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THE RELATIONSHIP BETWEEN ADOLESCENT IDENTITY FORMATION AND SOCIAL NETWORK SITE USE

BY

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DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Communication
in the Graduate College of the
University of Illinois at Urbana-Champaign, 2015

Urbana, Illinois

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Abstract

A majority of American adolescents use social network sites. Many adolescents access these sites multiple times a day. On these sites, adolescents engage in self-presentation by creating and managing personal profiles and by posting updates and photos. Past research has explored how much information teens share via social network sites and what motivations are behind such acts of online self-presentation. Indeed, adolescents are comfortable disclosing a fair amount of personal information online. Arguably, there are developmental reasons for adolescents' heavy use of social network sites. Given that exploration of the self is the primary "work" of adolescence (Erikson, 1968), it stands to reason that teens' attraction to social network sites may be related to the development of identity and self-concept.

The purpose of the present dissertation is to examine the relationship between use of social network sites and adolescent identity and self-concept development. Using a mixed-method approach, two studies were conducted to explore this phenomenon. The first study consisted of a survey of 227 adolescents that investigated how self-reported patterns of Facebook use were related to identity status and self-concept. The second study was a content analysis of the actual Facebook profiles of 204 of the participants from Study 1, so that Facebook behaviors could be observed and analyzed. The results from Study 2 were used to corroborate and substantiate relationships revealed in Study 1.

Both Study 1 and Study 2 revealed that adolescents who used Facebook more often, particularly by actively engaging with the site, were more likely to have an advanced identity compared to those who used the site less often. The findings are consistent with the idea that social media may offer teens a space to effectively work out their identities. Of course, it is also possible that teens with more advanced identities are drawn to social media. Furthermore, Study

1 found that the relationship between time spent on Facebook and identity status was moderated by offline parent-adolescent communication. Specifically, among those teens who had supportive communication with parents, there was a strong relationship between amount of time spent on Facebook and advanced identity status. In contrast, among teens with less supportive parent relationships, there was no relationship between time spent on Facebook and identity status.

In terms of aspects of the self-concept, both Study 1 and Study 2 revealed a negative relationship between Facebook use and the degree of complexity of the self. Consistent with the idea that Facebook may stylize or constrain the expression of the self, adolescents who used the site more often had lower complexity than did those who used the site less often. Study 1 also found a relationship between adolescent self-concept and the size of an adolescent's Facebook network. Specifically adolescents with larger and more diverse Facebook friend networks had higher self-concept clarity than did adolescents with smaller, less diverse Facebook networks. Finally, Study 1 found a relationship between engaging particular types of Facebook activities and adolescent self-concept. Adolescents who posted more status updates tended to have more complex self-concepts than did their peers who posted less status updates and adolescents who posted more photos had clearer self-concepts than did those who posted less photos.

Finally, both studies documented that feedback received on Facebook was related to self-esteem. As predicted, adolescents who received more negative feedback from friends reported lower self-esteem than did those who received less negative feedback.

The theoretical implications of the findings for Study 1 and Study 2 are discussed.

Acknowledgements

I am forever grateful to the Department of Communication at the University of Illinois for investing in my research and teaching. The faculty, staff, graduate students, undergraduate students at the University have left an indelible mark on me as a person and a scholar. Hail to the Orange!

I owe the debt of my gratitude to my advisor, Dr. Barbara J. Wilson. This dissertation would not have been possible without your generosity. Barb, you have remained patient through this process, and for that I am deeply appreciative. I am a better scholar, colleague, and teacher because of your influence. I strive to live up to the example you set for me.

I am forever appreciative of the guidance provided to me by my all-star doctoral committee members. John Caughlin, Kristen Harrison, and David Tewksbury, thank you for sharing your keen insight and whip-smart analysis of this project. My dissertation is better for it. Moreover, I am a better researcher for it.

I was lucky to work with the faculty, staff, and students at Urbana High School and Hononegah Community High School. Your willing enthusiasm to participate in this project made this dissertation possible.

The office staff in the Department Communication are one in a million. My dissertation would not have been possible without their help. Special thanks to Amy Holland for helping me with the financial aspects of this project, and to Mary Strum and Barbara Hall for always being supportive and helpful. In addition to the office staff, I must also thank three special undergraduate students: Noelle Freebeck, Nicole Mathes, and Zoe Liu. We spent too many hours in that crowded office together, but I am thankful for it. Not only were you coders for this dissertation, but you also taught me about managing research projects.

I'd also like to thank Charles South. I am lucky to have worked with such a talented statistician.

There are people in this world who experience something so similar to you, that you are forever bound together in friendship. To my fellow Illini graduate students and life-long friends, thank you for being my cheerleader when I was unsure, thank you for being the smartest people I know, and thank you for the countless laughs. Several friends deserve special recognition. Brad Bond, there are literally no words. Megan Haselschwerdt, Colleen Gibbons, and Vanja Lazarevic Stojkovic, you inspire me every day to keep doing my best work. Veronica Hefner, Laura Miller, and Cortney Moriarty, you helped pave the path for me, and I am forever grateful, LUMU. To the LaVoie, Delaney, Muñoz-Nájar, Wittenauer-Borelos, and Robinett families, thank you for providing a temporary roof over my head and permanent smile on my face.

My entire journey to this point would not have been possible without the unwavering support of my family. To my parents Ric and Lin, thank you for instilling in me the curiosity and confidence to continually question and research this big, beautiful world. To the other Dr. Drogos, Lauren thank you for knowing what this process is like and not laughing too hard at me during midnight data analysis sessions when I couldn't tell up from down. And to Dave, thank you for support and helping to keep me grounded.

Finally, to my love, Bobby. You chased me down a hallway in the Armory after our first class together and the rest is history. You have witnessed endless anxiety attacks throughout this process. Your steadfast confidence in me cannot be thanked enough. Thank you. I love you. And to the best writing partner a girl could ask for, Oskee Bow Wow, mutt extraordinaire, your company will forever warm my heart.

Table of Contents

List of Tables

List of Figures

Figure Page

Chapter 1

Introduction

Every time 17-year-old Gaby sat down at her computer, she confessed that her "fingers would automatically go to Facebook," (Hafner, 2009, December 20). Gaby is not alone in her avid use of a social network site. Facebook alone boasts 1.5 billion active users (Facebook.com, 2015). Moreover, much of this popularity is due to teens (boyd, 2006; Hargittai, 2007). In 2006, about half (55%) of American teenagers between the age of 12 and 17 reported having their own social network profile (Lenhart, Madden, Macgill & Smith, 2007). Only a few years later, a recent national study reported that 80% of American teens are members of at least one social network site (Lenhart et al., 2011). And in 2015, roughly three quarters of American teenagers are active members of more than one social network site (Lenhart, 2015). Arguably, social network sites have a ubiquitous presence in contemporary society, particularly among teens. As one 18-year-old put it, "If you're not on MySpace, you don't exist" (boyd, 2007, p. 1).

As adolescents spend time on SNSs, they are, in part, presenting various aspects of themselves to others. Self-presentation may be important to teens as they begin to explore their identities. Indeed, one of the hallmarks of adolescence is developing one's sense of self and identity (Erikson, 1968). During this time, adolescents struggle to define their own values, beliefs, and roles in the world (Harter, 1999). Breaking away from parents and spending more time with peers is part of this process (Kroger, 2004). Empirical research shows that self-exploration can manifest itself visibly as teens express changing identities through fashion (Crane, 2000), through bedroom decor (Larson, 1995; Steele & Brown, 1995), and even through school locker decorations (Macropolous, 2005). Today's teens seem to be moving some of their identity exploration to online spaces such as social network sites. By doing so, these adolescents may be sharing their identity explorations with multiple audiences, often simultaneously.

The purpose of my dissertation is to explore the relationship between adolescent use of social network sites and the formation of identity. In Chapter 1, I begin with a review of the popularity of social network sites, particularly among youth. I argue that the heightened popularity of such sites among teens is fueled by the developmental drive to form one's identity. The next section of Chapter 1 focuses on the development of identity and self-concept during childhood and adolescence. This section also explores how SNSs may influence the development of the self during the teen years. Included in this section are the research questions and hypotheses that will guide my dissertation. Chapter 2 overviews the mixed method approach I used in the current project. Specifically, Study 1 involved a survey of teenagers about their identity status, self-concept, and patterns of social network site use. Study 2 involved a content analysis of the Facebook profiles of the teens who participated in Study 1. Chapter 3 of this dissertation presents the results from Study 1 and Study 2, and Chapter 4 frames these results in a discussion section.

Adolescent Use of Social Network Sites

Visiting a SNS is the most popular computer activity among American youth ages 8 to 18 (Lenhart, 2009; Rideout, Foehr, & Roberts, 2009). Indeed, 70% of 12-to 17-year-olds in one national study reported visiting a SNS every day ("National survey of American attitudes on substance abuse XVI: Teens and parents," 2011, August). Another national study found that 64% of adolescents between the ages of 12 and 17 visit a social network site at least once a day; a majority of these teens (40%) reported logging on "several times a day" (Lenhart, et al., 2011). Not only do teens check such sites often, but they also spend a great deal of time on these sites. One study found that teens in this age range spend an average of one hour (:58) on social network sites each day (Rideout et al., 2009). Clearly, American youth have grown attached to using social network sites.

Adolescents in particular find social network sites attractive. For instance, when compared to adults, adolescents are more regular users of social network sites. A recent national study found that a vast majority (80%) of American teens are members of SNSs whereas only half (50%) of American adults are members of SNSs (Lenhart et al., 2011). Moreover, adolescents are more active on the sites than are adults. One study found that teenagers had significantly more friend connections, more comments left on their profiles and more media links on their profiles compared to adults' profiles (Pfeil et al., 2009). In another study, teens reported changing their SNS profile on a daily basis, which was substantially more frequent than the young adults did (Salaway, Caruso, & Nelson, 2008). In addition, Pfeil and colleagues (2009) found that teens were significantly more likely to make self-references and talk about emotions on their SNS profiles than adults were on their profiles. Pfeil et al. (2009) concluded that compared to adults, teenagers take greater care in building representations of their self on their SNS profiles.

One reason youth may be dedicating so much time to SNSs is because such sites can serve as a place to "hang out" (boyd, 2007). In fact, boyd (2007) has argued that these spaces act as a digital bedroom because they offer a semi-private place to socialize (boyd, 2007). It appears that teens agree that SNSs are a good place to fraternize. A national study found that nearly 9 in 10 teenagers (88%) confirmed that they "used social network sites to chat with friends" (Lenhart, et al., 2011). Teens have many ways to communicate and "hang out" on social network sites. For instance, a longitudinal analysis found that adolescents most commonly communicate on SNSs by either commenting on friends' profiles and photos or sending instant messages through the site (Lenhart, 2009). Of these, the most popular form of communication has remained posting a comment. In one study, a majority of teens reported that they had commented on their friends' profile pages (86%) and photographs (83%) (Lenhart, et al. 2009). A more recent

nationally representative survey confirms these findings, showing that fully 87% of teens in the sample reported using SNSs to comment on something a friend had posted (Lenhart et al., 2011).

Teens' choice of people to connect with on SNSs also supports the idea that these sites serve as a social space for adolescents. Originally many parents feared that adolescents would communicate with strangers on social network sites. However, as it turns out, the "friends" that adolescents include in their online social networks primarily are the same individuals that are already known offline (boyd, 2007; boyd & Ellison, 2007; Donath & boyd, 2004; Ito et al., 2008; Lenhart & Madden, 2007). It also appears that youth are particular about who they allow to connect to their profiles. Many youth have expressed that they consider their SNS profiles as their personal, private space that is not to be intruded upon by parents (boyd, 2007) or other adults, such as teachers (Hewitt & Forte, 2006). When teens construct their profiles, they do so with an intended audience of peers and friends with whom they already interact in face-to-face situations (boyd, 2007; Ellison, Steinfield, & Lampe, 2007; Lampe, Ellison, & Steinfield, 2006; Tufecki, 2008).

A second reason that SNSs may be so popular among teens is that they provide a forum for self-expression. In other words, SNSs can be personalized and decorated, much like the walls of an adolescent's room. Scholars have argued that a teen's bedroom is a private and personal haven for self-expression, often decorated with media artifacts to reflect teens' emerging self (Steele & Brown, 1995). In the same way, SNSs can be decorated with personal information and digital artifacts. The profiles of SNSs have several features, or affordances, that encourage users to share information about the self. These affordances provide youth with rich and varied opportunities to digitally "write themselves into being" (Sunden, 2003). For example, users can post biographical information such as age, sex, location, interests, hobbies, and favorite TV shows, books and movies. Users also can express themselves on their profiles

through blog-like entries and by revising status updates. Status updates can be about anything the user wants to share and can include links to multi-media artifacts such as video, audio, or photos, as well as tags to other users in the network.

Many teens take advantage of these affordances, and consequently are quite active on SNSs. For example, in one national survey of American teens (12 to 18 years of age), the vast majority of SNS users (86%) reported that they had posted a status update on their site (Lenhart et al., 2011). Nearly as many SNS users (80%) reported that they had posted photos or videos to their profiles. Moreover, almost 7 in 10 (69%) of these adolescents had tagged other people in their posts, photos, or videos. In one study, over one-third (35%) of older teenagers report that they change information on their profiles on a monthly basis and 15% of this sample reported changing their profile on a weekly basis (Salaway et al., 2008).

What types of information do teens post on these sites? A content analysis of 863 adolescent MySpace accounts found that virtually all youth in the sample disclosed their sex online (Patchin & Hinduja, 2010). Furthermore, a large majority (78%) revealed their current city of residence, half (50%) revealed a name, and about one fifth (21%) disclosed their school. Notably, the vast majority (88%) of these adolescents displayed a profile photo. On average these teens also included 29 additional photos on their profile. In a nationally representative survey of American teenagers, many SNS users reportedly provide their instant message screen name (40%), links to their blogs (39%), and their email address (29%) on their profile (Lenhart & Madden, 2007). However, teens rarely disclose their full name (Lenhart & Madden, 2007; Patchin & Hinduja, 2010).

Disclosure of information varies, however, among teens. In general, older teens (15-17 years of age) are more willing to share details about themselves on their profiles than are younger teens (12-14 years of age) (Lenhart & Madden, 2007; Lenhart et al., 2011). Sex also

plays a role in disclosure. Generally, adolescent females disclose more private or personal information than do males, including information about relationships (Stern, 2004). Girls also use more emotional language and self-references (Pfeil, Arjan, & Zaphiris, 2009).

Personalization of the profile may be a part of a larger need that adolescents have to define who they are. In his seminal book about identity, Erikson (1968) stressed that the process of coming to understand one's identity has a normative peak during adolescence. Moreover, Erikson noted the formative weight of this process by stating that it, "determines much of what follows" (p. 23).

Research suggests that youth may recognize that social network sites can help them to understand their developing selves. Manago and her colleagues conducted a focus group study in which they asked 23 older adolescents to reflect upon their experience using MySpace (Manago, Graham, Greenfield, & Salimkhan, 2008). Each of the six focus groups discussed issues of identity and explicitly acknowledged that SNS profiles are an optimal place to present one's identity to friends online (Manago, et al., 2008). Recognizing this function of SNSs, one female participant stated, "Whenever you put any kind of information out there you have the intention of what you want people to think about you" (Manago et al., 2008, p. 450). In other words, SNSs may serve as a testing ground for exploration of one's self. Adolescent participants in other studies also report that Internet technology facilitates self growth. For instance, a survey by Schmitt et al. (2008) found that 80% of adolescents who had personal web pages felt their pages helped others to understand who they are. In fact, almost half of the teens in the Schmitt et al. (2008) sample reported that it was easier to share information about themselves online than in face-to-face situations.

Given the comfort that adolescents experience online, it is not surprising that many teens report playing or experimenting with who they are when they are online (Gross, 2004; Schmitt,

Dayanim, & Matthias, 2008). For example, Valkenburg, Schouten, and Peter (2005) surveyed 600 preteens and teens (9- to 18-year-olds) about whether they had ever pretended to be somebody else while communicating online. Half (50%) of the respondents indicated that they had engaged in Internet-based identity experiments. These adolescents reported most commonly pretending to be older, to be a real-life acquaintance, or to be more flirtatious. The researchers also found that younger adolescents were more likely to experiment with their identity than older adolescents were. One of the main reasons that youth reported experimenting with their identity was to "explore how others react toward me" (Valkenburg et al., 2005).

The idea that teens can display and play with their identity online is not new. Turkle (1995) was among the first scholars to study youths' online identity expressions. She found that within text-based, multiplayer user domains (MUDS), adolescents could easily manipulate and play with presentation of their identities. The flexibility and anonymity afforded by MUDs encouraged some youth to create online persona that were vastly different from their offline identities.

Several conclusions can be drawn from the research reviewed in this section. First, use of SNSs is highly popular among American adolescents. Youth are avidly creating SNS profiles and using them to connect with others. Second, adolescents are comfortable disclosing personal information online and have taken advantage of the technological affordances of social network sites to declare and alter intimate information about themselves on their profiles. Third, teens' SNS profiles are often constructed specifically for a peer audience. Finally, it appears that teens themselves recognize social network sites as a space to present the changing aspects of themselves online while acquiring feedback about those changes.

Taken together, the research to date supports the argument that social network sites serve as a useful place where adolescents can test and explore who they are. Yet most of this work is

largely descriptive in nature, focusing primarily on what teens do on SNSs and the frequency of those behaviors. Very little of the research looks directly at how varying use of SNSs might be related to the developmental process of building identity and self-concept. Connecting technology use to developmental processes seems like an important next step in this line of research. Finally, research has yet to examine how teen SNS use compliments or detracts from typical face-to-face conversations that can help build identity. The current dissertation proposes a study to fill this gap in the literature. I now turn to a theoretical overview of identity formation.

Adolescence and Identity

Erik Erikson (1959, 1968) was one of the first scholars to theorize about identity development. Erikson (1968) argued that forming one's identity is a life-long process that peaks during the adolescent years. To date, a majority of the theorizing and empirical studies about identity define adolescence as a crucial developmental period associated with building one's identity (e.g., Harter, 2006; Marcia, 1966).

Although Erikson's writing has been criticized as being overly complex and dense (Waterman, 1999), several of his ideas have withstood the test of time. One of his enduring contributions is the idea that identity formation is a process marked by stages (Erikson, 1968). In particular, Erikson labeled adolescence as the "Identity vs. Role Confusion" stage. During this stage, adolescents synthesize and reorganize all previous childhood identifications. That is, adolescents question and explore the disparate values and ideals they formed in the past and work on how these will fit into their current identity. According to Erikson, the process ends when adolescents decide who they are and commit to one congruent and overarching identity (Erikson, 1959). He called this stage, "Identity vs. Role Confusion." However, Erikson (1968) also noted that some teens are unable to successfully form a coherent identity and thus, experience confusion about their role throughout their lives.

Building on Erikson's conceptualization of identity as a process, James Marcia (1966) defined identity formation as movement through four "statuses." Marcia found that individuals' identities naturally vary according to two processes: a) whether they have explored an identity and b) whether they have committed to an identity. For instance, the status marked by no attempt to either explore or commit to an identity is the *diffusion* status (Waterman, 1999). Individuals with a diffused identity may possess a loose sense of who they are, but it is ill-defined, not subject to much personal examination, and readily subject to change given the context (Waterman, 1988). In contrast to diffusion, the *achieved* identity status is characterized by someone who has actively explored and committed to an identity (Marcia, 1966). According to Marcia (1966), the achieved identity is the most developmentally advanced of the statuses because it denotes a final point of identity formation.

