Educational purposes and Facebook use were of interest to Kirschner and Karpinski (2010).

Kirschner and Karpinski (2010) conducted a survey on undergraduate and graduate students. Participants were asked about their GPA, hours spent studying and extracurricular involvement (Kirschner & Karpinski, 2010). The participants stated

Facebook either had a positive or negative impact on their academic performance. Some FB users reported not using the site frequently enough for it to have an impact (Kirschner & Karpinski, 2010). These particular students emphasized academics was a priority for them (Kirschner & Karpinski, 2010). The students who reported a negative impact, 74.3% of the 35 participants claiming that FB had an impact, stated they procrastinated and were distracted from schoolwork and had poor time-management skills (Kirschner & Karpinski, 2010). Students who noted a positive impact responded saying Facebook gave them a chance to form study groups (Kirschner & Karpinski, 2010). Junco (2012) also investigated the correlation between times spent on Facebook; overall GPA and time spent preparing for class.

Junco (2012) surveyed undergraduate students from a university in the United States. The findings indicated the amount of time spent on Facebook and checking Facebook was correlated with GPA (Junco, 2012). Junco (2012) noticed students who spent a large amount of time on Facebook had a lower GPA. Focusing less time on academic work could negatively impact academic success (Junco, 2012). Paul, Baker and Cochran (2012) also discovered in their study how a high amount of time spent on online social networking sites had a negative impact on academic performance. Increased levels of deficit resulted in increased time spent on online social networks (Paul, Baker, & Cochran, 2012). High frequency of checking a friend's Facebook was positively predictive of overall GPA (Junco, 2012). On the contrary, while frequency of chatting on the Facebook instant messaging and frequency of posting status updates negatively predictive GPA (Junco, 2012). Facebook checking was not related to time spent preparing for class (Junco, 2012). Majority of research has been devoted to understanding



the use of online social networking sites on adolescents and early adulthood, few have researched the use among parents. Russell (2012) conducted a study to investigate the use of such sites amongst mothers.

The study took place in the United Kingdom and studied Netmums, which is a social networking site for mothers or mums (Russell, 2012). Netmums was designed to provide support for individuals asking questions or experiencing distress (Russell, 2012). Even though the website was used primarily by mothers, fathers, grandfathers and other caregivers were encouraged to use the benefits the online community had to offer (Russell, 2012). A discussion board was held called The Netmums Coffee House Forum, which consisted of thousands upon thousands of discussions, and could be searched to draw together common views on particular topics (Russell, 2012). Forum discussions have been led by Netmums staff or invited guests and, to a focus group, where members are encouraged to express their views on particular questions (Russell, 2012). Online communities such as Netmums are of considerable interest to professionals and academics from different disciplines (Russell, 2012). For instance, as an Internet phenomenon the power it has is the subjects of study by e-democracy specialists (Russell, 2012). Others were interested in the role this particular community has had in developing policy and services that are helpful to families (Russell, 2012). Even though the studies have stated positive effects the online social networking sites have on individuals, only a few negative outcomes have been identified. Paradise and Sullivan (2012) focused their study on only the negative outcomes.

## **Negative effects**

The Third Person Effect (TPE) predicted people perceived themselves as invulnerable to the negative effects of media and perceive others were more affected (Paradise & Sullivan, 2012). Paradise and Sullivan (2012) asked their respondents to estimate the negative effect of Facebook on their offline relationships, future employment and privacy for the self. The participants' did not perceive Facebook to have had negative effect on their offline relationships (Paradise & Sullivan, 2012). As for the negative effects on privacy and future employment, subjects' did not believe there was not a negative effect (Paradise & Sullivan, 2012). Paradise and Sullivan (2012) examined whether a greater third person perceptual gap between self and others for the three effect types would be more likely to support enhanced Facebook regulations.