Research has explored the idea that adolescents progress from the diffused status toward the achieved identity status. To test this progression, a scale has been devised called the Objective Measure of Ego Identity Status (OMEIS), which asks individuals to report how much they agree with statements such as, "If it's right for my parents, it must be right for me," or "It took me awhile to figure it all out, but now I know what I want for a career" (Adams, Shea, & Fitch, 1979). Using the OMEIS, one national cross-sectional study found that a higher proportion of college upperclassman were in the achieved identity status than of young adolescents (Waterman, 1985). Furthermore, a longitudinal analysis of Dutch youth who took the OMEIS showed that over time the percentage of adolescents with a diffused identity decreased, whereas the percentage of youth with an achieved identity increased (Meeus, Iedema, Helsen, & Vollebergh, 1999).

Although research indicates that a majority of people eventually reach an achieved identity (Marcia, 1966), some do not. Marcia (1966) defined two identity statuses that describe

individuals who have either explored or committed to an identity, but have not yet reached the achieved status. Marcia (1966) labeled these two middle phases as the *foreclosed* and the *moratorium* statuses. According to Marcia (1966), the foreclosed status occurs when an individual commits securely to an identity that is never truly explored. Typically, these individuals take on the identity of close others, normally their parents (Marcia, 1991). Indeed families who are enmeshed, or excessively involved in one another's identity, can hinder the exploration of an adolescent's personal values, style, and identity (Cooper, Grotevant, & Condon, 1983).

Scholars have argued that the foreclosed status is less developmentally advanced than the moratorium status (e.g., Cote & Levine, 1988). Individuals in the moratorium status are in the process of exploring their identity, but have not made a commitment (Waterman, 1999). It appears that some level of exploration of one's identity separates the moratorium and achieved status as being more developmentally advanced than the diffused and foreclosed statuses. Marcia and colleagues have argued that some individuals continually move in and out of the moratorium status throughout their lives (Stephen, Fraser, & Marcia, 1992), reflecting a continual search for identity.

As it turns out, people who struggle to define their identity can suffer psychological and social consequences. For example, individuals with a diffused identity tend to be shyer (Hamer & Bruch, 1994), have lower levels of personal autonomy (Ginsburg & Orlofsky, 1981), and lower self-esteem (Marcia, 1966; 1967) than do individuals who have an achieved identity. Even the process of coming to define one's identity can be troublesome. Indeed, teens in the moratorium stage who are actively exploring multiple identities are often plagued by feelings of self-doubt and confusion, and may experience intense conflict with parents (Kidwell, Dunham, Bacho, Pastorino, & Portes, 1995).

On the other hand, research has documented a plethora of positive outcomes for individuals who have an achieved identity. Marcia (1966) found that adolescent males who had an achieved identity performed better and persevered more on a stressful task than did males marked by other identity statuses. Other studies indicate that having an achieved identity is related to being cognitively flexible (Marcia, 1991) and engaging in more planned, rational decision making strategies (Bluestein & Phillips, 1990). Empirical evidence also supports that adolescents and adults who have an achieved identity are better able to form intimate relationships than are those marked by other identity statuses (Marcia, 1991).

Although Marcia's identity status theory is a commonly used research paradigm to investigate identity formation (Grotevant, 1987), critics have pointed out that the theory does not explain *how* individuals' identity develops from one status to another (e.g., Van Hoof, 1999a; Van Hoof, 1999b). In light of such criticism, some theorists have used the conceptualizations of Erikson and Marcia as a springboard to argue for an approach that moves beyond descriptive stages/statuses and instead focuses on the processes that propel people to explore and alter their identity (e.g., Grotevant, 1987; Kerpelman & Lamke, 1997).

One such theory, the control theory of identity, posits that individuals use communication and feedback from others as a way to guide their identity exploration (Kerpelman & Lamke, 1997; Kerpelman, Pittman, & Lamke, 1997a, 1997b). Kerpelman and her colleagues argue that individuals constantly integrate interpersonal feedback into their identity. Typically, individuals choose friends and significant others who validate their identity. People also try to behave in a manner that produces feedback that is congruent with their identity. However, if individuals receive interpersonal feedback that conflicts with their identity, they may feel a need to modify their identity altogether.

Empirical research supports the idea that social interaction can shape the identity formation process. For example, Ianni (1989) compared the identity status of teens among various communities in which adults employed different communication styles with teens. In those communities where parents and other significant adult role models expressed consistent expectations and values, teens were more likely to display an achieved identity that was marked by clear personal goals and strong feelings of personal responsibility. In contrast, in communities where adults expressed inconsistent expectations of youth, adolescents were more likely to be confused about their role and have a diffused identity (Ianni, 1989).

In a study that focused on diversity of one's experiences, Kroger (2003) explored the different factors that influence identity formation. She found that exposure to varied environments during the adolescent years often leads to interactions with people who offer new ideas and alternative identities.

Taken together, these studies suggest that interpersonal interaction is crucial to a young person's identity formation. Moreover, adolescent identity can be influenced by the range of teens' social experiences as well as type of communication adolescents encounter within these experiences. In support of these ideas, Waterman (1999) argued that those with an achieved identity "will likely be those whose identity commitments are being socially supported" (p. 608).

To summarize, theories of identity development and the supporting empirical work suggest that adolescence is a time of great exploration about personal identity and that teens often do this "work" in a social context with peers, family, and significant others. That is, teens need a social space that allows for the expression of one's identity and for feedback from peers and friends. In this context, then, social network sites may be serving a useful function for identity formation among young people. It may be that online spaces today are augmenting or even replacing face-to-face interactions as a new social space for identity development.

To date, there are no published studies that have looked at the relationship between SNS use and identity status development in youth. There are, however, three studies that link more general online activity with identity status. In one study, Huang (2006) conducted a cross-sectional survey of Taiwanese adolescents and found that those who spent 10 or more hours per week online chatting or gaming were significantly less likely to have an achieved identity than were those who spent less time online each week. Huang (2006) concluded that adolescents who spend the most time online might be trying to clarify who it is they want to be.

In the second study, Matsuba (2006) surveyed 200 American college students and found that Internet use was positively related to searching to define one's identity. In particular, those students who used the Internet frequently were more likely to be in the moratorium identity status than were other students.

In the third study, Vybiral and colleagues (2004) examined the relationship between online identity presentation and offline identity status among a sample of teens. The researchers found that a majority of the adolescents (59%) agreed that the Internet is a "good place to explore and clarify" who they want to become. The researchers also found that compared to those in other statuses, adolescents in the moratorium status were most likely to use the Internet to explore and clarify their identity.

Collectively, these three studies suggest that online activity may be associated with identity exploration. Yet none of the studies looked at social network site activity in particular. Because such sites are so intimately connected to presentations of the self, it stands to reason that teens who gravitate to online spaces may be grappling with identity issues. Based on this reasoning as well as the research cited above, I propose the following hypothesis:

H_1: Adolescents who are heavy users of SNSs will be in a more advanced status of identity formation (i.e., the moratorium and achieved status) than will those who spend

less time on SNSs.

Sheer amount of time on these sites is one factor to consider. Another factor is what teens are actually doing on these sites. Two adolescents can spend the same amount of time on a social network site, but engage with the website in completely different ways. For example, one teen might actively post status updates, upload photos, and respond to others' postings, while another teen might lurk on the site (i.e., look at others' updates and photos) but never actually engage with the content. Arguably, these teens have very different ways of spending time on the site, one more actively engaged and the other more passively observing.

The active adolescents who update profiles, change photos and statuses, and respond to others' sites are clearly engaged in online interaction. As these teens fill out information about personal opinions, feelings, and preferences, they have the opportunity to think about and explore personal identity. In a sense, these teens are continually identifying and shaping the self in a fairly public space. Furthermore, the social interaction and feedback received by other SNS users may validate the teens' identity, causing them to feel a sense of mastery or enjoyment when someone posts a "like" on a photo or a comment. Alternatively, as proposed by the control theory of identity, incongruent or even negative feedback could challenge adolescents' identity. In a sense, these youth are having multiple conversations with others, often directed to a single individual but always in a space with a wide variety of others observing and able to comment in at any time.

This type of active experience contrasts sharply with that of a lurker. Lurkers watch online activity without ever revealing their presence to others. Does simply reading updates or lurking on an SNS affect the identity formation process of an adolescent user? Although lurking means that users are not contributing content to the site, it does not necessarily mean that users are not involved with the site. Indeed, some scholars have argued that lurking on social network

sites *is* participation on the site (Albrechtslund, 2008). Social network sites even encourage lurking by featuring the updates of one's network on a constantly updating "news feed." Thus, SNS lurkers can easily learn information about their peers and social contacts. Yet teens who spend a lot of time lurking are not engaging in any personal identity play on the SNS. Furthermore, by remaining anonymous to others on the site, lurkers are not communicating with other users and hence not receiving any feedback from other users.

Given the dramatic differences in the amount of identity exploration work between these two types of uses, it follows that the identity formation process will be different as well. According to this reasoning, I propose the following hypothesis:

> H_2: Adolescents who actively participate on SNSs will be in a more advanced status of identity exploration (i.e., moratorium and achieved identity status) than will adolescents who lurk on SNSs.

Even among active users, however, there may be crucial differences. For instance, some teens seem to focus their activity on updating the profile and posting statuses about their selves. Other teens prefer to spend their time engaging in the interpersonal communication that the sites afford. These different methods of Facebook use may impact the identity development of teens. It is with this reasoning in mind that I pose the following research question:

> RQ_1: Is there a relationship between engaging in particular social network site activities and the adolescent identity status?

Clearly, adolescents' social lives do not occur solely on social network sites. Regardless of their use of such technologies, many adolescents still spend a great deal of time in face-to-face (FtF) social situations (Rideout, 2009). And many teens use social network sites while they are in the same room with their friends! To capture this complex social world, teens can be classified along two dimensions in terms of their behaviors: time spent in FtF communication

and time spent in SNS communication (see Table 1). This type of conceptualization creates four possible categories of adolescent socializing. For example, a teen who is low in both FtF and SNS communication may be shy or introverted, and rarely uses interactive technology. Such a teen might be thought of as "asocial." A teen who is low on SNS use but high on FtF communication is an adolescent who is a "social butterfly" and as such may not have time to spend on a computer because of heavy commitment to afterschool clubs, sports, or a church group. Either way, this teen has an active face-to-face social life, but it does not revolve around SNS activity.

A teen who is high on SNS communication but low on FtF interaction is one who spends more time engaging with people via computer technology than in real-world interactions. Such an adolescent may spend time with a variety of peers, acquaintances, or even strangers on SNSs. This type of teenager is constantly "plugged in" to SNS technology. Finally, a teen who is high in both FtF and SNS communication is one who has a diverse and active social life. This teen spends a great deal of time doing things with friends but also stays connected with others online. This "hypersocial" adolescent is getting a double dose of social interaction.

To date, there is no research that compares the impact of online versus face-to-face interaction on adolescent identity development. An obvious question for this dissertation is whether the identity status differs among adolescents who primarily socialize in face-to-face situations versus those who primarily socialize on SNS. There is no doubt that individuals who engage in FtF interactions experience rich non-verbal and emotive cues during communication. These cues may help young people to better understand their face-to-face interactions. However, research also shows that people create meaning out of the cues available during computer-mediated communication (Walther, 1996). For example, teens can use emoticons and italics to express anger, sarcasm, and other emotions.

Regardless of the richness of the interaction, many studies have supported the notion that our social interactions are fundamentally different online than offline (e.g., Joinson, 2007; Lea, O'Shea, Fung, & Spears, 1992; Tidwell & Walther, 2002). Consequently, hypersocial teens are navigating two different types of social worlds, as well as experiencing a greater number of total interactions compared to their less social peers. The ability for a hypersocial teen to move seamlessly between mediated and FtF interactions could signal a more developed adolescent who can manage a wide variety of people and a wide variety of feedback. Presumably, this round-the-clock social world pushes the opportunities for self-exploration. Consistent with this reasoning, I pose the following hypothesis:

> H_3: Adolescents who experience the most social interaction, who are high in either FtF and SNS communication, or both, will have a more advanced (i.e., achieved or moratorium) identity status than will those who experience less frequent social interaction.

Another element that seems crucial to identity formation is the audience for such online and face-to-face interactions. Teens often prefer to communicate mostly with their friends and peers, but they also spend a great deal of time interacting with parents and other family members (Grusec & Hastings, 2007). Erikson (1968) stressed the importance of the adolescent-parent relationship when he argued that adolescent rejection of parents, or parental rejection of adolescents, can hinder positive identity development among teens.

Recent empirical work has more directly linked parent-teen communication with adolescent identity development. For instance, one national study of adolescents 12- to 18-years-old found that the frequency of family dinners was positively related to adolescent development (Fulkerson, et al., 2006). Specifically, the researchers found that adolescent youth who frequently ate dinner with their parents (5-7 nights a week) had twice the odds of reporting

high self-esteem, feeling a sense of purpose, and possessing a positive view of the future compared to adolescents who reported eating few (0-1 times a week) family dinner meals together (Fulkerson et al., 2006). The researchers speculated that family dinners foster communication between teens and their parents.

Beyond the sheer frequency of communication, the nature of the interactions between adolescents and parents seem pivotal. One line of research by Grotevant and colleagues supports this idea (Cooper et al., 1983; Grotevant & Cooper, 1985, 1986). In a series of studies, the researchers asked families to engage in the Family Interaction Task, which involves planning a fictional family vacation. This task is designed to elicit the coordination of the different viewpoints of each participating family member. Based on extensive coding of the audiotaped interactions, the researchers found two patterns of communication that were related to the identity development of teenagers: *individuality* and *connectedness* (Cooper et al., 1983). Individuality refers to communication in which people discuss the distinctiveness of the self by asserting opinions and viewpoints (Grotevant & Cooper, 1998). Connectedness involves supportive communication, in which a person expresses responsiveness and sensitivity to others' viewpoints (Grotevant & Cooper, 1998). Interestingly, adolescents who scored the highest on identity exploration came from families that emphasized individuality and connectedness in their conversations (Cooper et al., 1983; Grotevant & Cooper, 1985, 1986, 1998).

Parental communication that is open and dynamic also seems to matter. Bhushan and Shirali (1992) had a sample of 411 late adolescent males fill out the parent-adolescent communication scale (PACS) and also fill out a measure of identity development. The PACS assesses the degree of openness in parent-adolescent communication and the extent of problems in parent-adolescent communication. Open parent-adolescent communication (PAC) is characterized by the unconstrained flow and exchange of thoughts, ideas, and emotions (Barnes

& Olson, 1985). Items include, “My mother/father tries to understand my point of view,” and “It is easy for me to express all my true feelings to my mother/father.” Problem communication is defined by negative styles of interaction, including a hesitancy to share and a selectivity in what is shared within the family (Barnes & Olson, 1985). Items include, “I don’t think I can tell my mother/father how I really feel about some things,” and “When we have a problem, I often give my mother/father the silent treatment.” Bhushan and Shirali (1992) found that adolescents who scored high on the Identity Achievement Scale also had the highest PAC scores (more open and problem-free communication), whereas those adolescents who scored low on the Identity Achievement scale had the lowest PACS scores. Bhushan and Shirali (1992) concluded that parents that engage in open, supportive, and clear communication, while refraining from problematic interaction patterns, create a balanced environment for adolescents to explore who they are.

Taken together, the theoretical and empirical work reviewed above shows a link between parental communication and adolescent identity formation. In general, it appears that supportive and positive communication from parents can enhance a teen’s exploration of identity. As Campbell, Adams, and Dobson (1984) argue, a supportive environment presumably fosters a sense of security for a teen that could help encourage the exploration of personal identity.

Given the importance of parental communication, how might this type of interaction influence the proposed relationship between teen SNS use and identity formation? One possibility is that the positive relationship between SNS use and identity exploration will be stronger for adolescents with high PAC. Parents who create a positive and supportive environment offline may see the benefits of allowing their teens to form positive and supportive environments online. That is to say, these parents may understand why their teens use social network sites frequently and may not limit their teens’ time on these sites. Supportive parent-

adolescent communication in general, and about SNS use, may enhance the positive relationship between teen SNS use and identity development.

Alternatively, parental communication may be so supportive and helpful that it detracts from adolescents' need to use SNS to explore their identities. In this situation, teens could be working out identity issues primarily through parent-adolescent communication. Consequently, such teens may have less incentive to use online means to explore their identities. Thus, positive parent-adolescent communication may weaken the proposed positive relationship between teen SNS use and identity development.

Given the divergent alternatives for how parental communication might modify the relationship between SNS use and adolescent identity exploration, I pose the following research question:

RQ_2: Does parent-adolescent communication modify the relationship between SNS use and identity exploration (i.e., moratorium status and identity achieved status)?

As young people come to understand their identity, with or without the influence of social network sites, one of the key questions they must ask is "Who am I?" The answer to this question relies on the content of the self, or the self-concept. I now turn to a discussion of the self-concept.

The Self-Concept

William James (1890) offered one of the first psychological treatments of the self-concept. In his early writings, James distinguished between the "I-self" on the one hand and the "me-self" on the other. James viewed the I-self as subjective in nature because it organizes and interprets one's experiences. That is to say, the I-self is the experience of self as an independent person with a unique perspective. In contrast, the me-self is the "empirical aggregate of things objectively known [about the self]" (James, 1890, p. 197). It reflects the categories by which one

defines the self (Lewis & Brooks-Gunn, 1979). According to James, the I-self is responsible for creating the me-self. However, because the me-self consists of cognitions about the self and is more easily defined, accessed, and shared, it has received greater attention by scholars than has the more private and subjective I-self. Most scholars today recognize the me-self as the earliest conception of the self-concept (e.g., Damon & Hart, 1988; Harter, 2006).

Contemporary theorists have since developed several different approaches to the conceptualization of the self-concept. For example, Rosenberg (1965) defines the self-concept quite simply as the sum total of our thoughts, feelings, and imaginations concerning who we are. Shavelson, Hubner, and Stanton (1976) posit that the self-concept represents an individual's perceptions of the self as derived from attributes, interaction with significant others, and experiential aspects of the environment. In contrast, Markus and Wurf (1987) offer a broader definition of the self-concept, specifying it as a multidimensional and interpretive construct that mediates important intrapersonal processes, such as motivation, as well as interpersonal processes, such as reactions to feedback from significant others.

Some scholars have included an evaluative component to the self-concept. For example, Kernis and Goldman (2003) argue that the content of the self-concept "may be purely descriptive in nature or it may have evaluative aspects" (p. 107). Similarly, Stets and Burke (2003) define the self-concept as being based on our evaluations of ourselves as well as our inferences about who we are, and what our wishes and desires are. Harter (1999, 2006) goes even further and has used self-concept to refer mainly to evaluative judgments of the self.

For the purposes of this dissertation, I will define the self-concept as an individual's perceptions of the self. More specifically, self-concept refers to a psychological construct that develops over time, and that pertains to an individual's self-attributes, psychological states, and relational roles. It may or may not contain evaluations of these attributes, states, and roles; the

inclusion of evaluative content may be dependent upon maturation (Harter, 2006), which I will discuss in the next section.

The Development of the Self-Concept from Infancy through Adolescence

Humans are not born with an inherent sense of who they are. Newborns have almost no sense of personal identity and yet over time humans develop a multifaceted, integrated, and abstract sense of self. What causes these profound changes? The development of the self-concept is fueled by cognitive and social changes throughout one's life (Harter, 1999, 2006). In this section, I review how a person's self-concept develops from infancy through adolescence.

Infancy. One of the first steps necessary in establishing a self-concept is becoming aware that one is separate from others. This awareness does not occur until roughly 18 months of age, when babies first recognize themselves in a mirror and, thus begin to discriminate the self from others (Bertenthal & Fischer, 1978). The acquisition of language also plays a role in the development of the self-concept. For example, learning one's name is an important step in the development of the self (Michener, DeLamater, & Schwartz, 1986). Also, learning one's gender and age, which both occur during the toddler years, is part of this growing self-awareness (Thompson, 1975). As toddlers mature, their newly developed self-awareness coupled with developing language skills help to expand their budding knowledge of their self.

Early childhood. As children enter the preschool years, they begin to define the self in concrete and perceptual ways. For example, preschoolers typically describe themselves through observable features, such as hair color and family role (Harter, 1999, 2006). Indeed preschoolers' self-concepts are so wedded to the tangible that when asked to describe their self, they will frequently physically display their qualities, such as lifting a chair while exclaiming that they are strong (Harter, 1999).

The information these young children hold in their self-concept is typically organized into main categories or domains. In general, children of this age describe themselves in domains that are physical (e.g., “I have brown eyes”), active (e.g., “I play basketball”), social (e.g., “I have a baby sister”), and affective (e.g., “I am happy”) (Damon & Hart, 1988).

The domains of the early child’s self-concept tend to be highly isolated from one another (Harter, 1999). Very young children do not have the working memory capacity to hold several ideas simultaneously. In fact, they tend to think in “single representations” (Fischer, 1980). At this age, young children do not have the ability to integrate single representations into a coherent self-concept, so that they typically possess very compartmentalized views of themselves (Harter, 1999).

Middle to late childhood. During middle to late childhood (8- to 11-years-old), the content of the self-concept becomes less concrete and more conceptual. For example, children at this age tend to describe themselves using terms such as “smart,” “kind,” or “helpful.” Aboud and Skerry (1983) found that by second grade, children frequently listed psychological characteristics (e.g., preferences, personality traits) as being essential parts of their self, whereas younger children mainly listed physical characteristics (e.g., hair color, height) as essential.

Older children’s use of psychological features is indicative of their growing need to distinguish themselves from others (McGuire & McGuire, 1981). Furthermore, as the self-concept becomes more conceptual, older children have a tendency to use interpersonal terminology when they describe themselves. Use of such terms reflects the increasing importance of social roles in older children’s lives (Damon & Hart, 1988; Harter, 1999). The importance of the social environment, coupled with children’s need to individuate themselves, can lead older children to engage in social comparisons. Engaging in social comparisons can trigger the use of competence assessments when describing the self-concept (Ruble, 1983). For

example, an older child might describe himself in the following way: "I play basketball better than my brother." In contrast, his younger sibling might simply state, "I like to play basketball."

In addition to having a more conceptual understanding of the self, older children increasingly think of themselves in multilayered, hierarchical ways (J. A. Hattie, 1992). That is, older children begin to link different domains of the self-concept together to form categories or representational sets, and eventually higher-order generalizations (Harter, 1999). For example, a 10-year-old may conclude that she is "a good student" because she does her homework, gets good grades, and gets along with classmates. She is able to see multiple traits as part of her overall self-concept of "good student." The growing ability to link information together and draw inferences is part of what makes this hierarchical self-concept possible (Ackerman, 1988).

Early adolescence. When children move into early adolescence (12- to 14-years old), they undergo dramatic changes that influence the development of their self-concept. Most importantly, early adolescents start to think in abstract ways. Early adolescents begin to describe their self-concepts with single abstractions because they can integrate smaller-order traits together (Fischer, 1980). For example, a 13-year-old boy may observe that he is smart, curious, and creative and coordinate these traits to describe himself as intelligent.

Despite this growing abstraction, the early adolescent self-concept is marked by a fragmented and vacillating sense of self that varies according to context. For example, Harter (2006) described one survey participant who explained herself as being an extrovert among her friends, but depressed with her family. Early adolescents have difficulty cognitively coordinating and integrating their self-concept, and consequently are unable to compare seemingly contradictory qualities within themselves (Fischer, 1980). Furthermore, young teens do not appear to be troubled by such discrepancies in the self-concept (Harter, Bresnick, Bouchey, & Whitsell, 1997; Harter & Monsour, 1992). When asked about conflicting senses of

the self, one young adolescent exclaimed, “I don’t fight with myself!” (Harter, 2006, p. 533).

The inability to coordinate multiple views of the self may be due in part to the early adolescent’s rapidly expanding yet often disconnected social world (Harter, 2006). Indeed, early adolescents may be treated as mature and adult-like in certain social situations but still as children at home or at school (Alsaker, 1995). Such inconsistent treatment not only makes it difficult to develop a coherent sense of self, but it also makes early adolescents aware of others’ varying opinions of the self. A growing concern with how others view the self in early adolescence lays the groundwork for the uncertainty that is characteristic of middle adolescence.

Middle adolescence. The content of the self-concept during middle adolescence (15- to 17-years-old) is marked by finer and finer discriminations across different roles. Youth of this age will describe themselves as possessing different traits within different relationships. For example, one 16-year-old female survey participant described herself as being different with her mother versus her father, different with one friend compared to a group of friends, and different with same-sex peers versus opposite-sex peers (Harter, 2006).

Studies show that as teens recognize these different selves, they often experience frustration and inner turmoil (e.g., Harter & Monsour, 1992). James (1890) aptly called this turmoil the “conflict of the different Me’s.” Studies by Harter and her colleagues (e.g., Harter et al., 1997; Harter & Monsour, 1992) have shown that mid-adolescents are regularly able to identify opposing traits both *within* the same role (e.g., being rowdy at one point and withdrawn in another point, among a group of best friends) and *across* roles (e.g., being tense with father and relaxed with mother). As it turns out, teens are more bothered by the contradictions *across* roles than within them (Harter & Monsour, 1992). Research also suggests that females are more upset by conflicting self-concepts than males are (see Harter, 2006). Harter (2006) has speculated that because relationships are more important to girls than to boys, experiencing

inconsistency across valued relationship domains is more troublesome for girls.

As middle adolescents encounter more independence and activities outside the home, peers become increasingly important to the development of a sense of self (Harter 1999, 2006). During this time, having close friendships can influence the development of the self (Kroger, 2007). For example, Akers, Jones and Coyl (1998) found that the self-concept of best friend dyads developed at the same pace, and the friends also shared many of the same goals, attitudes, and behaviors. Although close friendships may assist youth of this age, Akers, Jones and Coyl (1998) argue that expanding social circles often can lead to distress over which attributes and standards to internalize from which models. Other scholars point out that youth may not want to be like their best friends, and in fact can be overwhelmed as they attempt to distinguish the self alongside their peers (Baumeister & Muraven, 1996).

In an effort to feel like a unique person, mid-adolescents often become morbidly preoccupied with others' opinions of the self (Erikson, 1968). In fact, adolescents falsely assume that others are just as interested in their behavior and appearance as they themselves are. Elkind (1967) called this form of adolescent egocentrism the "imagined audience" because teens typically perceive that everyone is watching them. Unfortunately, particularly for females, this obsessive preoccupation with what others think of the self can lead to pathological behaviors such as eating disorders and depression (Harter, 1999). Fortunately, the imagined audience is a phase of middle adolescence and becomes less prominent as teens mature (Harter, 1999).

Late adolescence. During late adolescence (18- to 22-years-old), the conflicting abstractions of the mid-adolescent self typically become coordinated and, therefore, no longer cause stress. Older teens develop the ability to interpret opposing qualities such as being introverted *and* extraverted as being "adaptive" or "flexible." Being able to mentally organize contradictory qualities gives older adolescents a sense of authenticity about their self (Harter,

1999). It stands to reason that if individuals can conceptualize the self-concept in a way that allows opposite qualities to co-exist, they may feel like they have reached a true and earnest understanding of who they are. Once older adolescents feel relaxed about their true self, they may begin to aspire to their future or possible selves (Markus & Nurius, 1986), which typically focus on vocation (Kroger, 1986).

The integration of conflicting abstractions is not possible without the influence of others. Older adolescents need guidance from others to realize that having contradictory traits is normal (Fischer, 1980). Although youth of this age use relationships as a measuring stick against which they evaluate their own selves, youth become less dependent upon their relationships with parents. That is, older adolescents begin a second separation from parents during which they grow even more autonomous and begin to take responsibility for issues in their lives, on their own terms (Blos, 1967). Moreover, as late adolescents become more independent from parents, they become involved in more intimate relationships with romantic partners and peers. Once the focus of the self turns toward the future and toward intimate relationships, older teens begin to move to the adult life stages (Erikson, 1968; Harter, 2006).

To summarize, from infancy through adolescence, a young person undergoes a series of cognitive and social changes that influence the formation of the self-concept. The development of the self-concept begins during infancy when an individual can recognize the self as separate from caregivers and significant others. During the early years of childhood, the self-concept is defined in perceptual ways that are highly compartmentalized. During middle childhood, the self-concept becomes less compartmentalized and moves toward a hierarchical concept that incorporates many traits. By adolescence, the self-concept undergoes a dramatic shift such that individuals increasingly are able to see the self in abstract and eventually congruent ways, as a whole entity that incorporates many traits across many different social contexts. This substantial

transformation in the self-concept has been linked to two constructs: self-complexity and self-concept clarity, which will be discussed next.

Self-Complexity and Self-Concept Clarity

The literature on self-concept demonstrates that adult perceptions of the self vary in at least two crucial ways (Campbell et al., 1996; Linville, 1985). First, people differ in how rich and layered their self-concepts are. This idea is referred to as "self-complexity." Second, people differ in how coherent and logical their self-concepts are. This aspect of the self is referred to as "self-concept clarity." Although these two concepts have not been applied much to adolescent development, they seem pertinent to issues raised in this dissertation. Indeed, as teens grapple with who they are, their self-concepts seem to become more abstract and also more internally consistent. Exploring these concepts in more detail may shed light on adolescent identity development as it relates to social networking.

Self-complexity refers to how rich, diversified, and multifaceted the self-concept is. Harrison (2006) conceptualized self-complexity as the scope of a person's self, focusing on the various ways that people define their self. In a similar vein, Donahue et al. (1993) argue that self-complexity refers to the number of distinct elements that people generate when providing descriptions of their self, implying a level of flexibility in the way people construe themselves. In the most frequently cited conceptualization, Linville (1985) defined self-complexity as the number of aspects used in thinking about the self. Accordingly, a person who has many differing facets of the self, or domains, is high in self-complexity.

In general, self-complexity is thought to develop as one experiences varied roles, relationships, and situations (Rafaeli & Hiller, 2010). Several studies corroborate this idea, showing that by the time individuals reach the teen years, they typically have many domains in the self-concept, including social relationships, conduct/morality, and physical attractiveness

(Bracken & Howell, 1991; Harter, 1999; Hattie & Marsh, 1996).

Several cross-sectional studies have looked at self-complexity more directly as it relates to age. For example, one study compared 158 Canadian children who were either 8- or 12 years of age, and found that the older children exhibited higher self-complexity than did the younger children (Abela & Veronneau-McArdle, 2002). Interestingly, the girls in this study demonstrated higher self-complexity than the boys did. In another study solely of adolescents, Harrison (2006) assessed the self-complexity of 309 teens in 6th, 9th, and 12th grade. She found that grade was a significant and positive predictor of self-complexity. In a similar study, self-complexity was found to be positively related to age among 182 adolescents ranging in age from 11- to 18-years-old (Evans, 1994).

A longitudinal study that tracked the same group of young people over time also supports the idea that self-complexity increases during adolescence (Hauser, Jacobson, Noam, & Powers, 1983). In this study, the self-complexity of 194 high school students was assessed over a four-year period. Participants also were classified as either having "normal" development (n=124) or "deviant" development (n=70), defined as being under psychiatric care. After controlling for sex and SES, the normally developing high school students had significantly greater increases in self-complexity over time compared to the deviant students. The results of this study suggest that normative adolescent development should be marked by increases in self-complexity.

As it turns out, increased self-complexity is linked with healthy well-being. Studies show that adults with more dimensions to their self-concept (i.e., more complexity) are able to cope better in the event of a negative experience than are individuals with fewer domains (Evans, 1994; Evans & Seaman, 2001; Koch & Shepperd, 2004; Linville, 1985; Linville, 1987; Lutz & Ross, 2003). It stands to reason that if one domain of the self is somehow threatened, having other domains from which to judge the self makes an individual less vulnerable to stress

(Linville, 1987). Adults low in self-complexity have been found to experience more loneliness and dissociative tendencies compared to those with high self-complexity (Lutz & Ross, 2003).

Similar studies have shown that teenagers higher in self-complexity have higher levels of global self-worth compared to teens with lower self-complexity (Evans, 1994; Evans & Seaman, 2001). Longitudinal work has also found that children with low self-complexity were more likely to suffer from depressive symptoms 10 weeks later, compared with children with higher self-complexity (Abela & Veronneau-McArdle, 2002).

Although it appears that high-self complexity has benefits, can one's sense of self become too complex? One study indicates that there may be a limit to how complex one's self-concept should be (Lutz & Ross, 2003). In the study, the domains of the self-concepts of 260 college students were measured. The researchers found that participants whose self-concepts were overly differentiated and fragmented were likely to suffer from psychological maladjustment, including depression and dissociative tendencies (Lutz & Ross, 2003). The results of this study suggest that having too many ways to define the self may be maladaptive, particularly if the many domains used to describe the self are not unified and consistent.

Unlike self-complexity, which focuses on the richness and diversity of the content of the self, self-concept *clarity* refers to how clear and unambiguous the self-concept is. Campbell and colleagues (1996) defined self-concept clarity as "the extent to which the contents of an individual's self-concept are clearly and confidently defined, internally consistent and stable." Moreover, self-concept clarity is stable across situations and different environments. Individuals who are high in self-concept clarity have a clear sense of who and what they are and, therefore, perceive themselves as steady and dependable entities (Campbell, et al., 1996).

One study suggests that self-concept clarity is positively related to age. Campbell and colleagues (1996) found that self-concept clarity was correlated with age across three separate

samples of college students. The authors propose this relationship is consistent with an expected developmental trend. However, because of limited age variability within the sample, a robust test of this relationship was not possible. It makes sense that self-concept clarity would increase as adolescents gain the cognitive capacity to think abstractly about the contradictory information about the self (Harter et al., 1997). By thinking abstractly, adolescents can "coordinate, resolve, and normalize seemingly contradictory attributes" (Harter & Monsour, 1992, p. 251). It stands to reason, then, that adolescents would experience a reduction in tension as they experience less conflict within their self-concept. That is to say, as adolescents begin to integrate their multiple selves into one self-concept, they are, in a sense, increasing the clarity and unity of the self-concept.

As with self-complexity, self-concept clarity has been linked to health and wellness. Studies indicate, for example, that individuals with higher levels of clarity generally have higher self-esteem (Campbell, 1990; Campbell, Chew, & Scratchley, 1991; Campbell et al., 1996). Moreover, individuals with low self-clarity have been found to possess more psychological uncertainty, instability, and inconsistency. Lastly, low self-concept clarity has been shown to correlate with neuroticism and chronic self-analysis (Campbell et al., 1996).

Overall, this research indicates that healthy and normative adolescent development will be accompanied by increases in both self-complexity and self-concept clarity. I now turn to a discussion of how the use of social networking sites may influence the development of the adolescent self-concept.

The Impact of SNS on Adolescents' Self-Concept

Social network site use is so closely reliant upon the presentation of the self that it makes sense that such online activity would be related to self-concept development. In this section of the paper, I explore how different facets of SNS use may influence the development of teens'

conception of the self. Specifically, I focus on how sheer amount of time spent on the sites, specific activities engaged in on the sites, and social connections made on the sites may influence both self-concept clarity and self-complexity. From this point forward, I will describe the development of the self-concept as entailing combined changes in self-concept clarity and self-complexity.

The mere act of creating a SNS profile means that an individual has to define the self in various ways. The typical user answers questions about favorite hobbies, books, movies, and relationships, and posts pictures of the self. The process of creating this profile may help teens to better understand the nature of the self. It is also possible that spending time on SNSs can encourage development of relationships and the roles played within those relationships. Consistent with this idea, Kernis and Goldman (2003) speculated that, "information accessed via technologies can serve to broaden the self-concept by exposing people to diverse self-knowledge information and providing validation for the self-concept" (p. 112).

Presumably, the more time teens spend on their site, the more this sense of self is understood and substantiated. Nevertheless, some studies suggest that there actually is a negative relationship between Internet use and self-concept clarity. For example, one study of 200 Canadian college students found that as time spent with the internet increased, self-concept clarity decreased (Matsuba, 2006). The authors posited that individuals who spend a great deal of time online actually may be searching for clarity about their self-concept. Another study found comparable results among a sample of Dutch adolescents. Specifically, Valkenburg and Peter (2008) found a negative relationship between self-concept clarity and the propensity of teens to experiment online with their identity. In each of these studies, however, the authors did not specifically measure time spent on social network sites. It could be that time spent with SNSs is also negatively related to self-concept clarity. However, it could also be that SNS

profiles encourage a more sophisticated, unified self-presentation compared to general Internet use. Consequently, self-concept clarity may be positively related to time spent on SNSs. Given the lack of research in this area and the possibility that time spent with SNSs could either enhance self-concept development or reflect a more scattered self-concept, I pose the following question:

> RQ_3: Is there a relationship between the amount of time spent on social network sites and adolescent self-concept development?

Rather than the sheer amount of time spent on SNS, it may be more critical to look at what adolescents are doing on social network sites. Given the plethora of things to do on social network sites, I will define a specific set of SNS behaviors as "self-focused activity." Self-focused activity (SFA) involves revealing information about one's identity on a social network site. The core of self-focused activity occurs as users share information about who they are with their online social network. For instance, individuals can update profile information, create status updates about their activities or feelings, or upload photos and videos. When developing a personal profile, a person must intentionally decide what information, photos, and links to share with their online network. According to sociologist Erving Goffman (1959), much of social interaction involves people working strategically to manage the impression that others will have of them. During this process, self-presentation refers to the idea that people carefully and consciously select and control what personal information to reveal to others in an effort to be convincing (Goffman, 1959).

SNS profiles provide the architecture for digital self-presentation. That is, the profile provides many opportunities for users to fill out information about their interests and activities, preferences in music and television, political and religious affiliation, and sexuality. Arguably, each time adolescents manage the information on their SNS profile, they are making decisions

and executing "a carefully controlled performance through which self-presentation is achieved" (Papacharissi, 2002, p. 644). Every time an update is made to the profile, a notification is displayed to that users' network. Seemingly, each update is a conscious statement of the self, as if the user is proclaiming who they are to their network of friends. Consequently, this process of fine-tuning SNS profiles involves a continual solidification and synthesis of self-presentation, potentially enhancing the development of the self-concept.

Not only might self-focused activity influence the refining process of self-concept development, SFA may also influence how teens see themselves fitting into different roles. When adolescents talk about themselves in FtF situations, the conversation is transient and there is no permanent record of the declarations. In contrast, defining the self in social media has a quality of permanence to it (boyd, 2011). If a teen frequently updates her status about her moods, thoughts, relationships, and daily activities, she has the opportunity to actually see in a concrete and recorded way how many components are a part of her self-concept. Indeed, if she is a part of many activities and social roles, talking about herself on SNSs may encourage development of a more multi-faceted and even coordinated self-concept. With these possibilities in mind, I pose the following question:

> H_4: There will be a positive relationship between engaging in self-focused activity and self-concept development.

The typical American Facebook user has accumulated an average of 338 "friends" in their online social network (Smith, 2014). This number far exceeds the typical 10 to 20 close relationships that people sustain offline (Parks, 2007). The friends one has online tend to be an amalgamation of one's entire social world (boyd, 2011). Moreover, as teens opt to "friend" their parents, siblings, teachers, coaches, and other adults from school, church, and sports, they are met with the unprecedented challenge of presenting their self to varying audiences of different

ages and backgrounds in the same space.