The findings were the third person effect does not have a negative impact (Paradise & Sullivan, 2012). This may be explained by the fact that one's closest friends were a part of the respondent's personal relationships; thus, if a respondent does not perceive his/her own relationships as negatively influenced by Facebook, they have less reason to perceive their friends' relationships as negatively affected as well (Paradise & Sullivan, 2012). Also, respondents may be over-estimating their social ties to their network of Facebook friends, which helps explain why they perceive themselves to be largely immune, or less immune than others, to the negative effects of Facebook (Paradise & Sullivan, 2012). Even with privacy settings in place, the fact is most undergraduates have such large friend networks means they may be vulnerable to an array of threats (i.e., identify theft, harassment) (Paradise & Sullivan, 2012). Duque and Ynalvez (2009) also researched the negative impact of social networks on sociability.

Duque and Ynalvez (2009) gathered participants from South Louisiana and studied how the individuals residing in that area were affected. The Internet was found to be associated negatively with certain kinds of sociability (Duque & Ynalvez, 2009). Sociability was defined as time spent with family and/or friends (Duque & Ynalvez, 2009). The results indicated after Duque and Ynalvez (2009) conducted the study was those who did not socialize via online social networks and those who began socializing in that manner later in their peers were more integrated with others offline. Persons who communicated via online social networks reported less social contact with others (Duque & Ynalvez, 2009). De Feyter et al (2013) too noted the negative effects online social sites can possess.

Facebook was the choice of research for De Feyter et al (2013). Facebook behavior of someone's romantic partner can stimulate Facebook-related jealousy, stemming from exposure to confusing information about the partner that they might never have encountered if Facebook had not existed (De Feyter et al., 2013). Extroverted users are more likely to show addictive tendencies and observing people's interactions was positively linked to feelings of loneliness (De Feyter et al., 2013). Even though it may appear that the majority of individuals use online social networks, there are still a handful of people that do not.

Social media adoption is not universal for all emerging adults (Bobkowski & Smith, 2013). Bobkowski and Smith (2013) examined the emerging adults how chose not to participate in online social networks. Young adults who do not partake in online networks have different personality types and characteristics. The individuals are inwardly oriented, inactive in their communities and lack social mobility (Bobkowski &

Smith, 2013). Social media non-adopters are more introverted, have fewer offline friends, and fewer positive friendships than adopters (Bobkowski & Smith, 2013). Non-adopters lack the social connections, which may otherwise motivate them to use social media (Bobkowski & Smith, 2013). Non-adopters may be less motivated than adopters to grow their social capital (Bobkowski & Smith, 2013). Non-adopters had a less need for surveillance of friends along with less need for online affirmation than adopters (Bobkowski & Smith, 2013). Bobkowski and Smith (2013) identified more research on non-adapters needs to be conducted and their results may not contain validity on the account of the amount of non-adapters is minimal.

In conclusion, early studies suggested Internet use decreased sociability (Chen, 2013). It was once assumed high use of online social communication would cause social isolation and individuals would be cut off from genuine social relationships (Kraut et al., 1998). However, a growing body of literature shows the relationship between Internet use and personal networks are positive (Chen, 2013). College students take advantage of online social network sites to acquire breadth in social relationships. Manago et al (2012) stated more intensely college students used Facebook, the more they perceived they were included into their university community. The more included they were, the more confident they were in their ability to secure support from distant high school and hometown relationships (Manago et al., 2012). Research continues to be conducted to understand the total impact Facebook and other online social networking sites have on college students and other individuals.

## **Chapter 3**

### **Methodology**

#### **Participants**

Undergraduate students from a local university, Rowan University, were chosen to participate in the study. The Rowan subject pool was a database used to recruit participants and allow for a variation of participants from major, age, race, ethnicity and gender/sex. The participants' majors differed greatly. However, each student was enrolled in an introduction psychology course. Their participation in the study was mandatory to obtain credit towards their introductory psychology course. Six undergraduate students contributed to the study. Two of the participants were females and the remaining four subjects were males. Gender was not an important factor in the study, but it was noted.

Students under the age of 18 years old were excluded from participating in the study. Subjects either resided on campus grounds or resided within the local school area. Race and ethnicity was not an important factor, but each member had a diverse cultural background. Each subject was randomly assigned to two groups for greater variation: face-to-face communication and Facebook communication.