Arguably, part of the frustration of being an adolescent is linked to the difficulty of managing multiple selves (Harter & Monsour, 1992). Communicating in face-to-face interactions gives teens some ability to navigate, and keep separate, these differentiated selves. For example, an adolescent may act and talk differently based on who is in the immediate audience. However, an SNS profile creates a space in which the differentiated selves are no longer separated by space and time; all audience members can view the presentation of the self on an SNS profile at any time. It may be that the public nature of these profiles encourages adolescents to integrate their multiple selves on one profile page. Furthermore, the diversity of an adolescent's online network may enhance this need to articulate a coherent self-concept. For example, the more varied a teen's SNS friend network is, the more pressure the teen may feel to articulate a stable and reliable self to all the different online friends who can access this information.

Accumulating SNS friends from different social circles also gives adolescents a chance to see how they fit into various social roles. The sites allow adolescents to view a digital representation of each of these friendships, and roles played within those friendships. Furthermore, adolescents may be constantly reminded of each of these roles as friends from different social groups appear in the news feed of the SNS. If adolescents have a variety of SNS friends, being able to see those friendships and the roles played within these friendships may encourage the development of the adolescent self-concept. However, if an adolescent does not have a wide variety of friends, or only focuses on one particular social circle (e.g., band friends), the self-concept development may not be enhanced.

Based on the ideas that the diversity within a teens' social networks may encourage them to synthesize and tighten their self-concept, or encourage them to see their selves as fulfilling

multiple roles, I pose the following hypothesis:

H_5: There will be a positive relationship between the diversity of an adolescent's online social network and adolescent self-concept development.

Another feature of SNS is that friends can interact directly on the site with other users. Such interaction may also influence self-concept development. As previously stated, the most popular form of communication on SNS among teens is commenting on other people's profiles and posts (Lenhart et al., 2009). Receiving a comment from a friend on one's SNS page arguably is a form of social feedback. Given the popularity of leaving comments, it is likely that many adolescents receive this kind of social feedback. Many theorists have posited that the feedback we receive from others is continually integrated into our self-concept (Cooley, 1902; Goffman, 1959; Harter, 1999; Kerpelman & Lamke, 1997). For example, Harter (1999) argued that teens will adopt the opinions that they think others have of their self (Harter, 1999). Similarly, Cooley (1902) contended that the self becomes in part what we perceive others think of us. Cooley (1902) appropriately labeled this idea as the "looking glass self," referring to our use of others as a social mirror.

The symbolic interactionists have theorized that the development of one's self specifically relies on social interaction (e.g., Cooley, 1902; Goffman, 1959). Such theorists assume that an individual's self-concept does not occur in a vacuum. For example, Goffman argued that people's sense of self is the "*product* of a scene and is not a *cause* of it" (Goffman, 1959, p. 253). In other words, Goffman believed that the self is shaped by the people in our environment and specifically by our interactions with those people.

According to this reasoning, it is quite plausible that receiving feedback on SNSs affects the adolescent self-concept. The sheer amount of feedback may be important when coming to terms with a developing self-concept. That is to say, the more frequently people leave evaluative

comments about teens on their SNS pages, the more opportunities teens have to develop their sense of self according to the perceptions of others. It appears that feedback about the self can strengthen and reify one's identity, particularly if the feedback is positive in nature (Kerpelman et al., 1997). It is with this rationale that I pose the following questions:

H_6: There will be a positive relationship between the amount of feedback on SNSs and adolescent self-concept development.

Evaluation of the Self-Concept: Self-Esteem

Up to now, I have focused on the content and the organization of the self-concept. Yet people also have an evaluative aspect of the sense of self, which is often referred to as self-esteem. Harter (1999) defines self-esteem as an "overall evaluation of one's worth or value as a person" (p. 5). Self-esteem also has been defined as an "individual's positive or negative attitude toward the self as a totality" (Rosenberg, Schooler, Schoenback, & Rosenberg, 1995, p. 141). Both of these definitions indicate that self-esteem refers to how satisfied, valuable, and important a person feels about the self (Rosenberg, 1965).

Clearly, self-esteem and self-concept are related. In fact, self-esteem is derived from the evaluation of the self-concept (Gergen, 1971). At first glance, the distinction between these concepts may be confusing because according to Harter (2006), the self-concept too can contain evaluative components. However, the evaluations within the self-concept are tightly focused and confined to specific domains of the self. For example, a teen might state, "I am a good tennis player." Self-esteem, on the other hand, functions as a broader evaluation of self worth and is not tied specifically to a particular domain. For instance, a teen with high self-esteem would strongly agree with the following statement: "On the whole, I am satisfied with myself."

As a construct, self-esteem is closely linked to overall psychological well-being (Rosenberg et al., 1995). For example, adolescents with high self-esteem are happier and are

more likely to maintain positive peer relationships than are teens with low self-esteem (Tarrant, MacKenzie, & Hewitt, 2006). In contrast, adolescents with low self-esteem often show maladaptive patterns of behavior such as drug use (Andrews & Duncan, 1997), depression (Lewinshon, Gotlib, & Seeley, 1997), and, at least among girls, eating disorders (Crowther & Chemyk, 1986).

Nurturing environments and supportive relationships can fuel positive self-esteem among teens (Dusek & McIntyre, 2006). Adolescents' self-esteem is particularly reactive to relationships with parents and peers and the feedback received by these significant others (Erikson, 1968; Kroger, 2004). Indeed, maternal and peer support are positively related to an adolescent's self-esteem (Hoffman, Ushpiz, & Levy-Shiff, 1988). Other significant people in teens' lives, such as teachers, have the potential to impact adolescent self-esteem. One study found that teens who perceive high levels of unconditional acceptance from teachers and parents have greater self-esteem than do those who feel such acceptance is conditional (Makri-Botsari, 2001).

Because feedback from others is crucial during adolescence, it is logical that social network sites may be pivotal social arenas that contribute to the self-esteem of users. As previously discussed, SNSs are digital spaces where adolescents often receive praise and feedback from significant others. In fact, research shows that teens are using SNS mainly for communicative purposes with their closest friends (Lenhart & Madden, 2007). Consequently, it may be that the sheer amount of time spent on social Internet applications such as SNS leads to increased self-esteem. In support of this idea, one cross-sectional study has found that using the Internet for communicative and interpersonal reasons, as opposed to information-seeking reasons, is related to higher self-esteem among teens (Rohall, Cotton, & Morgan, 2002). Such a boost in self-esteem may come from receiving positive feedback from their online friends. One

recent national study of teenagers found that a majority (69%) of social media-using teens are mostly kind to one another (Lenhart et al., 2011). Moreover, nearly two-thirds (65%) of the teens who use social media reported having an SNS experience that made them feel good about themselves. Interestingly the teens who reportedly visit SNSs daily were more likely to report such an experience compared to teens who visited the sites less often.

Unfortunately the study by Lenhart and her colleagues (2011) also highlights that some teens are victims of cyberbullying. Among the social-media using teens in the study, 88% said they have witnessed other people being mean or cruel on SNSs. About 15% of the teen social media users reported experiencing such harassment themselves sometime within a year of the study. In fact, one clinical report posits that spending too much time with social media may lead to a depressed mood and other signs of depression (O'Keeffe & Clarke, 2011).

Given this inconclusive and conflicting research, I pose the following question:

RQ_4: Is there a relationship between time spent on SNS and self-esteem?

Yet the relationship between Internet use and self-esteem may be more nuanced. A recent survey of 900 teens by Valkenburg and Peter (2007) suggests that the kind of feedback one receives is pivotal. The researchers found that receiving positive feedback on friend networking websites (SNS) was related to higher social self-esteem (Valkenburg & Peter, 2007). Conversely, receiving negative feedback was related to a lower social self-esteem. Interestingly, the sheer number of friends an adolescent had on the site was not related to self-esteem. The researchers argued that the quality of the relationships may be a better predictor of self-esteem than the absolute number of friendships.

Valkenburg and Peter (2007) pinpointed that valence of feedback may be the critical variable, but the study involved Dutch youth who at the time were using SNS far less than American youth today do. American adolescents who typically spend more time on SNSs than

the Dutch sample may experience the sites differently than Dutch youth. Additionally, Valkenberg and Peter (2007) measured *social* self-esteem, or well-being associated with being well liked among peers. The researchers did not measure general self-esteem, which is more strongly related to psychological well-being (Rosenberg et al., 1995). In an effort to replicate the findings of Valkenburg and Peter (2007), I pose the following hypothesis:

> H_7: Adolescents who receive positive feedback on SNS will have higher self-esteem than will those who receive less positive feedback.

Chapter 2

Method

This dissertation is a two-part study that employed a mixed-method approach. Each part of the study involved the same sample of adolescents. Study 1 consists of a survey about adolescents' Facebook activity and social media use. Study 2 is a content analysis of the same adolescents' Facebook profiles.

This section of the dissertation will detail the procedure for both parts of study, starting with an overview of what is common between the two parts and then outlining specific details for each part. Definitions of all the variables used in each part of the study will be described.

Participants

A total of 227 students from two high schools were recruited as participants for this study. Both high schools are located in the Midwest. School A was located in a mid-sized town, and has a more racially diverse student population than School B, which was located in a smaller rural town. Given potential differences between the schools, initial analyses controlled for the school of the participant. However, school was not a significant variable, and was thus dropped from final analyses.

Based on a limited number of previous studies that employ the same method, the present study was expected to reach a medium effects size of 0.25 (Cohen, 1988). A power analysis for this effect size was used to conclude that a total sample of 180 participants was needed to achieve adequate power of 0.80. The present study met the statistical requirements with a sample of 227 participants for the first part of the study. Ninety percent (n = 204) of the participants for the first part of the study also participated in the second part.

The age range for the participants was 14 to 18 years old (M_{age}=15.71, SD = 1.18). The sample contained slightly more females (60%) than males (40%). Participants were distributed

evenly across grade level: 25% in 9th grade, 25% in 10th grade, 26% in 11th grade, 24% in 12th grade. Roughly two thirds (69%) of participants identified as White or Caucasian, 9% identified as Black or African American, 6% identified as Asian, 5% as identified as Latino/Hispanic, and 11% identified as having a mixed racial background.

Procedures

The researchers received permission from two high school superintendents to recruit participants for the study in their schools. As a first step, the lead researcher went to each school during regular hours to meet with students and to describe the study. Both schools allowed the researcher to visit specific classrooms for recruitment. School B also allowed the researcher to recruit participants during the lunch hour. In these sessions, the researcher described the overall purpose of the study and explained that the teens' data would remain confidential and private. For instance, the researcher showed the students how any last name on the profile would be blacked out. Parental consent forms were distributed to those students who were interested in participating. Students were told to return the signed parental form to the school.

The parental form requested separate consent for the teen to participate in the survey portion of the study and the Facebook profile capture portion of the study (see Appendix A and B for consent forms). Before participation, students were also given the opportunity to sign separate assent to participate in one or both parts of the study. In general, parents and teens were willing to sign consent for each part of the study. Discounting adolescents without Facebook profiles, 93% of parents allowed their teen to participate in each part of the study. Similarly 94% of teens signed assent for each part of the study.

Four researchers worked to conduct the study in the first school, whereas one researcher worked in the second school. The study took place in a quiet room during normal school hours. The adolescents participated in the first part of the study in small groups, ranging from 5 to 15

people. The survey consisted of a 163-item questionnaire that was completed on paper. Participants were instructed to work quietly and to keep their answers to themselves. In order to ensure privacy, students were either seated at separate desks or provided with a cardboard barrier so that participants could not see each other's responses. It took participants about 20 to 30 minutes to complete the survey.

Upon completion of the survey eligible participants began the second part of the study, the Facebook profile capture. To complete the screen capture the participant sat at a desk with the lead researcher. To protect the privacy of the participant, the desk faced away from the other participants. The participant was asked to log in to Facebook while the researcher looked away. Once logged in, the researcher explained to each participant exactly what she was doing while taking the screen captures. The researcher then took screen captures of the About section, and the Timeline. These screen captures were saved as HTLM files on the researcher's laptop computer using Google Chrome's "Save as" feature. The researcher showed participants how she was saving the screen captures using their participant numbers, and how she could not change anything on the saved version of the screen capture. She reiterated that before being analyzed, all of their private information would be blacked out. The researcher then logged the participant out of Facebook and verified that she could not log back in using the participant's credentials.

All participants were thanked and given the appropriate Amazon gift card. Participants were offered a $10.00 Amazon gift card for participation in both parts of the study. Those adolescents who could not participate in the second part of the study because they did not have a Facebook account also received a $10.00 Amazon gift card. Those who only participated in the survey were given a $5.00 Amazon gift card.

Study 1: The Survey

Measures

Given that social media and Facebook are relatively new phenomena, there are no well-established validated scales that can be used. Previous work guided the items that were specifically crafted for this dissertation.

All participants received the survey questions in the same order (See Appendix C for the full survey).

Time spent on Facebook. Given the fluid and habitual nature of SNS activity, measuring how much time people spend using Facebook can be complicated. To help adolescents respond to Facebook exposure questions accurately, the questions were split into smaller time segments, in the same vein as the measure of unique site visits. Adolescents were asked to report on how much time they spent on Facebook during a typical weekday "before school," "during school," "after school before dinner," and "after dinner before sleep." Similar questions were asked to assess how much time the adolescents spent on Facebook during a typical weekend day. Responses included 0 *(no time)*, 1 *(1-10 minutes)*, 2 *(11-30 minutes)*, 3*(31-60 minutes)*, 4 *(1-2 hours)*, 5*(2-3 hours)*, 6 *(3+ hours)*.

Responses to these eight items were summed to create a score of how much time each participant spent on Facebook. Participant scores ranged from 0 to 42 (M = 9.12, SD = 8.03).

Facebook intensity. To understand how important Facebook is to adolescents, participants' attachment to Facebook was measured using the Facebook intensity scale (Ellison, et al., 2007). This scale was designed to assess how emotionally connected people are to Facebook. Six items from this scale were used in the present study. Example items included, "Facebook is a part of my every day activity," and "I feel out of touch when I haven't logged onto Facebook for awhile." Adolescents responded to the items on a 5-point Likert scale,

ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The items were summed to create a Facebook intensity score for each participant. Scores ranged from 6 to 30, with higher scores reflecting more attachment to Facebook (M = 16.38, SD = 6.30).

Facebook lurking. In order to disentangle whether adolescents were actively posting to Facebook or simply spending their time reading others' posts, Facebook lurking was assessed. Lurking was measured with an item that asked adolescents to choose between two ways that people commonly spend time on Facebook. The item stated, "Young people use Facebook in different ways. Some like to post pictures and comments, and others like to read what other people post. Please select the option that describes what you do on Facebook most of the time." The responses included, "I am an active Facebook user. I post a lot, comment, and "like" other people's posts or photos," and "I am a Facebook observer. I read, look at, and take in what other people post without responding to them."

Facebook activities. Adolescents who actively use Facebook may be doing so in different ways. To test the idea that engaging in particular Facebook activities may be related to the identity status of adolescents, the frequency that adolescents engage in different Facebook activities was measured. Several items used by Pempek, Yermolayeva, and Calvert (2009) were adapted and expanded. Adolescents were asked how frequently they do things like "comment on other people's photos," "chat with people using Facebook chat," "comment on other people's posts," and "create or communicate with groups on Facebook." Responses were made on an adapted 5-point Likert-type scale: "never," "not much," "sometimes," "quite a bit," and "a whole lot," ranging from 1 to 5, respectively (Pempek et al., 2009).

Diversity of friends. To test the hypothesis that there is a relationship between the richness of an adolescent's social connections online and her or his self-concept, the range of diversity among the participant's Facebook social networks was measured. First, adolescents

were asked about the number of their Facebook friends. Responses ranged from 0 (*100 or* less) to 10 (*1,000+*). Second, an adapted version of the Social Network Index (Cohen et al., 1997) was used to measure the diversity of each participant's Facebook friends network. The index asks participants to assess their participation in 12 types of social relationships. Among others, these include relationships with parents, close family members, friends, and schoolmates. The measure was adapted to ask adolescents whether they have become Facebook friends with people from these various social relationships. For instance, adolescents were asked "Are you Facebook friends with your mom/step-mom," "Are you Facebook friends with people from religious groups like church or synagogue," and "Are you Facebook friends with people from work?" Participants answered either "yes" or "no" to these questions. From the responses, each adolescent received a social network diversity score, which was calculated by summing the total number of different kinds of Facebook friends the participant reported (M = 7.52, SD = 2.34). The number of Facebook friends (M = 3.88, SD = 3.23) was added to the diversity score to create an index of the diversity of an adolescent's network. Scores ranged from 0 to 22 (M = 11.40, SD = 4.38). Higher scores indicated more diversity within the individual's Facebook network.

Feedback from friends. To test the idea that online responses from others will predict an adolescent's self-concept development, the participants were asked about the *amount* and the *nature* of feedback received from Facebook friends. Two items were created to tap the amount of feedback that participants received from others. Adolescents were asked, "How often do other people "like" or comment on your Facebook posts or photos?" and "How often do other people leave comments on your Timeline?" Responses were recorded on a 5-point Likert-type scale, ranging from 1 (*never*) to 5 (*a whole lot*). To measure the nature of the feedback, two items were used from a recent national study on teens' experiences with kindness and cruelty on social

network sites (Lenhart et al., 2011). The original items from Lenhart and colleagues (2011) were phrased to assess the participants' general observations of kindness and cruelty on social media. These items were adapted to ask specifically about the adolescents' own experiences. For instance, one item asked, "How often have you experienced people being cruel or mean to you on Facebook?" The other item asked, "How often have you experienced people being nice or kind to you on Facebook?" Responses ranged from 1 (*never*) to 5 (*a whole lot*).

Identity status. The identity status of adolescents was assessed using Bennion and Adam's (1986) Extended Objective Measure of Ego Identity Status (EOMEIS-2), which was developed and refined from the original Marcia Ego Identity Interview (1966). The EOMEIS-2 was designed to classify individuals into one of the four statuses: foreclosed, diffused, moratorium, achieved (Adams, 1998). The measure has been widely used successfully with adolescent age groups (e.g., O'Connor, 1995; Streitmatter, 1993).

The adolescents were presented with 86 statements and asked to indicate the extent to which they agreed with each item on a 6-point Likert scale ranging from 1 (*strongly agree*) to 6 (*strongly disagree*). The items measured things like philosophy on politics, religion, and career (Bennion & Adams, 1986). For example, participants rated their level of agreement with statements such as, "I just can't decide what to do for an occupation. There are so many possibilities," and "I've gone through a period of serious questions about faith and can now say I understand what I believe in as an individual." Other items pertained to an individual's views on friendship, sex roles, dating, and recreation. For instance, adolescents were presented with statements such as, "After trying a lot of different recreational activities, I've found one or more I really enjoy doing by myself or with friends," and "I've had many different relationships and now I have a clear idea of what I look for in a friend."

The EOMEIS-2 was scored according to the protocol developed and validated by Bennion and Adams (1986). These authors published the SPSS syntax used to analyze the data produced from the measure. By using the syntax, each participant was placed into one of the four identity statuses defined by Marcia (1966): foreclosed, diffused, moratorium, or achieved.

Self-complexity. To assess how complex teens' sense of self is, an adapted version of the Self-Complexity Scale for Children (SCSC) was employed (Abela & Veronneau-McArdle, 2002). Only the first part of the SCSC was utilized because the second part cannot be accomplished in a survey format. In the first part of the SCSC, participants are instructed to list all of the ways, roles, or characteristics (e.g., self-aspects) they use to describe their self. The current survey provided adolescents with 10 lines to list these self-aspects.

A composite self-complexity score was created, using the guidance of Harrison's (2006) method. As she points out, a mere count of the words written by participants produces an invalid measure of self-complexity because participants may use several synonyms to describe the same aspect of the self. For instance, an adolescent listing herself as "intelligent," "smart," and "intellectual" is representing one attribute - intelligence. After training, coders counted the number of conceptually unique self-aspects for each participant. An online thesaurus (www.thesaurus.com) was used to designate synonyms. Adolescents received a self-complexity score that reflected the number of unique self-aspects listed. Scores ranged from 2 to 12, with higher scores reflecting greater self-complexity (M = 7.07, SD = 2.23).

Self-concept clarity. The Self-Concept Clarity Scale (SCCS) developed by Campbell and colleagues (1996) was used to measure the consistency of participants' self-concepts. The 12-item measure asked adolescents to rate their level of agreement or disagreement with statements such as "My beliefs about myself often conflict with one another," and "In general I have a clear sense of who I am and what I am." Ratings were made on a 5-point Likert scale

anchored by 1 (*strongly disagree*) and 5 (*strongly agree*). Scores ranged from 12 to 45, with higher scores indicating greater self-concept clarity (M = 34.70, SD = 9.01).

Self-esteem. The Rosenberg (1965) Self-Esteem (RSE) scale was used to measure adolescents' generalized feelings of their own self-worth. This widely validated 10-item scale assesses how a person feels about his or her global self, as opposed to assessing how a person feels about particular domains of the self. Adolescents were asked to rate statements on a Likert-type scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Example items included, "On the whole, I am satisfied with myself" and "I certainly feel useless at times" (reversed scored). The items were summed to create a self-esteem score for each individual in which higher scores reflected greater self-esteem (M = 19.71, SD = 5.89). Participants' scores ranged from 2 to 28.

Parent-adolescent communication. To test the idea that parent-adolescent communication may modify the relationship between SNS use and identity exploration, an adapted version of the Parent-Adolescent Communication Scale (PACS) developed by Barnes and Olson (1985) was used measure how adolescents communicate with a parent. The original scale asks participants to report on all items twice, once for mothers and once for fathers. Given concerns about participant fatigue, only questions pertaining to mother were asked in the current study.

Adolescents responded to the items on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Example items included, "I find it easy to discuss problems with my mom," and "I am sometimes afraid to ask my mom for what I want." The items were summed to create a score for each participant. A higher score reflects a better quality of mother-adolescent communication (M = 61.49, SD = 15.0).

As a second measure of parent-teen communication, adolescents were asked how often they ate dinner with their families. Based on an item used by Fulkerson et al. (2006), the teens were asked, "In an average week, how many times do all of the people in your family who live with you eat dinner together?" Response options range from 0 (*none*) to 7 (*seven*) (M = 3.79, SD = 2.36).

The parent-adolescent communication variable for this dissertation consisted of a sum score of the PACS variable and frequency of eating dinner with family. Scores ranged from 25 to 101, with higher scores indicating better parent-adolescent communication (M = 65.28, SD = 15.57).

Time spent in face-to-face-interaction. It was hypothesized that how often and in what ways adolescents socialize will influence their identity development. To test this idea, time spent in different kinds of face-to-face (FtF) interactions was calculated using adapted items from previous studies on how adolescents spend their time (Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2007; Jacobs, Vernon, & Eccles, 2004). Adolescents were asked about six types of activities that occur in a face-to-face context. These activities included playing sports, participating in extracurricular activities and clubs, participating in religious activities, volunteering, having a job, and hanging out with friends (in person) outside of school.

Adolescents were asked two questions for each activity. The first question was open-ended and asked them to list the sports they play, clubs they are in, and jobs they have, etc. The second question asked adolescents to report the amount of time spent on each type of activity during a typical day. Responses ranged from 1(*less than 10 minutes*) to 6 (*3 or more hours).* In the instance that a participant did not report participating in the activity, he or she was instructed to skip the second question about time. The responses for all six activities were summed to create a score representing the total amount of time spent in face-to-face situations, with higher scores

indicating more time spent. Scores could range from 0 to 36 (M = 14.52, SD = 6.56).

Sociability. Using the data from the variables that measured time spent on Facebook and time spent in face-to-face interaction, each adolescent was categorized into one of four types of sociability (see Table 1). To locate adolescents within the quadrant each individual received a sum score for the amount of time spent on Facebook and in FtF interaction. Next, a median split was performed for each measure. The adolescents who were high in time spent on both FB and FtF fell in the "hypersocial" category. Those who were low in both criteria were classified as "asocial." Adolescents who were high in time spent on Facebook, but low in time spent in FtF interaction, were categorized as "plugged in." And teens, who were high in FtF, but low in FB, were placed in the "social butterfly" quadrant.

Demographics. Adolescents reported age, sex, race, and school grade. For race, the adolescents were presented with a list of several possibilities from which they could choose more than one category. Options included White/Caucasian, Black/African American, Native American, Hispanic or Latino, Asian, and Native Hawaiian or Pacific Islander. Participants' race was collapsed into two categories: Caucasian and non-Caucasian. Adolescents also reported mother's and father's highest level of education. Responses included "dropped out of high school," "high school diploma," "some college education," "college degree," "graduate or professional degree," and "I don't know."

Study 2: The Content Analysis

The second part of the study involved a content analysis of adolescents' Facebook pages. Nearly all of the participants (90%; n = 204) who participated in the survey also allowed the researchers to capture their Facebook profiles. This section begins with an overview of the coding process for the profiles. Then I describe the three parts of the profile that were assessed: the About section, the Timeline, and the Activity Log. For each of these parts, I define the unit

of analysis as well as the variables that were coded.

Coding

Three female undergraduates served as coders for this part of the study. They were recruited from media courses in the Department of Communication at the University of Illinois. The coders received classroom training on the codebook for one semester. They trained using a "practice set" of 50 Facebook profiles gathered from a sample of college freshmen at the University of Illinois. The coder training took longer than anticipated because it was challenging to unitize parts of the profiles. Training was complete once coders achieved 80% reliability on college profiles.

Coders were randomly assigned a set of 10 to 12 adolescent profiles to code each week. Each profile was printed on paper, in black and white, for coding purposes. The coders worked independently. Although rarely used, coders had access to the original digital files of the profiles. The coding process took 6 weeks. A total of 204 profiles were coded by all three coders to assess reliability. The coding reliabilities for all variables achieved at or above 80% agreement (ranging from .85 to 1.0), using Cohen's Kappa. Please see Appendix D for all reliability data.

About Section of the Profile

The "About" section part of the Facebook profile provides personal information about the profile owner. The About section is organized by the different categories of personal information that a user may choose to share. These categories range from less personal topics such as favorite media outlets, to more personal topics such as contact information.

About section unit of analysis. Each *item of personal information* was defined as a separate unit of analysis for the About section. At the time of coding, Facebook allowed users the opportunity to complete 44 items of personal information. For example, users can respond to questions such as, "Where have you worked?" and "Where did you go to high school?" The

answers to these items are a part of the variable "work and education."

The items of personal information were coded even if it was obvious that the personal information was contrived. For the purpose of this dissertation, any purposeful act of sharing information was considered an expression of the self, regardless of the validity of the information shared. Research shows that teens will use the About section of SNSs to joke or poke fun at the rigidity of the pre-set architecture of the profile (boyd, 2013). For example, under the category of "schools attended" one participant listed attending Hogwarts School of Witchcraft.

Variables Coded in the About Section. The About sections of the profiles vary quite a bit depending upon how much information an adolescent is willing to share on Facebook. The amount and nature of such information provides one indicator of how much a teen uses social media to express aspects of the self.

Photos. Posting photos is a common Facebook activity among teens. The About section displays the total *number of photos* stored on the site. Coders reported this figure.

Coders also assessed the content of two particular photos that are displayed prominently on each site. The first is the "profile pic," which is considered the main photo for the profile. The profile pic not only is available on the About section and Timeline, but it also appears as a thumbnail image anytime the user comments anywhere on the site. Often the profile pic is a photo of the profile owner. The second type of photo is the cover photo. The cover photo is larger than the profile photo and is situated at the top of the profile, seemingly used to "decorate" the profile.

Coders analyzed these two images in terms of the nature of the image displayed. Each photo was coded into one of the following categories: a selfie (any solo self-portrait photo taken of the participant by the participant; selfies are typically stylized and taken with a mobile device

held at arm's length, taken in a mirror, or shot with a webcam while at a computer), a solo shot of the participant that is not taken as a selfie, a group shot including the participant, a photo or a drawing of another person (e.g., a celebrity, a friend, a TV character), a cartoon or graphic image of the self, a landscape or abstract photo, a logo or similar graphic image, or the blank default Facebook silhouette.

Demographic and basic information. In this section, users have the opportunity to share demographic information about the self. Coders evaluated the absence or presence of this information. Specifically, coders noted whether or not the adolescent disclosed their *religion*, and *political views*.

Contact information. Some users treat the About section like a digital business card, sharing contact information such as their email address and personal website. Because people may have more than one email address or mailing address, Facebook allows users to enter more than one piece of information for each of these items. Thus, coders assessed *the number of email addresses, mobile phone numbers, other phone numbers, IM screen names, physical addresses,* and *websites* that each adolescent listed on the profile.

Favorite media. Teenagers often use their favorite media to express their identity, decorating their lockers and bedrooms with images of favorite musical artists and movies (Steele & Brown, 1995). Adolescents can also share their favorite media on the About section of their FB profile. Facebook gives adolescents the option to "like" particular media, such as a television program or musical artist. Coders tallied the total *number of likes* for each of five categories of media: *movies, television shows, books, music,* and *games*.

Users can also link their other social media accounts to their Facebook profile. For instance, adolescents can link their Instagram account to the About section of their Facebook

profile. Coders tallied the total *number of social media accounts* that were listed on the individual's About section.

About me. The About Me section allows users an opportunity to provide additional information in an open-ended fashion. The "About Me" section prompts adolescents to write about and describe who they are. In order to gauge the quantity of information being shared, coders analyzed this section by tallying the *amount of text (assessed by number of lines of text written*.

Groups. Users can join groups on the Facebook site. If an adolescent joins an "open" group, such as the athletics fan page for their high school, this group will be linked to the individual's About section. Coders evaluated the *number of open groups* that were listed on the participants' profiles. Facebook also allows users to create and join private groups. However, this information was not visible on the screen capture and was thus unable to be coded.

Events. Users can create and plan events with Facebook's event planner, which works like a digital RSVP service for invitations. The About section displays up to eight events that the adolescent has either recently attended or plans to attend in the near future. Coders reported the *number of events* that were listed on the participants' profiles.

Timeline Section of the Profile

The Timeline section of the Facebook profile documents the interpersonal communication that occurs on a user's Facebook page. The Timeline is presented as a chronological accumulation of the conversations that occur on a person's page. It makes visible all of the comments, likes, and photos that a user shares with his or her personal network, as well as all of the comments, likes, and photos that FB friends share with that user. Because the Timeline records every conversation that has ever occurred on a person's Facebook page, it can produce an exorbitant amount of information. For the purposes of this study, I narrowed the

information by taking a screen capture of the adolescent's Facebook activity for the most recent week. Thus, the coders analyzed one week of activity on the adolescents' Timelines.

Timeline unit of analysis. To code the Timeline, I decided to use each *thread* as the unit of analysis. Frequently found in online discussion forums and e-mail, threads are asynchronous web-based discussions that are organized by topic (Kirk & Orr, 2003). Threads only appear on the Timeline section of the profile. For the current study, a thread is comprised of two parts: the original post, which may include of text, photos, or a link to a website, and all the feedback that the post receives, which can come in the form of "likes" as well as specific comments. A thread is started when an adolescent creates an original post, either on his or her own Timeline, or on a Timeline of a friend. Although it may seem complicated to track the thread and all of its accumulated information, Facebook separates each thread into its own box. Thus, the visual cue made the process of unitizing the information relatively easy.

Variables coded on the Timeline. Some of the variables coded on the Timeline refer to the original post and others refer to the responses to that original post. For the original post, the variables were designed to assess the nature of the content (e.g., photo, text) and how personally revealing or intimate the information is. Responses to the original post were assessed in terms of the amount and nature of that feedback.

Frequency of posts. Coders reported if the adolescent participant or an "other" created the original post. For clarification, the adolescent participant is the profile owner, and an "other" is defined as any person on the Facebook profile who is not the participant. A final tally of the number of posts created by the participant over one week was produced.

***Personal photos*.** Many original posts contain personal photos posted by the adolescent. Coders reported the number of personal photos uploaded by the participant. For instance, an adolescent may post personal photos from a sports game, a Homecoming dance, or hanging out

with friends after school.

Self-expression. Self-expression was defined as any original post that communicated personal information about the participant. For example, self-expression could include statements about an adolescent's current or recent activities, personal opinions, or emotions and moods.

Coders evaluated each post for evidence of self-expression. In particular, they coded whether the post contained any of the following types of self-expression: 1) expression of experience, 2) expression of opinion, and 3) expression of affect. A post could contain more than one type of self-expression.

An *expression of experience* was defined as any statement about the participant engaging in some kind of activity, or doing or seeing something. For instance, one participant posted, "Adventures of a petting farm" and posted a picture of himself feeding a goat.

An *expression of opinion* was defined as any statement involving the participant's beliefs or judgments about a particular object, event, or person. Adolescents often share their opinions about media, fashion, pop culture, peers, inappropriate behavior, politics, and religion. For instance one participant posted, "I am probably going to take crap for this, but Arianna Grande really isn't that hot. A little overrated. Just Saying."

An expression of *affect* was defined as any statement about the participant's feelings, emotional state, or general mood. For example, one participant updated her status to, "Idk [I don't know] what's wrong with me right now but I can't tell if I'm mad or upset about something or if I'm just overly tired. Idk but this sucks."

Domains of the self-concept. Domains of the self are the categories people use to organize their self-concepts. Research shows that the adolescent self is typically organized into at least eight domains (Harter, 1999). Those domains are: scholastic competence, job

competence, athletic competence, physical appearance, peer acceptance, close friendships, romantic relationships, and conduct/morality. For this study, the domains of "peer acceptance" and "close friendships" were collapsed into one category. Three other domains were added, which included extra-curricular activities, family relationships, and politics. Coders assessed the presence or absence of each domain for each original post made by the participant. Thus, more than one domain could be present in each original post. For instance, an adolescent who posted a photo of her track team and wrote about her best friends on the team would be displaying two domains of the self (i.e., athletic competence and peer friendships). Definitions of these domains are detailed below.

Scholastic competence was defined as anything in the post that referred to a participant's grades, particular subjects in school, doing homework, assignments, applying to colleges, and getting accepted to colleges. For example, one participant posted, "Just received my acceptance letter to <school>!!!"

Extra-curricular was defined as any participant's communication about school clubs or activities or community clubs or activities. This category did not include posts about sports teams or athletics. Extra-curricular included activities such as student council, school plays, and school clubs like Key Club. For instance, one participant wrote, "Rehearsal with the best people!" and posted a photo of herself at play rehearsal.

Athletic competence was defined as anything in an adolescent's post about being on a sports team or on a sports-related team, such as dance or cheer. The post could also mention athletic goals met, such as reaching a particular score or time. Athletic competence did not strictly refer to team related activities or sports. For instance, a status update stating, "going on a run" would be coded as athletic competence.

Job competence was defined as anything in an original post about the participant's job or employer. For instance, one participant wrote a status update saying, "Working tonight at the haunted house, make sure to come out and see me. Tickets are $5."

Physical appearance was defined as anything in an original post about the participant's physical attractiveness or physical looks. Status updates or photos could feature the participant's fashion, makeup, clothing, or hair style. For example, one participant posted three selfie photos featuring her in her Homecoming dress. In this post she stated "yall can call me princess J." Because of her body language and the text that highlighted the tiara on her head, the post was coded for the presence of the physical appearance domain.

Peer friendships referred to any information in the original post about the participant's relationships with peers and friends. For instance, many adolescents posted about how much they like their best friends. It was also very common for adolescents to post group photos of themselves with their friends. For instance, one participant posted several photos featuring her with her friends and wrote, "My day with some great friends!!!"

Family relationships referred to anything in an original post about a participant's nuclear or extended family. For example, one participant posted a photo of her and her father and added the text, "Daddy's girl." Other posts about family relationships featured extended family, such as cousins, aunts, and uncles.

Romantic relationships were defined as anything in the post to that referred to the participant's intimate relationship with a significant other. For example, one participant wrote a status, "When your boyfriend makes you sandwiches." Instead of text, some adolescents posted only photos that showed cuddling or kissing a significant other and this was also coded as romantic relationships.

Morality was defined as anything in a post that referenced religion or a struggle to define the distinction between behaving in a "right or wrong" manner. For example, one participant stated, "If you disrespect me, don't expect me to respect you."

Politics was defined as any post that featured government, politicians, or national policies. This domain features any original posts from the participant about his or her political beliefs, or political stance on any domestic or global issues. For instance, one participant shared a meme about his preferred political party.

Feedback Variables. Feedback from others is an important part of the identity formation process (Kerpelman et al., 1997b). Feedback was conceptualized as the likes and comments that the participant received on his or her original posts. Several variables were coded to assess feedback.

Likes. Coders reported the total number of likes that the adolescent's post received.

Comments. Coders reported several measures about the comments. First, they tallied the *total comments* that were made in response to the participant's original post. It was common for a participant to be a part of the conversation on the thread of the original post. Consequently, coders reported the *number of comments made by the participant* in the thread. Thus by subtracting the number of comments made by the participant from the total number of comments on the thread, a more accurate number of comments directed toward the participant can be reported.

Comments directed at participant. Coders tallied the number of comments that were *directed at the participant.* Comments that were directed at the participant were defined as any comment that specifically addressed, mentioned, or referenced the participant.

Valence of feedback. Coders assessed whether each comment in the thread was positive, negative, or neutral in valence. The coders then tallied the total number of positive comments

and negative comments that were *directed at the participant.*

Positive feedback was defined as any comment that showed support, reinforcement, or agreement. Examples could include comments about posts (e.g., “OMG I love your shirt!” and “great pic!”), statements of agreement (e.g., “agreed” and “right on”), or joyful comments (“yaaaaaay!” and “weeeeeeeeeeeee!”) were considered positive.

Negative feedback was defined as any comment that showed disrespect, disdain, or disregard. Examples could include, “OMG shut up,” “srsly? you suck” and name calling such as “dumbass” and “idiot.” Coders were instructed to avoid inferring sarcasm or friendly banter. For instance, even with the inclusion of the smiling emoticon, “I hate you ☺” shows a lack of regard for the person receiving that communication.

Chapter 3

Results Study 1

Identity Status

Data Analysis. All hypotheses and research questions involving identity development focused on the outcome measure of identity status. Research on identity formation confirms that adolescents vary in terms of how much they explore an identity before they commit to one (e.g., Erikson, 1959; Marcia, 1966). To tap differences between adolescents who had explored identity and those who had not, the status variable was collapsed into two categories: advanced and emergent. Those in the advanced category, scoring either in the moratorium or achieved status, showed evidence of actively exploring and teasing out their identities. In contrast, those in the emergent category, scoring in either the diffused or foreclosed statuses, showed no evidence of actively exploring their identities. Almost one quarter (23%) of the adolescents were categorized as in the advanced identity status, and the remaining three quarters (77%) were categorized as having a nascent, emergent identity.

To analyze relationships between Facebook and identity status, a series of hierarchical binary logistic regressions were conducted. A binary logistic regression is used when the outcome variable is categorical (Tabachnick & Fidel, 2001). Only those participants who used Facebook (96%) were included in these regressions. In the analyses, Block 1 included the adolescent's age, sex, and race to control for the influence of demographic variables. Block 2 included various measures of Facebook use, depending on the hypothesis or research questions being tested. Block 3 involved tests of specific activities on Facebook, which is relevant to the last set of hypotheses/research questions in this section.