#### **Design**

Communication is an important factor amongst college students. To measure communication, two groups were created and group membership was the independent variable with two levels. One group was the face-to-face communication group: one of the independent variable levels. The second group was the Facebook communication group: the second

independent variable level. The number of words obtained within each group was analyzed. The word count was the dependent variable.

The number of words from each participant in the face-to-face communication group was counted. The total number of words from each participant in the Facebook communication group was counted as well. If a member of the Facebook communication group liked another member's comment, the Like was considered as a word. Liking a status on Facebook is a common behavior amongst users of the online social networking website.

## **Procedures**

A database known as the Rowan Subject Pool was used to recruit students as the Rowan. The study was posted on the Rowan Subject Pool database to recruit participants for the study. Four students were placed in the face-to-face communication group and the other two participants were placed in the Facebook communication group. A room in the school's student center was reserved to allow for the study to be conducted. Each participant was given a specific date and time on when to attend the study.

To accurately count the number of words exchanged in the face-to-face communication group, the group members were video and audio recorded. The group was given a topic of discussion. The topic of discussion was, what is the last thing you read, heard or saw in the news, whether it is related to the weather, sports, education, celebrities, etc.? The group was given fifteen minutes to have their discussion. After the fifteen minutes had ended, the members of the group were allowed to depart from the experiment.

In order for the subjects of the Facebook group to be able to communicate via Facebook, each member needed a Facebook account. A friend request was sent so the two participants would have access to the Facebook account created for the study. Once permission was granted, the students had access to participate in that portion of the study.

A status was posted on the Facebook page. The status was the same question asked for the face-to-face communication group. In order to respond to the status, the participants commented on the status in the comment box. Comments were sent back and forth between group members. One participant liked a comment by clicking the like button, rather than specifically typing a comment. Once the fifteen minutes had ended, the subjects were deleted from the Facebook account. Only the researcher had access to the conversations held amongst the group members. Particular privacy settings were in place to not allow individuals who were not participating in the experiment from access to the contents of the page. Privacy settings were also in place to protect the subjects' identities and conversations discussed. The results are as follows.

## **Chapter 4**

### **Results**

#### **Statistical Analysis**

Each communication group was asked the same question, what is the last thing you read, heard or saw in the news, whether it is related to the weather, sports, education, celebrities, etc.? The word count exchanged from each participant was counted and analyzed. The face-to-face communication group was observed first. The audio and visual recordings were watched from the face-to-face communication group. The number of words from each participant was counted. To ensure word count accuracy, the recording was watched twice. Second, the Facebook communication group was observed. The Facebook page was accessed and the word count from all the comments by each participant was noted. To ensure the counting was accurate, recounting took place a second time as well. Although gender was not an important factor, how many words the females said compared to the males was noted. In addition to counting the numbers of words exchanged, the numbers of Likes was counted.

In the face-to-face group, participant one who was a female had a word count of 910 words. Participant two who was also a female had a word count of 451 words. Male participant number three had a total word count of 250 words. The second male participant, number four, had a total word count of 487 words. Participant one had the highest word count in this group. She also had the highest female word count. However, male participant number four had the highest male word count. As for the Facebook group, male participant one had a word count of 99 words. Male participant number two had a total word count of 85 words. In the Facebook group, male participant one had a



higher word count than male participant two. Besides word count, other observations were noted that took place in the Facebook group. In the Facebook group, male participant number two liked a comment made by male participant number one. Male participant number one entered a smiley face along with his word comments when responding to participant number two. The like was considered a word, but the smiley face was not.

### **Descriptive Analysis**

Once the total participant word count was taken from the group members, the participant word count from the face-to-face communication group and the Facebook communication group were analyzed in SPSS. An Independent Samples T Test was conducted. The results indicated there was no significant difference between the groups. Although observing the high numbers in comparison to the Facebook group, it would be assumed the difference between both groups would be significant. However, when analyzed in SPSS, the analysis indicated there was no significant difference between the two communication groups.