Hypothesis 1. Hypothesis 1 predicted that heavy users of Facebook will be more advanced in their identity status than will light users of Facebook. To test this hypothesis, I

conducted a hierarchical binary logistic regression in which the outcome of identity status was collapsed into two categories: emergent (i.e., foreclosure and diffusion) and advanced (i.e., moratorium and achieved).

In the Block 1, adolescent's age, sex, and race were entered as control variables. In the second block, two different measures of Facebook use were included: time spent on Facebook and Facebook Intensity, which is a measure of how attached one is to the site.

The results of this analysis are shown in Table 2. For Block 1, neither sex nor race was significantly related to identity status. However, age approached significance as a predictor of status, such that older adolescents tended to have a more developed, advanced identity status than did younger adolescents ($p = .09$). For Block 2, Time spent on Facebook was a significant predictor of identity status. Adolescents who spent more time on Facebook were more likely to have an advanced identity status than did those who spent less time on Facebook. The second measure of usage, Facebook Intensity, did not significantly predict adolescent's identity status. Thus, Hypothesis 1 was supported by one measure of use (time spent) but not by the other (intensity).

Hypothesis 2. Hypothesis 2 posited that adolescents who actively post and comment on Facebook will be in a more advanced identity status compared to adolescents who primarily lurk on Facebook. To test this hypothesis, I conducted a hierarchical binary logistic regression in which the outcome of identity status was collapsed into the same two categories: emergent identity status (i.e., foreclosure and diffusion) and advanced identity status (i.e., moratorium and achieved). Age, sex, and race were entered in Block 1 to control for their effect on identity status. The second block included a categorical variable that assessed the nature of adolescent Facebook use. Specifically adolescents chose the nature of their Facebook use as primarily engaged (i.e., active) or lurking (i.e., passive).

Engaged Facebook use was less common among adolescents. Almost one fourth (23%) of adolescents reported that they primarily spent their time posting things to Facebook, commenting on other people's posts, or liking other people's posts. In contrast, roughly three fourths (73%) of adolescents reported that they primarily lurked on Facebook - reading other people's posts and observing what other people were doing on the site.

Results of the logistic regression are shown in Table 3. For Block 1, the other demographic variables were not significantly related to identity status. For Block 2, Nature of Facebook Use did significantly predict identity status. Engaged users of Facebook were more likely to be in an advanced identity status than were lurking users. Thus, H2 was supported.

Research Question 1. As indicated above, the overall nature of Facebook use was a significant predictor of identity status. Research Question 1 focuses more specifically on particular types of activities that may be related to identity status. To address this research question, I conducted a factor analysis of the 16 items that assessed frequency of engaging in specific activities on Facebook, such as uploading photos and updating one's personal status. The items were subjected to a principal components analysis using Varimax rotation. Any items with low factor loadings (less than 0.65) or that cross-loaded with more than one factor were removed from the final factor structures. Results of this factor analysis are displayed in Table 4. As can be seen, four factors met the retention criteria, each having eigenvalues greater than 1.0. A scree-plot test confirmed the existence of four factors. In total, 9 items contributed to the four factors, accounting for 56% of the variance.

The first factor, Status Update, accounted for nearly one third (30%) of the variance. It included three items involving the frequency that adolescents updated their Facebook status to reflect present activities, their emotions, or their health. The second factor, Photos, accounted for roughly 11% of the variance. It included two items about the frequency that adolescents

uploaded photos or tagged/un-tagged photos of their self. The third factor, Messaging, accounted for 9% of the variance and included two items assessing the frequency that adolescents messaged others using either chat or email features on Facebook. The final factor, Social Coordination, accounted for almost 7% of the variance. It included two items that measured how often adolescents created or responded to event invitations on Facebook or how often they participated in Facebook groups.

To test whether engaging in particular Facebook activities was related to adolescent identity status, a hierarchical binary logistic regression was conducted in which the outcome of identity status was collapsed into the emergent and advanced identity statuses as in previous analyses. Demographic characteristics of age, sex, and race were entered into the first block of the model. The second block of the model included time spent on Facebook, Facebook Intensity, and nature of Facebook use (engaged vs. lurking) to control for overall usage patterns. The third block of the analysis included the four factors involving different types of activities: Status Update, Social Coordination, Messaging, and Photos.

Results are displayed in Table 5. As can be seen, Social Coordination was the only type of activity that predicted identity status and this relationship approached significance ($p = .07$). Adolescents who used Facebook to coordinate their social life tended to be in the advanced identity status more often than did those not using Facebook for this purpose.

Hypothesis 3. The third hypothesis posited that adolescents who spend more time socializing both online and offline with peers will be more advanced in their identity status than will teens who spend less time socializing. Social interaction was assessed in terms of both Facebook and face-to-face experiences. Using median splits on each variable, adolescents were categorized as low or high in face-to-face communication and low or high in Facebook communication. This categorization scheme resulted in the Sociability Quadrant, which

classified teens into one of four categories: asocial (32%), plugged-in (19%), social butterfly (32%), or hypersocial (17%). See Table 1.

To test the third hypothesis, all participants were included, regardless of whether they had a Facebook site (N = 226). A log-linear analysis was conducted because the main predictor variable in this case was categorical. A log-linear analysis tests the relationship among three or more categorical variables, similar to a traditional analysis of variance (ANOVA) test. Age (14-15 vs.16-18) sociability (asocial, plugged-in, social butterfly, or hypersocial) and identity status (emergent vs. advanced) were entered as factors in the analysis. Race and sex were excluded from the log-linear analysis because neither of these demographic variables significantly predicted identity status in the any of previous analyses. Moreover, including them in the log-linear analysis produced too many low cell frequencies, violating the chi-square assumption that no more than 20% of the expected counts in the contingency table are less than 5 (Tabachnick & Fidell, 2001).

The log-linear analysis on identity status revealed no significant main effect for age. However, as predicted, there was a significant main effect for sociability G^2 (3, N= 226) = 16.26, p = .001, V* = .19.

Post hoc analyses were conducted on the frequencies using the chi-square analog to the Scheffé procedure (Tabachnick & Fidell, 2001). See Table 6 for results. In particular, hypersocial adolescents were more likely to be in an advanced identity status than were asocial adolescents. Adolescents categorized as social butterflies were also more likely to be in an advanced identity status compared to asocial adolescents. No other differences were statistically significant. However, it is interesting to note that the combination of online and offline sociability produced the highest proportion of adolescents in the advanced identity status, even

though the pattern was not statistically different what was observed with high levels of sociability in *either* online or offline modalities.

The interaction between age and sociability was not significant.

Taken together these results support the idea that teens who spend substantial time socializing, particularly in face-to-face situations, are more likely to be in an advanced identity status compared to those teens who are less social with peers. Thus, H3 was generally supported.

Research Question 2. Research question 2 asked whether parent-adolescent communication might moderate the relationship between time spent on Facebook and identity status. As indicated above, the parent-adolescent communication variable takes into account the quality of adolescent-mother communication as well as the frequency that the adolescents' family ate dinner together. The subsequent moderating variable was mean centered before analyzed.

A hierarchical binary logistic regression was used to test the moderation effect. The results of the analysis are displayed in Table 7. As with previous logistic regressions, demographic variables were entered in Block 1. Again age of the adolescent approached significance (p = .09) as a predictor of status. In Block 2, the Facebook use variables were significantly related to identity status. Specifically, more time spent on Facebook predicted an increased likelihood of being in an advanced identity status. Facebook Intensity approached significance as a predictor of identity status (p = .05). Unlike time spent, however, intense attachment to the site tended to predict being in an emergent identity status rather than an advanced status. Nature of Facebook use also approached significance (p = .08), such that engaged Facebook users tended to have an advanced identity status more often than did lurkers.

Parent-adolescent communication (PAC) did not predict identity status on its own. However, in Block 3 of the model, the interaction between PAC and time spent on Facebook

approached significance (p = .06). To better understand the moderating effect of parent-adolescent communication, the interaction was diagrammed (see *Figure 1*). Among those low in PAC there is no relationship between time on Facebook and identity status. The relationship only seems to exist among those with medium or high PAC scores. The relationship between FB use and identity status only occurs among those with enriching and positive parent-child relationships. Thus, pertaining to Research Question 2, parent-adolescent communication did moderate the relationship between time spent on Facebook and identity status.

Self-Concept

Data Analysis. Self-concept was measured using two developmental markers: self-complexity and clarity. Self-complexity refers to the richness and multi-faceted nature of an adolescent's self, whereas clarity refers to how clear and unequivocal the adolescent's self is. In all cases for this section, analyses were run separately for self-complexity and clarity.

The relationship between Facebook use on the one hand and self-complexity or clarity on the other was assessed with hierarchical linear regressions. Generally these analyses contained three blocks of predictor variables. In Block 1, adolescent age, sex, and race were entered in to the analysis in order to control for the effect of these demographic variables. Block 2 involved measures of Facebook use, including time spent on Facebook, Facebook intensity, and the nature of Facebook use (engaged vs. lurking). The third block of the regressions included the additional predictor variables of interest for each hypothesis or research question.

Research Question 3. Research Question 3 asked if there is a relationship between Facebook use and self-concept. For the measure of self-complexity, results are displayed in Table 8. As can be seen, race was a significant predictor of complexity. Specifically, non-Caucasian adolescents reported higher self-complexity than did Caucasian adolescents. The other demographic variables were not significant. The demographic variables accounted for 6% of the

variance in self-complexity scores. In Block 2, time spent on Facebook was significantly related to self-complexity. More time spent on Facebook predicted lower self-complexity. Neither nature of Facebook use nor Facebook Intensity was significant. The Facebook use variables explained an additional 6% of the variance in self-complexity.

For clarity, the second measure of self-concept results are shown in Table 9. In Block 1, age predicted clarity such that older adolescents were higher in self-concept clarity than were younger adolescents. The Facebook use variables (Block 2) did not significantly predict self-concept clarity.

Taken together, results for Research Question 3 are mixed. Self-complexity was related to Facebook use. Specifically, time spent on Facebook was negatively related to complexity. However, no Facebook use variables were related to self-concept clarity.

Hypothesis 4. The ways in which teens communicate about the self on Facebook may be related more strongly to self-concept than general use of the site is. Hypothesis 4 predicted a positive relationship between engaging in self-focused activities and self-concept development. To test this hypothesis, hierarchical linear regressions were conducted to test relationships between self-concept (complexity and clarity) and the four factors of Facebook activities (i.e., Messaging, Status, Photo, Social Coordination).

First, a hierarchical linear regression was conducted to test the relationship between the four factors and self-complexity. The results are displayed in Table 10. In Block 1, non-Caucasian adolescents were higher in self-complexity than Caucasian adolescents. Age and sex were not significant. Once again, time spent on Facebook was negatively related to complexity scores in Block 2. In Block 3 the Status factor approached significance (p = .07), indicating that adolescents who frequently posted statuses tended to have higher self-complexity than did adolescents who rarely posted statuses. No other Facebook activity predicted self-complexity.

A similar hierarchical linear regression was run to test the relationship between engaging in different Facebook activities and self-concept clarity. Results of this analysis are in Table 11. As can be seen, after controlling for the influence of demographic variables (Block 1) and Facebook use variables (Block 2), the Photos factor was significantly related to self-concept clarity. Specifically, the more often adolescents posted photos of themselves, and tagged or un-tagged photos of themselves, the higher their self-concept clarity was.

Taken together, these results support that self-focused activities are related to self-concept development. Supporting H4, actively posting personal statuses tended to predict higher complexity whereas posting photos was related to higher clarity. Both the Status and Photo factors represent more self-focused activities compared to the other two factors, Messaging and Social Coordination, which are more socially oriented.

Hypothesis 5. Self-concept may be influenced not only by what adolescents post to their Facebook pages, but also by the types of people they are connected to on the site. Hypothesis 5 predicted that the diversity of adolescent's Facebook friends would be positively related to self-concept. As mentioned above, the diversity of Facebook friends was a summed score of the total number of Facebook friends as well as the variety of relational roles across those friends (e.g., classmate, parent). On average adolescents reported having between 300 and 400 Facebook friends. Moreover, this network was seemingly diverse. Adolescent reported that they connected to an average of 8 (out of 12 possible) different types of people on Facebook, ranging from family members and classmates to people from work and church.

Table 12 shows the results of the regression analysis that tested the relationship between diversity of Facebook friends and self-complexity. The patterns of significance for demographic variables (Block 1) and Facebook use (Block 2) remain similar to previous analyses for self-complexity. Specifically, in Block 1 non-Caucasian adolescents had higher self-complexity than

did Caucasian adolescents. And similar to previous analyses, more time spent on Facebook (Block 2) was negatively related to self-complexity. The diversity of Facebook friends was entered into Block 3 of the analysis and was not a significant predictor of self-complexity.

Next, the relationship between diversity of Facebook friends and self-concept clarity was tested. The results for this regression are displayed in Table 13. In Block 1, sex approached significance (p = .06). Specifically, males tended to have higher clarity than females. Neither age nor race was significant. In Block 2, none of the Facebook use variables significantly predicted self-concept clarity. In Block 3 of the analysis, Facebook friend diversity was a significant predictor of self-concept clarity and accounted for 2% of the variance of self-concept clarity. Specifically, Facebook friend diversity predicted higher self-concept clarity. Thus, Hypothesis 5 received partial support given that diversity of Facebook friends predicted higher self-concept clarity but not self-complexity.

Hypothesis 6. A seemingly important role of Facebook friends is that they can offer feedback to adolescents by commenting or "liking" the adolescent's posts. Hypothesis 6 predicted a positive relationship between the amount of feedback received on Facebook and adolescent's self-concept development. The amount of feedback was measured by adolescent reports of how often others "liked" their personal posts and how often others commented on their posts.

First, complexity was assessed. The results are displayed in Table 14. As shown, the findings for demographic features (Block 1) and Facebook use (Block 2) are consistent with previous analyses on self-complexity. Specifically, Caucasian adolescents and those adolescents who spent more time on Facebook had lower self-complexity. In Block 3 of the analysis, neither the amount of likes nor the number of comments significantly predicted adolescent self-complexity.

Next, clarity was analyzed. Results for this regression are found in Table 15. Similar to previous analyses, in Block 1, older adolescents had higher self-concept clarity than did younger adolescents. Sex of the adolescent approached significance such that females tended to have higher clarity scores than did males. In Block 2 the Facebook use variables were again not significantly related to self-concept clarity. In Block 3, the amount of feedback adolescents received on their Facebook profiles significantly predicted self-concept clarity. Specifically, the frequency that others "liked" the adolescent's posts predicted an increase in self-concept clarity, whereas the frequency that others left comments on the adolescent's posts predicted a decrease in self-concept clarity. Together these two variables accounted for 3% of the variance in self-concept clarity scores.

Given these mixed results, H6 was partially supported. There was no relationship between amount of feedback and self-complexity. However, feedback did relate to clarity, although in a nuanced way. The number of likes received predicted higher self-concept clarity whereas the number of comments received predicted lower clarity.

Self-Esteem

Research Question 4. Research Question 4 asked whether there is a relationship between Facebook use and self-esteem. To address this question, a hierarchical linear regression was conducted. Results for this analysis are in Table 16. Demographic variables were entered into Block 1 of the analysis. Sex of the adolescent predicted self-esteem. Males had higher self-esteem than females did. None of the Facebook use variables in Block 2 significantly predicted self-esteem. In other words, there was no relationship between time spent on Facebook, Facebook intensity, or the nature of Facebook use on the one hand and self-esteem on the other.

Hypothesis 7. Hypothesis 7 predicted that adolescents who receive positive feedback on Facebook will have higher self-esteem than will adolescents who do not receive positive

feedback. It is important to note that in general adolescents reported that they were accustomed to receiving positive feedback from Facebook friends. For instance, when asked whether people were mostly kind or unkind to them on Facebook, three in four (75%) adolescents reported that people were "mostly kind" to them. Conversely, only 2% reported that people were "mostly unkind" to them on Facebook. Eighteen percent of the adolescents responded to this item that "it depends" and the remaining 5% reported that they "don't know" whether people are mostly kind or unkind to them on Facebook. Moreover, an overwhelming majority of respondents (95%) reported that someone had been kind to them on Facebook within the past year. Meanwhile, only 18% of adolescents reported that someone had been cruel to them on Facebook within the past year.

To test Hypothesis 7, however, separate measures of feedback were used. First, two measures asked adolescents to rate the frequency that others "liked" their posts and the frequency that others commented on their Facebook page. A hierarchical linear regression was conducted to test the relationship between of the *amount* of feedback and self-esteem. The results of this regression are in Table 17. Block 1 of the analysis included the demographic variables. As with the previous analyses, males had higher self-esteem than females did. The Facebook use variables in Block 2 of the analyses were not significant. In Block 3, receiving a greater number of "likes" on posts was significantly related to higher self-esteem, whereas receiving more comments was not significantly related to self-esteem.

Next, the valence of the feedback received was examined. To assess valence, adolescents were asked to rate how often people were nice or kind to them on Facebook, and the other measure asked how people were cruel or mean to them on Facebook. Results testing the relationship between positive as well as negative feedback and self-esteem are displayed in Table 18. As can be seen, the patterns among the predictor variables are generally consistent with those

reported in Table 16. Male adolescents were more likely to report higher self-esteem than were female adolescents (Block 1). Once again, the Facebook use variables did not predict self-esteem (Block 2). In Block 3, receiving positive feedback was not significantly related to self-esteem. However, receiving negative feedback was significantly related to self-esteem; as might be expected, more negative feedback predicted lower self-esteem. Thus Hypothesis 7 was partially supported.

Results Study 2

Study 2 involves the content analysis of the actual Facebook sites of the participants (n = 204). In this section, I will first provide descriptive analyses of the sites themselves. Then I will test some of the relationships that were documented in Study 1. These additional analyses will shed light on whether results based on adolescents' self-reports of Facebook activity can be replicated by their actual behavior. Furthermore, those patterns that can be substantiated through this mixed- method design will be the most robust in my dissertation.

Before further exploring these relationships, this section will offer an overview of the coded data from the About section and the Timeline section of the adolescents' profiles.

The About Section

As previously mentioned, the About section of the profile is a space where Facebook users fill out information about the self. Adolescents can disclose information ranging from their favorite television shows and movies to more personal elements of the self, such as their religion or political ideology. They can also post cover and profile photos in this section. In addition, the total number of Facebook friends is listed in the About section. Using independent samples t-tests, all variables in the About section were analyzed for differences across sex (male, female), age (14-15, 16-18), and race (Caucasian, non-Caucasian). See Tables 19 through 21 for an overview of the results.

Self-disclosure. Coders assessed the types of information as well as how much information adolescents disclosed about the self in the About section of their profile. In general, there was tremendous variation in how rich the About section was, across the sample of 204 teens. For instance, users can write about themselves in an open-ended "About Me" section. In this study, a full 60% of the adolescents did not disclose anything in this space, leaving it blank. The remaining 40% of adolescents wrote an average of four sentences to describe themselves. The amount written in the About Me section varied by sex of the adolescent. On average, females wrote more significantly more in the About Me section than did males $t(199) = -2.80$, $p < .01$ (see Table 19). As a typical example, one 16-year-old male wrote in his About Me section, "I'm <name >, I go to <high school> and run cross country/track and do swimming." As another example, one 17-year-old male simply wrote, "That one kid" in his About Me section. In contrast, teen girls disclosed much more in this section. For instance, one 15-year-old female wrote:

> "I am the Uniqque one. I love to play around and go swimming. I am very out-going. Love to TEXT ;D. I am quirky. Friends and Family are my life! Love to read & write. Hangingg out with friends & taking pictures. I hope too make a LOT of friends on Facebook. Hope we can become friends. ♥"

As another illustration, a 17-year-old female wrote:

> "its more than a sport, it's a passion, red dirt and bruises are in fashion, they wind up the pitch, scrambling defense, intense parents in the stands, anxious coaches waiving their hands, the swing of the bat, the ball, the bases, the glove, this is softball! ♥"

Coders also assessed how many media preferences an adolescent disclosed. An overwhelming majority of adolescents revealed information about their favorite media. In fact, only 7 (4%) participants did not share any information about their favorite media. Adolescents

indicated their mass media preferences by “liking” the Facebook pages of bands, television shows, movies, books, and games as well as by indicating how many of these choices they have listened to, watched, read, or played. These actions were summed to create a score for media preferences. On average, teens “liked” or had engaged with 96 different media. For instance, one 14-year-old female “liked” 55 movies, 55 TV shows, 12 books, 101 musical artists, and 1 video game; she also indicated that she had watched 3 movies. Media preferences did not vary by the sex, age, or race of the adolescents.

Many teens also used the About section to connect to other social media sites. About a third (32%) of the participants had links to other social media platforms. In doing so, any post an adolescent shared on an outside social media platform would also be shared and made visible on his or her Facebook site. For instance, many adolescents linked their Instagram accounts to Facebook. If they posted a photo via Instagram, it would automatically be displayed on their Facebook site. There were no differences in the likelihood of linking to other social media as a function of the demographics of the adolescents.

Adolescents also disclosed varying amounts of contact information, such as an email address and an instant messaging screen name. On average, adolescents disclosed one piece of contact information. Older adolescents disclosed more contact information than did younger adolescents, $t(199) = -2.03$, $p < .05$. The most frequently disclosed contact information was a mobile cell phone number. Almost half (46%) of the adolescents shared this number. Older adolescents were more likely to disclose their mobile phone number than were younger adolescents, $t(199) = -2.86$, $p < .01$ (See Table 20).

Finally, coders assessed whether or not a teen shared his or her political ideology or religion. One out of five (20%) adolescents disclosed their political affiliation. Caucasian adolescents were more likely to disclose their political ideology than were non-Caucasian

adolescents, $t(199) = -2.67$, $p < .01$ (See Table 21). Meanwhile, one in three (34%) adolescents disclosed their religion. Older adolescents were more likely to share their religion than were their younger counterparts, $t(199) = -1.97$, $p = .05$ (See Table 20).

Photos. The nature of the adolescents' profile photos and cover photos were assessed. Only one participant had a "blank" Facebook profile photo, which features the default silhouette of a head. The other 200 adolescents had uploaded a personalized profile photo. A majority (59%) of the profile photos featured only the self, either consisting of a selfie (28%), a solo shot of the adolescent (29%), or a cartoon image of the self (2%). Many adolescents had a profile photo that was not self-focused. For instance, some teens featured a group of friends or family (27%), others had profile photos of logos (6%), celebrities (3%), or memes (3%). An independent samples t-test was used to assess whether having a self-focused profile photo (i.e., selfie, solo shot, cartoon self) varied across the demographics. No such differences were found.

The cover photo, which is larger than the profile photo, was also coded. Very few (12%) of the participants set their cover photo to the "blank" grey default image. Instead, the vast majority (88%) personalized their cover photo. The most popular choice of a cover photo featured a photograph of the adolescent among a group of friends or family. In fact, over one third (35%) of adolescents used a group shot for their cover photos. The second most popular cover photo was of a graphic image or logo. For instance, one 14-year-old girl had a cover photo that displayed the logos of the universities in the Big 10 conference, whereas one 15-year-old boy used a promotional image of the videogame Battlefield for his cover photo. Other adolescents (16%) had cover photos of landscapes. For instance, one 18-year-old female had a cover photo of a field covered in orange leaves, meanwhile, a 16-year-old female featured a sunset and some power lines in her cover photo. Interestingly, only 8% of the adolescents featured their self in the cover photo, using either a selfie (1%) or a solo shot of their self (7%).

Non-Caucasian adolescents were more likely to have a self-focused cover photo than were Caucasian adolescents, $t(199) = 2.55$, $p < .05$ (See Table 21). No other demographic differences were significant.

Beyond the profile photo and the cover photo, adolescents can also use Facebook to store personal photos. In total, adolescents had an average of 200 photos on their site. However, there was wide variance in the amount of photos accumulated on these site. Only three participants (2%) had no photos, whereas one teen had 1,570. Females had significantly more personal photos on their sites than did males, $t(199) = -3.29$, $p < .01$ (See Table 19). No other demographic differences emerged regarding personal photos stored on the sites.

Friends. Adolescents in this study had an average of 554 Facebook friends. The range was from zero friends (only one participant had no friends) to 3,696 Facebook friends. The number of friends differed as a function of all three demographic variables. Specifically, females had more friend connections on Facebook than did males, $t(199) = -2.19$, $p < .05$, older adolescents had more Facebook friends than did younger adolescents, $t(199) = -2.52$, $p < .05$, and non-Caucasian teens had more Facebook friends than did Caucasian teens, $t(199) = -2.67$, $p < .01$ (See Tables 19 through 21).

Groups and events. Adolescents could join Facebook groups that were hosted on the site. It should be noted that Facebook differentiates between public, "open" groups and private groups. The About section only displays open groups. Private group membership is not displayed on the profile. Thus, all figures reported here represent information about open group membership.

On average, adolescents joined five open groups. The range was from zero groups (20%) to 50 groups. Adolescents joined a wide variety of open Facebook groups. Examples included religious faith-based groups, a group about an online radio station, a Justin Bieber fan page, and

a group about local camping experiences. The amount of groups joined varied by the race of the participant. Non-Caucasian adolescents joined more groups than did Caucasian adolescents, $t(199) = 2.88$, $p < .01$. The amount of groups did not vary by age or sex of the adolescent.

Adolescents could also use the About section as a digital planner for events and activities. The About section displays up to eight events that an adolescent has recently attended or plans to attend in the future. On average, the adolescent in the sample displayed four events. The events included school functions such as dances, plays, and sports games, philanthropic events such as the Relay for Life or "Suicide Awareness Day," and other social occasions such as birthday parties and potlucks. The number of events varied by the age of the adolescent. Specifically older adolescents had more events than did younger adolescents, $t(199) = -4.32$, $p < .001$. The number of events did not vary by the sex or race of the participant.

The Timeline

The Timeline is the space on Facebook where users can post statuses and photos, and receive posts from Facebook friends. The Timeline is visible to both the user and his or her Facebook friends. The Timeline was coded for the frequency of posts made by the participant, the type of self-focused activities contained in those posts, and the feedback received by others on the posts. Using independent samples t-tests, all the variables on the Timeline were analyzed for differences by sex (male, female), age (14-15, 16-18), and race (Caucasian, non-Caucasian). See Tables 19 through 21 for a review of the statistically significant differences.

Frequency of posts. Posts are defined as individual actions initiated on Facebook by the user. Overall, adolescents averaged two posts during the week of observation. However, about half (55%) of the adolescents did not post anything during this time period. Those who did post averaged about five posts during the week, ranging from 1 post to 33 posts. There were no differences in the frequency of posting as a function of sex, age, or race of the adolescent.

Self-expression. The adolescent's posts were assessed for presence of three different types of personal or self-expression: expressions of experiences, opinions, or affect. A single post could be categorized as containing more than one type of self-expression. For instance, a post could express both an experience and an emotion.

Roughly one third of adolescents (30%) made self-expressions in their Facebook posts. Of the three types, adolescents were most likely to share an expression of an experience. One in five (20%) adolescents posted an expression of an experience. For instance, one 14-year-old male shared a picture of himself and his brother and wrote, "With the bro at the <school name> football game." Another example of an experience expression is from a 17-year-old male who wrote the following as a status update: "Ran my first ever 5K for breast cancer awareness and got 25th place!" Expressions of experience did not differ across the demographic variables.

Adolescents also shared their emotions or moods. Roughly 1 in 5 (18%) adolescents expressed affect via Facebook posts. Some of the emotions expressed were fairly intense and reflective of negative emotions. For instance, one 14-year-old female posted the following status: "Its hard to do something when you have no support." A 16-year-old male coped with his grief by posting, "I can't believe it's been two years, felt like yesterday we were goofin' around at Fall Fest. RIP James." Other adolescents expressed more positive emotions. For instance, after being admitted into a university, one 17-year-old girl exclaimed, "Just received my acceptance letter from <school>!!! Feeling excited!" Self-expressions of affect did vary by the sex of the adolescent. Specifically, females were more likely to post about their emotions and moods than were males, $t(199) = -1.96$, $p = .05$ (See Table 19). Affect expressions did not vary by age or race, however.

Roughly one in ten (13%) adolescents expressed an opinion on their Facebook posts. The opinions tended to be relatively brief and often related to something else being posted. For

instance, one 15-year-old female uploaded a video of a fox and stated, “This is so cute!” In another post, a 16-year-old male uploaded a picture featuring a TV program and wrote, “best show, no doubt.” Expressions of opinion did not vary by sex, age, or race of the individual.

Self-concept domains. Adolescent’s posts were coded for whether they mentioned any of the 10 domains of the adolescent self-concept described by Harter (1999). The 10 domains are scholastic competence, extracurricular activities, job, athletic competence, physical appearance, peer friendships, family relationships, romantic relationships, morality, and politics (Harter, 1999). An adolescent’s post could be coded as representing more than one domain. Nearly two thirds (64%) of adolescents did not reference any of the 10 domains in their posts, whereas one third (36%) did. On average, adolescents had one post that reflected a self-concept domain over the week of observation.

The most common domain mentioned in posts involved peer relationships. Almost one in five (18%) participants signaled this domain in their posts. For instance, one 16-year-old female posted a photo of herself standing next to three friends while dressed up in 1950s costumes, writing, “Grease outfits for homecoming week with my gals.” In another example of the peer relationships domain, a 17-year-old female posted a childhood photo of herself with two friends. She wrote, “Happy birthday to my first and very best friend. We were friends from the start and we will be until the end ♥ I love you so much and hope your 18th birthday is wondrous!” Posts involving peer relationships did not differ as a function of demographics.

Roughly 10% of the posts highlighted the physical appearance of the adolescent. Most often this was accomplished through posting selfies and other self-focused photos. For instance, over the course of five days, one 14-year-old girl posted a series of five selfies. These selfies featured various poses that accentuated parts of her body or clothing. For instance, one selfie was taken with the help of a mirror and featured the teen looking over her shoulder with her backside

facing the camera. She had altered the photo so that her shorts were colored bright yellow while the rest of her body and the background remained dark grey. This selfie was arranged such that the image was repeated three times in a row within the same photo frame. In another selfie, the teen looked into the camera and made a "kiss" face. Again, this image was duplicated twice within the same frame.

Likewise, another 14-year-old female featured a different selfie three times within the same frame. Each photo displayed a separate yet similar image of the teen wearing a sparkly, white dress and tiara. She wrote in that post, "yall can call me princess." The physical appearance domain varied by sex of the adolescent; females posted more about their physical appearance than did males, $t(199) = -2.17$, $p < .05$.

The family relationships domain was also a relatively popular domain. A total of 8% of adolescents posted something about families. For instance, one 18-year-old male tagged his parents in a photo that depicted a bustling concert venue. He wrote, "At the Sheryl Crow and Gary Allen concert with my parents. Won tickets from the news!" In a similar post, one 16-year-old boy shared a photo of himself with his family while they wore matching hockey jerseys and posed with the Stanley Cup. Family posts did not differ significantly as a function of demographic variables.

The other seven domains were mentioned far less often in the adolescents' posts. For instance 7% of adolescents mentioned their athletic competence. For example, one 16-year-old girl posted a photo of her powderpuff football team. Another 6% percent of the adolescents posted about their extra-curricular activities. In one example, a 15-year-old girl wrote a lengthy status about her theatre troop. Only 5% of the adolescents posted about romantic relationships. For instance one 16-year-old male wrote a status saying, "Had an amazing day with my amazing girlfriend glad we got to hang out all day." Similarly 5% of adolescents posted about issues of

morality such as religion. For instance, one 15-year-old boy posted an image that read, “If God shuts a door, stop banging on it! Trust that whatever is behind it is not meant for you.” Only two adolescents (1%) posted about their jobs. Similarly only two adolescents (1%) posted about politics. None of these seven domains differed by sex, age, or race.

Feedback. Feedback on the adolescent’s posts was measured in two ways. First, feedback was assessed in terms of the *number* of “likes” and comments the adolescents’ posts received. Adolescents received an average of 15 likes and 2 comments over the week of observation. Considering that the participants averaged two posts a week, this means the average post received roughly 7 likes and 1 comment. However, there was a broad range of the amount feedback received. In total, adolescents received anywhere from 0 to 418 likes and from 0 to 58 comments on their posts. The amount of feedback did not differ across demographics.

Second, coders assessed the *valence* of the comments left on the adolescents’ posts. Coders coded each comment that was directed at the participant as either negative or positive.

Very few (8%) of the adolescents received negative comments on their posts. For instance, one 14-year-old boy received the negative comment, “Yea well you annoy me too” in response to his status that read “Merp. You annoy me so much.” Another example of negative feedback was directed toward a 15-year-old female, where someone commented, “shut up <name> shut upppp.”

More often adolescents received positive comments from others. One in five (21%) teens received positive comments on their posts. The 14-year-old male participant from the previous example received positive comments such as, “Awwwwwh <3 I love you kid <3” and “lol this made my day! thanks (:.” Feedback sometimes offered support to the adolescent. For instance, one 16-year-old male wrote about his family problems in a status update and someone

commented, “U don’t deserve it! I’m sorry ;(you’re a great person don’t change.” The valence of feedback did not vary according to the adolescent’s sex, race, or age.

Taken together, the data from the content analysis show that adolescents are generally willing to share fairly personal information both on the About section of the profile and on the Timeline. Moreover, it appears that there are patterns of self-disclosure and self-expression that vary by the demographics of the adolescents. For instance, girls had more Facebook friends, shared more personal photos, and wrote more about the self in their profiles than did boys. They also were more likely to discuss their emotions and highlight their physical appearance in their posts (See Table 19). Age also played a role. Older adolescents had more Facebook friends and shared more personal photos than younger adolescents. Older teens were also more likely to disclose their religion and mobile phone numbers (See Table 20). And finally, a small number of differences emerged as a function of race. Non-Caucasian adolescents had more Facebook friends and were also more likely to have a self-focused cover photo compared to Caucasian adolescents. Caucasian teens were more likely to disclose their political ideology than were non-Caucasian teens.

This descriptive analysis illustrates the variety of information that teens post on Facebook. The same behavioral data can be used to further test some of the patterns that emerged from the self-report data in Study 1. I now turn to these analyses.

Relationship between Adolescent Posts and Identity Status

Study 1 documented that adolescents who are active engagers with Facebook are more likely to be in a high identity status compared to those who lurk on the site. This relationship can be further tested by examining the actual posting activity on teen sites. In Study 2, coders counted the number of times an adolescent posted to his or her Timeline over the one week period of observation.

A binary logistic regression was used to test whether the frequency of posting was related to identity status. As can be seen in Table 22, Block 1 included the demographic variables of age, race, and sex. None of these variables predicted identity status. In Block 2 the number of posts made by an adolescent significantly predicted identity status. Specifically, adolescents who posted more often were more likely to be in an advanced identity status than an emergent identity status. In fact, holding the demographic variables constant, there is a 10% increase in the odds of being in an advanced identity status for each additional post that was made over the course of the week.

Thus, as was the case in Study 1, active use of Facebook, as measured with actual Facebook behaviors, was predictive of adolescents' identity status. Therefore, Study 2 also supports Hypothesis 2.

Relationship between Facebook Activities and Identity Status

Study 1 found that adolescents who engaged in particular social activities on Facebook tended to be in an advanced identity status more often than their peers were. To further explore this trend, a binary logistic regression was conducted to test whether linking to Facebook groups and using the site to schedule events is related to an advanced identity status.

The logistic regression testing the relationship between using the site for social activities and identity status can be found in Table 23. In Block 1, none of the demographics predicted identity status. In Block 2, the frequency of posts was again predictive of an advanced identity status. In Block 3, neither events nor Facebook groups predicted identity status.

Thus, in regards to Research Question 1, there is no evidence from the behavioral data on the sites that teens who use Facebook to join groups and coordinate events are more likely to have an advanced identity status.

Relationship between Facebook Use and Self-Concept

Study 1 found some support for the relationship between Facebook use and self-concept development. Specifically, time spent on Facebook was significantly related to self-complexity. However, Facebook use was unrelated to the second measure of self-concept, clarity. To further test these patterns, hierarchical regression analyses were conducted using actual behaviors on the sites, in this case, the frequency of posting to the Timeline.

First, a hierarchical linear regression was run to test the relationship between frequency of posting to the Timeline and self-complexity. Results of this regression are displayed in Table 24. Similar to analyses in Study 1, race of the adolescent was related to self-complexity in Block 1. In particular, non-Caucasian adolescents had higher self-complexity than Caucasian adolescents did. No other demographic variables were significant. The frequency of posting was significantly related to self-complexity, such that adolescents who frequently posted on their sites had lower complexity than did adolescents who seldom posted. Posting frequency accounted for 4% of the variance in self-complexity scores.

A similar regression was run to test the relationship between posting frequency and self-concept clarity. Results of this analysis are in Table 25. In Block 1, sex and age approached significance. Female adolescents tended to have higher self-complexity scores than did males and older adolescents tended to have higher self-complexity scores than did their younger counterparts. In Block 2, posting frequency did not predict clarity.

Taken together, these analyses mirror the findings from Study 1. Specifically, those adolescents who self-reported that they spent a good deal of time on Facebook showed lower self-complexity. Now, in Study 2, teens' actual behavior on the sites substantiated this pattern such that posting was negatively related to self-complexity.

Relationship between Self-focused Activities and Self-Concept

Study 1 found evidence that engaging in self-focused activities, such as posting a status or personal photos, is related to self-concept development. Arguably there are many opportunities for adolescents to engage in self-focused activities on Facebook. In Study 2, the content analysis captured two types of self-focused activities: self-disclosure of personal information in the About section and posts of self-expression to the Timeline. It stands to reason that engaging in these self-focused activities will have a positive relationship with self-concept development.

Self-disclosure. As mentioned above, self-disclosure was coded as the quantity of personal information an adolescent shared about the self in the About section of the profile. Examples included disclosing one's religion or political affiliation.

First, a hierarchical linear regression was conducted to test whether there is a relationship between self-disclosure and self-complexity. The results of this analysis are displayed in Table 26. As with previous analyses, non-Caucasian adolescents had higher self-complexity than did Caucasian adolescents (Block 1). Frequency of posting to the Timeline was again significant, such that those who posted more often tended to have lower self-complexity than did those who posted less often (Block 2). Block 3 the total amount of self-disclosure on the adolescent's "About" section. Self-disclosure was unrelated to self-complexity.

Next clarity was analyzed. The results for this regression analysis can be found in Table 27. In Block 1, age approached significance. Specifically older adolescents tended to have higher clarity than did younger adolescents. Sex of the adolescent was also significantly related to clarity. Males had higher clarity than females did. In Block 2, frequency of posting to the Timeline did not predict clarity. Finally in Block 3, self-disclosure predicted self-concept clarity. The adolescents who revealed more personal information about their self on their About sections

had higher clarity than did those who disclosed less personal information. Self-disclosure accounted for 2% of the variance of adolescent's self-concept clarity.

Self-expression. As previously reviewed, self-expression was coded as posts made by the participants that expressed an opinion, affect, or an experience. Hierarchical linear regressions were used to assess the relationship between total self-expression on the posts and complexity as well as between self-expression and clarity. Results of these analyses are in Tables 28 and 29. As can be seen, total self-expression predicted neither complexity nor clarity.