The face-to-face group had a mean of  $M=549.5000$  with a standard deviation of  $SD=138.67498$ . The Facebook group had a mean of  $M=92.0000$  with a standard deviation of  $SD=7.00000$ . Findings were significant if the p level was less than .005. The significance in this particular study was .093, yielding insignificant results. In summary, it was hypothesized the face-to-face communication group would have a lower word count than the Facebook group. It was assumed there would be a significant difference between the two communication groups. Nevertheless, the results from an Independent

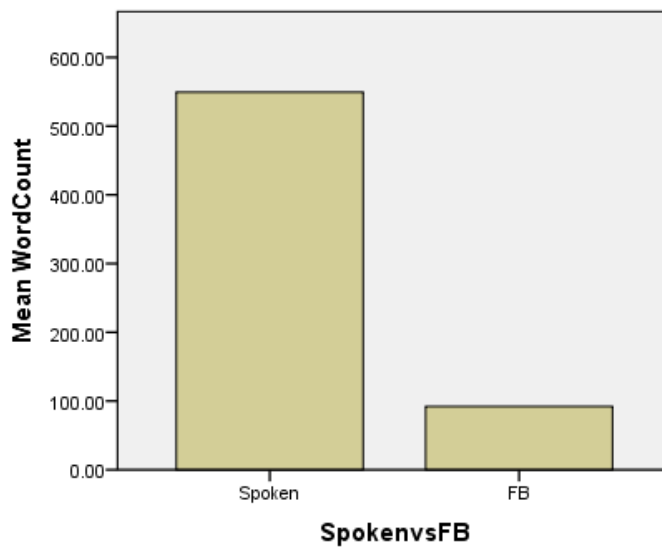
Samples T test stated otherwise. There was no significant difference between the groups.

By observing the means from the face-to-face group and the Facebook group, it would appear judging by the means there was a difference. Viewing the significance level, there was no difference.

Table 1

*Communication Group Word Count*

Communication Group	N	Mean	Standard Deviation
Face-to-face	4	549.5000	138.67498
Facebook	2	92.0000	7.00000
Total	54	641.5000	145.67498



*Figure 1. Comparing mean word count between both groups*

## **Chapter 5**

### **Discussion**

#### **Conclusion Regarding Sample**

The sample size in the study was not a representation of the university student body or a representation of other undergraduate students. Rather, the results should be examined as individual differences in communication contributing to the results. Overall, the participants in the face-to-face group had a higher word count than the participants in the Facebook group. The face-to-face group had a total of four students, two male students and two female students. Where as, the Facebook group had two participants, both males. An interesting observation in the Facebook group was made. One of the participants had entered a smiley face in his sentence along with his word comments. Also in the Facebook group, the other participant had liked his group member's comment.

A small sample size along with an uneven amount of participants in each group had an impact on the results. When an Independent Samples T Test was conducted in SPSS and analyzed, the results revealed there was no significant difference between the face-to-face group and the Facebook group. A mean of  $M=549.5000$  from the face-to-face group and a mean of  $M=92.0000$  from the Facebook group and comparing the two, it would appear a difference between the two exists. On the other hand, when cross-referencing the significance of .093 from SPSS, there was no significant difference.

Although the groups were asked a question regarding recent events on the news, participants were not restricted to discuss only current event topics. A general question

was asked to allow more opportunity for the subjects to converse with one another. The topics that were discussed ranged from specific events that had taken place on campus, experience while residing in the dormitories on campus, academic performance and latest event in the news.

### **Limitations**

Studies are not without limitations. A limitation presented in this study was the sample size. Participants were not evenly distributed into both groups. One group had two more students than the other group. In addition, gender was not evenly distributed even though gender was not an independent variable. The Facebook group consisted of two male participants only, where as the face-to-face group consisted of two females and two males. An even distribution of gender could have possibly altered the results in the Facebook group. Participation in this particular study was optional, but participation in a graduate study was mandatory to obtain credit for an introductory psychology course the participants were enrolled in. The study should be replicated for further research, but taking the limitations in mind. With various methods used to enhance communication, methods of communication will continue to change and their impact should be considered.

### **Summary**

Although the study attempted to discover the negatives to online communication, research has shown online social networking sites create opportunities for young people to nurture friendship intimacy (Manago et al., 2012). Other research has indicated young individuals use online social networking sites to connect with friends, support and create

emotional ties and create new friendships (Reich, Subrahmanyam, & Espinoza, 2012). Paradise and Sullivan (2012) identified participants' did not perceive Facebook to have had negative effect on their offline relationships.

The analyzed results in this particular study portrayed no difference between the face-to-face group and the Facebook group, correlating with Paradise and Sullivan's (2012) study. Insignificant results yielded the methods in which the individuals communicated did not have an impact on their conversation. Younger individuals can initiate and maintain relationships with individuals they encounter online (Smahel, Brown, & Blinka, 2012). Arnaboldi, Guazzini and Passarella (2013) noted online social networking sites like Facebook and Twitter have created new communication methods, changing the way individuals interact and connect to each other. In the Facebook group one of the participants liked the other group member's comment and a smiley face was entered as well along with a word comment. It would correlate with Arnaboldi, Guazzini and Passarella (2013) that Facebook in this particular study was a new method, which allowed for a new way for the group members to communicate with one another and express their ideas.

## **Conclusion**

In conclusion, online social networking sites have turned into virtual life-domains for gathering and sharing information, ideas, and opinions (Hossain & Veenstra, 2013). With the increase of the use of large communication networks, it has raised the question about the changing nature of friendship (Manago et al., 2012). The continuous changing of friendships due to the increase of the social networking sites was the purpose behind the study being conducted. Valkenburg and Peter (2009) also conducted a study to

debunk previous assumptions stating the increased use of online social networking sites on younger individuals would hinder their wellbeing and friendships. Results from their study indicated adolescents' social connectedness was enhanced through computer mediated communication (Valkenburg & Peter, 2009). Results from the study conducted yielded no difference between the face-to-face group and the Facebook group. Disclosing personal information usually increased intimacy (Valkenburg & Peter, 2009). Online self-disclosure was positively correlated with friendship formation and quality (Valkenburg & Peter, 2009).

## References

- Amichai-Hamburger, Y., & Vinitzky, G. (2010). Social network use and personality. *Computers in Human Behavior*, 26(6), 1289-1295.
- Arnaboldi, V., Guazzini, A., & Passarella, A. (2013). Egocentric online social networks: Analysis of key features and prediction of tie strength in Facebook. *Computer Communications*, 36(10-11), 1130-1144.
- Awan, F. & Gauntlett, D.,. (2013). Young people's uses and understandings of online social networks in their everyday lives. *Young: Nordic Journal of Youth Research*, 21(111)
- Baker, L. R., & Oswald, D. L. (2010). Shyness and online social networking services. *Journal of Social and Personal Relationships*, 27, 873-889.
- Bane, C. H., Cornish, M., Erspamer, N., & Kampman, L. (2010). Self-disclosure through weblogs and perceptions of online and 'real-life' friendships among female bloggers. *Cyberpsychology, Behavior, and Social Networking*, 13(2), 131-139.
- Bobkowski, P., & Smith, J. (2013). Social media divide: Characteristics of emerging adults who do not use social network websites. *Media Culture & Society*, 35(6), 771-781.
- Boyd, D. M., & Ellison, N. B. (2007). Social network sites: Definition, history and scholarship. *Journal of Computer - Mediated Communication*, 13(1), 210-230.
- Carroll, B., & Landry, K. (2010). Logging on and letting out: Using online social network sites to grieve and to mourn. *Bulletin of Science, Technology & Society*, 30(341), 341-349.
- Chen, W. (2013). Internet use, online communication, and ties in Americans' networks. *Social Science Computer Review*, 31(4), 404-423. doi:10.1177/0894439313480345
- Chung, J. E. (2013). Social interaction in online support groups: Preference for online social interaction over offline social interaction. *Computers in Human Behavior*, 29(4), 1408-1414.
- Cleemput, K. V. (2010). "I'll see you on IM, text, or call you": A social network approach of adolescents' use of communication media. *Bulletin of Science, Technology & Society*, 30, 275-285.
- Davis, K. (2010). Coming of age online: The developmental underpinnings of girls' blogs. *Journal of Adolescent Research* 10.1177/0743558409350503, 25(1), 145-171.

- De Feyter, T., De Couck, M., & Stough, T. (2013). Facebook: A literature review. *New Media & Society*, 15(6), 982-1002.
- Deters, F., & Mehl, M. R. (2012). Does posting Facebook status updates increase or decrease loneliness? An online social networking experiment. *Social Psychology & Personality Science*, 4(5), 579-586.
- Duque, R. B., & Ynalvez, A. H. (2009). Internet practice and social ability in south Louisiana. *New Media & Society*, 11(4), 487-507.
- Dziuban, C., & Moskal, P. (2011). A course is a course is a course: Factor invariance in student evaluation of online, blended and face-to-face learning environments. *The Internet and Higher Education*, 14(4), 236-241.
- Forgie, S. E., Duff, J. P., & Ross, S. (2013). Twelve tips for using twitter as a learning tool in medical education. *Medical Teacher*, 35(1), 8-14.
- Holmes, K. (2013). Of course I don't post too much preferences and perceptions of relational maintenance online. *SAGE Open*, 3(2).
- Hossain, M. D., & Veenstra, A. S. (2013). Online maintenance of life domains: Uses of social network sites during graduate education among the US and international students. *Computers in Human Behavior*, 29(6), 2697-2702.
- Hsu, C., Wang, C., & Tai, Y. (2011). The closer the relationship, the more the interaction on Facebook? Investigating the case of Taiwan users. *Cyberpsychology, Behavior & Social Networking*, 14(7-8), 473-476.
- Huang, W. D., Hood, D. W., & Yoo, S. J. (2013). Gender divide and acceptance of collaborative web 2.0 applications for learning in higher education. *The Internet and Higher Education*, 16(0), 57-65.
- Junco, R. (2012). Too much face and not enough books: The relationship between indices of facebook use and academic performance. *Computers in Human Behavior*, 28(1), 187-198.
- Kabilan, M. K., Ahmad, N., & Abidin, M. J. Z. (2010). Facebook: An online environment for learning of english in institutions of higher education? *The Internet and Higher Education*, 13(4), 179-187.
- Kim, J., & Roselyn Lee, J. (2011). The facebook path to happiness: Effects of the number of facebook friends and self-presentation on subjective well-being. *Cyberpsychology, Behavior, and Social Networking*, 14(6), 359-364.
- Kirschner, P. A., & Karpinski, A. C. (2010). Facebook® and academic performance. *Computers in Human Behavior*, 26(6), 1237-1245.



- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukopadhyay, T., & Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological wellbeing? *American Psychologist*, 53(9), 1017-1031.
- Ledbetter, A. M., Mazer, J. P., DeGroot, J. M., Meyer, K. R., Mao, Y., & Swafford, B. (2010). Attitudes towards online social connection and self-disclosure as predictors of facebook communication and relational closeness. *Communication Research*, 33(1), 27-53.
- Lewis, J., & West, A. (2009). 'Friending': London-based undergraduates' experience of facebook. *New Media & Society*, 11(7), 1209-1299.
- Manago, A. M., Taylor, T., & Greenfield, P. M. (2012). Me and my 400 friends: The anatomy of college students' Facebook networks, their communication patterns, and well-being. *Developmental Psychology*, 48(2), 369-380.
- Mazman, S. G., & Usluel, Y. K. (2010). Modeling educational usage of Facebook. *Computers & Education*, 55(2), 444-453.
- Mikal, J. P., & Grace, K. (2011). Against abstinence-onl education abroad: Viewing internet use during study abroad as a possible experience enhancement. *Journal of Studies in International Education*, 16(3), 287-306.
- Mikami, A., Szewedo, D. E., Allen, J. P., Evans, M. A., & Hare, A. L. (2010). Adolescent peer relationships and behavior problems predict young adults' communication on social networking websites. *Developmental Psychology*, 46(1), 46-56.
- Muscanell, N. L., & Guadagno, R. E. (2012). Making new friends or keep the old: Gender and personality differences in social networking use. *Computers in Human Behavior*, 28(1), 107-112.
- Paradise, A., & Sullivan, M. (2012). (In)visible threats? The third person effect in perceptions on the influence of Facebook. *Cyberpsychology, Behavior & Social Networking*, 15(1), 55-60.
- Park, N., Lee, S., & Kim, J. H. (2012). Individuals' personal network characteristics and patterns of Facebook use: A social network approach. *Computers in Human Behavior*, 28(5), 1700-1707.
- Paul, J. A., Baker, H. A., & Cochran, J. D. (2012). Effects of online social networking on student academic performance. *Computers in Human Behavior*, 28(6), 2117-2127.
- Rau, P., Gao, Q., & Ding, Y. (2008). Relationship between the level of intimacy and lurking in online social networking services. *Computers in Human Behavior*, 24(6), 2757-2770.

- Read, P., Shah, C., S-O'Brien, L., & Woolcott, J. (2012). 'Story of ones' life and a tree of friends' - understanding millennials' information behaviour in social networks. *Journal of Information Science*, 38(489).
- Reich, S. M., Subrahmanyam, K., & Espinoza, G. (2012). Friending, IMing, and hanging out face-to-face: Overlap in adolescents' online and offline social networks. *Developmental Psychology*, 48(2), 356-368.
- Roblyer, M. D., McDaniel, M., Webb, M., Herman, J., & Witty, J. V. (2010). Findings on Facebook in higher education: A comparison of college faculty and student uses and perceptions of social networking sites. *The Internet and Higher Education*, 13(3), 134-140.
- Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior*, 25(2), 578-586.
- Russell, S. (2012). Social networking research opportunities: The example of 'netmums'. *Journal of Research in Nursing*, 17(195), 195-206.
- Ryan, T., & Xenos, S. (2011). Who uses facebook? an investigation into the relationship between the big five, shyness, narcissism, loneliness, and facebook usage. *Computers in Human Behavior*, 27(5), 1658-1664.
- Saslow, L. R., Muise, A., Impett, E., & Dubin, M. (2012). Can you see how happy we are? Facebook images and relationship satisfaction. *Social Psychology and Personality Science*, 4(4), 411-418.
- Schaper, E., Forrest, N. D., Tipold, A., & Ehlers, J. P. (2013). How do German veterinarians use social networks? A study, using the example of the 'NOVICE' veterinary medicine network. *GMS Zeitschrift Für Medizinische Ausbildung*, 30(1), Doc12.
- Smahel, D., Brown, B., & Blinka, L. (2012). Associations between online friendship and Internet addiction among adolescents and emerging adults. *Developmental Psychology*, 48(2), 381-388.
- Subrahmanyam, K., Reich, S. M., Waechter, N., & Guadalupe, E. (2008). Online and offline social networks: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology*, 29(6), 420-433.
- Tian, Q. (2011). Social anxiety, motivation, self-disclosure and computer-mediated friendship: A path analysis of the social interaction in the blogosphere. *Communication Research*, 40(2), 237-260.

- Valkenburg, P. M., & Peter, J. (2009). Social consequences of the Internet for adolescents: A decade of research. *Current Directions in Psychological Science*, 18(1), 1-5.
- Van Zalk, M. H. W., Branje, S. T. J., Denissen, J., Van Aken, M. A. G., & Meeus, W. H. J. (2011). Who benefits from chatting, and why? The role of extraversion and supportiveness in online chatting and emotional adjustment. *Personality and Social Psychology Bulletin*, 37(9), 1202-1215.
- Veretilo, P., & Billick, S. (2012). Psychiatric illness and Facebook: A case report. *Psychiatric Quarterly*, 83(3), 385-389.
- Vicary, A., & Fraley, R. C. (2010). Students reaction to the shootings at Virginia Tech and Northern Illinois University: Does sharing grief and support over the internet affect recovery? *Personality and Social Psychology Bulletin*, 36(11), 1555-1563.
- Vitak, J., & Ellison, N. B. (2012). 'There's a network out there you might as well tap': Exploring the benefits of and barriers to exchanging informational and support-based resources on Facebook. *New Media & Society*, 15(2), 243-259.