Upon closer inspection of the data, it became apparent that the opinions being expressed on the posts were relatively shallow, rather than personal judgments about social issues or ideology. The opinions being expressed were most often simple statements that indicated approval of the other content in the post. For example, "I love this quote," or, "This is really cool!" Similarly, posts about experiences were also not very personal in nature. It stands to reason that the most intimate type of self-expression, namely expression of one's emotions, would be related to self-concept. Consequently, the data were re-analyzed to test the relationship between self-expression of emotions and self-concept.

First complexity was analyzed. Results of this analysis are displayed in Table 30. Similar to previous analyses, in Block 1 race significantly predicted complexity such that non-Caucasian adolescents had higher complexity scores than did Caucasian adolescents. Again, in Block 2 the frequency that adolescents posted to Facebook predicted complexity. As in previous analyses, the adolescents who posted more often had lower self-complexity than did those who posted less often. Self-expression of affect was added to Block 3 of the analysis. Self-expression of emotions and moods was not related to complexity.

Next, a hierarchical linear regression tested the relationship between self-expression of emotions and self-concept clarity. Results for this analysis can be viewed in Table 31. Age

approached significance in Block 1, such that older adolescents tended to have higher clarity (p = .06) than did younger adolescents. The frequency of adolescent posts was added in Block 2. This variable did not predict clarity. In Block 3, self-expression about affect was negatively related to self-concept clarity. The adolescents who expressed their moods and emotions more often on their posts had lower self-concept clarity. Self-expression contributed to 3% of the variance of self-concept clarity.

Taken together, the results from Study 2 show mixed support for Hypothesis 4, which predicted a positive relationship between self-focused activities and self-concept development. Study 1 documented that adolescents who self-reported that they frequently engage in self-focused activities have higher complexity and clarity than did adolescents who reported engaging in these activities less often. Study 2 has corroborated these results with evidence from observations of adolescents' actual posting behavior. Results from Study 2 show that self-disclosure and self-expression was related to self-concept development. Specifically, self-disclosure was related to an increase in self-concept clarity. Self-expression of emotions predicted a decrease in clarity but had no relationship with complexity. Given these varied results, H4 received partial support in Study 2.

Relationship between Feedback and Self-Esteem

Study 1 found that the feedback adolescents receive on Facebook is related to their self-esteem. Adolescents who self-reported receiving "cruel and mean" comments frequently had lower self-esteem than did those who reported rarely receiving such negative feedback. In Study 2, coders assessed the actual feedback adolescents received on their posts. Coders evaluated the number of positive and negative comments left for the adolescent, as well as the total number of likes and comments the posts accrued.

A hierarchical linear regression was conducted to test the relationship between the feedback received and self-esteem. Results can be found in Table 32. Demographics were entered into Block 1. As with previous analyses on self-esteem, males had higher self-esteem than did females. The frequency of posts made by the adolescent was entered into Block 2, and the total number of comments received on the posts was entered into Block 3. Neither of these two variables predicted self-esteem. In Block 4, the total number of positive comments received was unrelated to self-esteem. However, the total number of negative comments approached significance (p = .05). The adolescents who received more negative comments tended to have lower self-esteem than did those adolescents who did not receive as many negative comments.

The results from this analysis mirror those from Study 1. In Study 1, the adolescents who self-reported receiving more negative feedback had lower self-esteem. This finding was substantiated in Study 2 with evidence from the actual feedback received by adolescents. Specifically, Study 2 found that an increased frequency of receiving negative feedback was related to lower self-esteem.

Chapter 4

Discussion

The purpose of this dissertation was to assess the relationship between Facebook use on the one hand and adolescent identity and self-concept development on the other. A mixed method approach was used to explore these relationships. In Study 1, a survey asked teens to self-report about their various Facebook use patterns. The survey also measured adolescents' identity status, self-complexity, self-concept clarity, and self-esteem. Study 2 involved a content analysis of the Facebook sites of the survey participants. Observing actual behaviors on the sites provided rich information on how teens use Facebook: what types of information they disclose, how they express aspects of the self, and the kinds of feedback they receive. When combined, the results from Study 1 and Study 2 provide strong evidence that developmental markers of identity status and self-concept are linked to different usage patterns of Facebook. For a summary of the relationships found in this dissertation, please see Table 34.

Identity Development

Developing a sense of identity is a paramount activity that characterizes adolescence. Indeed, in his seminal work on the subject, Erikson (1959) defined adolescence as the normative climax of an individual's identity development. Much of this work on developing and crystalizing identity is done through a teens' interactions with others. And because adolescents spend so much time with social media, it stands to reason that the process of their identity formation may be occurring online.

In this dissertation, I advanced several predictions and research questions that linked Facebook use to identity development. Hypothesis 1 predicted that Facebook use would be related to an advanced identity status. This relationship was supported by the survey data. In particular, after controlling for the demographics of age, sex, and race, the amount of total time

that teens spent on Facebook was positively related to being in an advanced identity status. For the purposes of this dissertation, a teen with an advanced identity status could be either in the moratorium status or the achieved status. These advanced statuses share the common feature of identity *exploration*.

Teens in this current sample reported spending time on Facebook throughout the weekdays and weekends. They spent slightly more time using Facebook on weekends than on weekdays, $t(216) = -5.50$, $p < .001$. Regardless of the day, the most popular time of day to use Facebook was at night. A full three quarters (75%) of the sample reported spending time on Facebook after dinner but before bedtime. Some teens reported spending over 3 hours of time on Facebook during this evening period. The data from this dissertation suggest that Facebook use is a fairly regular part of the daily routine for many teens. This finding is consistent with recent national data that shows that Facebook is still the most frequently used SNS among teens despite the proliferation of multiple new social network sites in recent years (Lenhart, 2015).

Facebook use was also conceptualized as how attached one is to the site. The variable Facebook intensity has been used in previous research to tap how intensely people use the site (Ellison et al., 2007; Steinfield, Ellison, & Lampe, 2008). For the most part, Facebook intensity did not predict much with regards to an adolescent's sense of identity. Although Facebook time and intensity are correlated, it seems that Facebook intensity is truly a conceptually different variable than sheer amount of time spent on the site. Given its association with time spent on Facebook, including Facebook intensity as a control variable did help to reveal some of the patterns in the data.

Past research has shown that general use of Internet is related to teen identity status (e.g., Matsuba, 2006; Vybiral et al. 2004). The results of this study are the first of its kind to suggest that spending time specifically on Facebook is related to adolescent identity status development.

Facebook is ripe with opportunity for teens to communicate with others, and digitally "hang out" with friends and peers. By spending more time on the site teens have more chances to use the site to explore their identities.

As it turns out, what teenagers do on Facebook may be just as crucial as the overall time spent on the site. Users can actively engage with the site and its many features. However, users can also spend a lot of time lurking on Facebook, passively observing and reading other users' updates. Hypothesis 2 predicted that engaged users of Facebook would be in a more advanced identity status than those who lurk on the site. Indeed, results from Study 1 revealed that adolescents who self-reported being engaged Facebook users were more likely to be in an advanced status than were Facebook lurkers. Behavioral data from Study 2 further supported this hypothesis. Specifically, adolescents who posted personal information to their Timeline more often were more likely to be in an advanced identity status than were those who posted less frequently.

Together, the results from Study 1 and Study 2 substantiate the idea that Facebook is a space where adolescents can explore their identities, particularly by actively engaging with the site. The teens who immersed themselves on the site, by posting statuses, photos, and communicating with others are those teens whose identity statuses reflected exploration and analysis. The teens who were not heavy users of the site, as well as those who spent their time passively lurking on the site, were less likely to be in a stage of exploring and questioning of the self. This dissertation provides evidence that active engagement with the medium is just as important to the identity development process as total time spent on the site.

Given that engaged use of Facebook predicted identity status, Research Question 1 asked whether specific activities were related to an advanced identity status. Study 1 found that teens

who reportedly used Facebook for social coordination tended to be in a more advanced identity status.

Social coordination in this study involved two particular activities: communicating with Facebook groups and coordinating social events. As mentioned previously, users can join both private and public Facebook groups and some public groups have very high membership rates. Arguably, teens who communicate with such groups come in contact with a greater variety of people than is possible in face-to-face settings. Research shows that interaction with a diverse set of people in face-to-face settings can help adolescents develop their identities (e.g., Erikson, 1968; Kroger, 2003). The results of this dissertation extend this trend into the digital realm, indicating that adolescents who have more experiences with a broader group of individuals in a digital context may be more likely to have an advanced identity status.

Facebook can also be used to create and organize events. The idea that teens use new media technologies to organize their social lives is not new (boyd, 2013; Gardner & Davis, 2013). Adolescents interviewed by Gardner and Davis (2013) described how they liked to use new communication technologies, such as SNSs, to quickly disseminate information about an event to a large group of people. The results of this dissertation mirror this phenomenon. Nearly two thirds (63%) of the teens in the present study indicated that they used Facebook's event planning features.

No prior research that I could find has linked the social coordination of events on Facebook to adolescents' identity development. What might explain this pattern? Arguably, the digital RSVPs that accumulate on a teen's profile are a proxy for how much face-to-face socialization he or she is experiencing. Having a wide variety of social experiences has been shown to help foster adolescent's identity development (Akers et al., 1998; Erikson, 1968; Harter, 1999; Ianni, 1989). This dissertation provides evidence that using social network sites as

a tool to coordinate face-to-face social time may be pushing adolescents into a variety of social experiences, which ultimately helps the identity development process. Nevertheless, the data in Study 1 are correlational and it is also possible that the teens who have an advanced identity status are naturally more social in general, and thus use the Facebook events feature as a tool to plan their activities.

Although Study 1 found a link between social coordination and identity status, Study 2 did not. Observations of the actual sites revealed that connecting with public groups on Facebook and showcasing events on the profile was unrelated to teen identity status. However, the lack of a relationship in Study 2 may be due to limitations of the content analysis data. The screen capture process I used only captured public "open" groups and not private Facebook groups. Furthermore, the profile displays no more than eight events for each adolescent. Thus, teens may have been members of many more groups and may have been coordinating more events than I was able to capture in the content analysis. In the end, teens who self-reported that they use Facebook to coordinate offline experiences and promote face-to-face time with friends and family were more advanced in their identity status, even though the actual activities on their sites did not support this pattern.

Thus far, this dissertation has documented that spending time online may play an important role in the identity development process of teenagers. However, teens do not live in an online vacuum—they also spend time in face-to-face interaction. Moreover, teens often co-use communication technology with one another in face-to-face settings, essentially blending time spent face-to-face with time spent using social media (e.g., Pea et al., 2012). What is the identity development like for a teen who spends little time with peers, either in person or online, compared to a teen who is always with others, socializing online and offline?

Hypothesis 3 predicted that the adolescents who spend the most time in social situations, either on SNSs or face-to-face, would have a more developed identity status compared to those who do not socialize often. Results from Study 1 supported this hypothesis. Teens who spent a lot of time socializing online *and* offline were more likely to be in an advanced identity status than were asocial teens who did not socialize very much at all. Overall, the hypersocial teens (high in both face-to-face and online interaction) had the highest proportion of adolescents in the advanced identity status compared to all three other sociability types, although only the difference between this group and the asocial group (low in both face-to-face and online) was statistically significant. The social butterflies, who were high in face-to-face time but low in online interaction, also experienced a more developed identity than did the asocial adolescents.

Both social butterflies and hypersocial adolescents spent a great deal of time socializing in face-to-face situations. It appears, then, that the types of teens who experienced an advanced identity were those who spent a good deal of time socializing in person. It may be that in spite of the prevalence of online experiences, social interaction in face-to-face settings is still crucial for teenage development.

Interestingly, the plugged-in adolescents, who mostly socialized online, were no different in identity status compared to the asocial group in the sociability quadrant, further corroborating the idea that face-to-face experiences are fundamental. Nevertheless, the pattern of percentages shows that the plugged-in group is more in line with the social butterflies than with the asocial teens in terms of identity status. It is possible that with a larger sample size, this difference would have been significant. In other words, it may be that socialization online is better or healthier for identity development than no socialization whatsoever.

This dissertation supports the idea that social interaction is vital to the process of exploring and committing to one's identity (e.g., Cooley, 1902; Goffman, 1959). In particular,

symbolic interactionist scholars argue that during the identity formation process, a teen's identity must be reified and authenticated by others. Consequently, other people play a crucial role in the identity development process. The present study suggests that teens who spend the most time socializing face-to-face are the most advanced in their identity development, and that there is a modest boost for those who also interact heavily online. In contrast, teens who spend little time socializing with others, who are essentially online and offline loners, are the least advanced. In fact, the results from Hypothesis 3 support the premise that in terms of social interaction, the "rich get richer." The "rich get richer" theory suggests that people who are already comfortable in face-to-face social situations will excel in similar social situations online, and consequently reap the benefits of a "double dose" of socialization (Kraut et al., 2002; Valkenburg et al., 2005). It appears, then, that the hypersocial adolescents are experiencing an added boost to their identity development. Nonetheless, the data are cross-sectional in nature and it may also be that teens with the most advanced identities are more drawn to social situations online and offline.

Spending time and communicating with parents also plays a role in the identity development of teens (Erikson, 1968; Fulkerson et al., 2006). Research Question 2 asked whether parent-adolescent communication moderated the relationship between time spent on Facebook and identity status. Parent-adolescent communication took into account the quality of teen communication with the mother as well as the weekly frequency that the family ate dinner together. Results from Study 1 show that, indeed, parent-adolescent communication patterns did influence the relationship between time spent on Facebook and identity status. In particular, those teens who experienced frequent, positive interactions with parents showed the strongest relationship between time spent on Facebook and advanced identity. In contrast, teens who experienced infrequent, poor parent-adolescent communication showed no relationship between the amount of time spent on Facebook and an advanced identity status.

Why would strong, positive parental communication influence the relationship between time spent on Facebook and an advanced identity? Research supports that open and supportive parent-adolescent communication fosters a safe space for teens to explore their identities, whereas weak and problematic parent-adolescent communication can stifle identity development (Bhushan & Shirali, 1992; Campbell et al., 1984; Erikson, 1968). The teens who experienced positive and open communication with parents may be more likely to share their online experiences with parents. For instance, these teens may be more likely to be friends with their parents on Facebook. In support of this idea, teens in the current sample who reported positive parent-adolescent communication were significantly more likely to be Facebook friends with their mothers (see Table 33). These results occurred after controlling for the influence of demographics.

In addition to sharing Facebook experiences with their teens, parents who have more positive interactions with their adolescents may recognize and understand the importance of their teen spending social time connecting with friends via social network sites. In other words, the parents may be more lenient about teens spending time with screen media. Consequently, strong parent-adolescent communication may be a prerequisite for teens to fully embrace the social world of Facebook and other social media, and hence benefit from the time spent on identity exploration. Future research should address the role of strong parent-adolescent communication in parental attitudes towards teen screen time and unpack the nature of parent-adolescent communication on social network sites.

Collectively, the present results highlight the role that Facebook use may have on identity development. In this case, overall time spent on Facebook was predictive of a more developed identity, and the findings further indicate that the way in which teens use Facebook is critical in this process. Teens who actively engaged with Facebook were more likely to have an advanced

identity status than were teens who lurked on the site. In addition, particular activities were associated with an advanced identity status. Teens who focused their use of the site on social purposes had more developed identities than did teens who did not use Facebook for such social purposes. The findings also showed that teens who led rich social lives both online and offline displayed more advanced identity development compared to teens who lead a more solitary existence. And finally, strong communication with parents seems to play a pivotal role in the process. That is, teens who experienced frequent positive communication with parents experienced the strongest relationship between time spent on Facebook and an advanced identity status. Taken together, these results underscore the importance of Facebook use in the process of identity development. The teens who had the most developed identities actively used Facebook to explore their self and social connections with others.

Self-Concept

Another way to conceptualize teenage development is through changes to adolescent self-concept. Two indicators of self-concept development were measured in this dissertation: self-complexity and self-concept clarity. As mentioned above, self-complexity refers to how rich and multifaceted the self-concept is and clarity refers to how clear and unambiguous the self-concept is. Both measures are often used in the study of self-concept because they describe how the structure of the self-concept develops.

Research Question 3 asked whether Facebook use is related to the self-concept of adolescents. Results from Study 1 revealed that teen's self-reported amount of time spent on Facebook was negatively related to self-complexity, but that Facebook time was not related to self-concept clarity. Similarly, the behavioral data in Study 2 showed that more frequent posting to the Timeline was negatively related to self-complexity and unrelated to self-concept clarity.

There may be something about the Facebook site that explains why time and frequent posting were negatively related to self-complexity. Previous work on self-complexity and media consumption has found a negative relationship between time spent watching television and adolescents' self-complexity (Harrison, 2006). Harrison (2006) argued that the limited and uniform portrayals of characters on television may constrain the self-concepts of heavy adolescent consumers of those messages. Perhaps the features of Facebook similarly constrain the ways in which people present themselves on the site. Some scholars have argued that Facebook creates a "packaged" version of the self for tidy online presentation, and that the differences teens highlight about themselves are rather superficial due to the limited options for true self-expression (Gardner & Davis, 2013). When teens use Facebook, they do not get to decorate or organize their profile like they would on their own personal website or MySpace profile. It may be that the teens who are highly complex are frustrated by the lack of options to showcase their multifaceted self-concepts, and are thus not using this medium often.

The results show no relationship between self-concept clarity and time spent on Facebook or frequent posting to Facebook. Past research on the relationship between clarity and Internet use has revealed rather inconsistent relationships. Some findings report that Internet use is associated with a decrease in clarity (Israelashvili, Kim, & Bukobza, 2012; Matsuba, 2006). Meanwhile, Davis (2013) reported a positive relationship between Internet use and self-concept clarity. Given the ambiguity in past research it is not surprising that no clear relationship was found between Facebook use or posting frequency and self-concept clarity in the current study.

Perhaps more interesting than the relationship between time spent on Facebook and self-concept is the relationship between engaging in certain types of activities on Facebook and the developing self-concept. Hypothesis 4 predicted that teens who engage in self-focused activities on social network sites will have higher self-complexity and self-concept clarity. Self-focused

activity involves teens revealing information about who they are, posting status updates about activities or feelings, or posting photos. Results from both Study 1 and Study 2 support Hypothesis 4.

In Study 1, teens who self-reported posting frequent status updates tended to have higher self-complexity than did teens who were less frequent status posters. Those who often posted status updates reported sharing statuses about their health, emotions, and current activities. In doing so, they were sharing details about their life, consciously choosing to post personal information about the self. Although posting in general was negatively related to self-complexity, it appears that specifically posting a status about personal information was positively related to self-complexity. Creating a status update is a relatively flexible action to undertake on the site. An adolescent writing a status update can write about whatever he or she desires. It appears that specifically writing a status about one's internal state or experiences may help adolescents recognize the multifaceted and complex nature of their self-concepts. It could also be the case that adolescents who have the most complex sense of self are drawn to writing about their self via status updates.

The results from Study 1 also showed that teens who self-reported managing their photos on Facebook had higher self-concept clarity than did the teens who did not engage with photos as often. Managing photos entailed both posting photos and "un-tagging" the self from photos. By making mindful choices about what photos of their self were shared on one's site, one can argue that adolescents are organizing their self-presentation. On the one hand, teens who post a photo that features the self are declaring, "This is how I want to present myself to others." On the other hand, teens who un-tag their self from photos are rejecting a certain portrayal of the self, essentially stating, "That is not how I want to present myself to others." Each act of photo management, then, could be an act of clarifying the self-concept, and organizing the self into a

coherent and reliable portrayal. Thus, it may be that photo management helps teens to clarify their self-concept. However, it may also be that those teens who have the clearest sense of self also have the confidence to repeatedly showcase their clarity by posting a large number of photos on Facebook.

In addition to the self-report data in Study 1, the behavioral data from Study 2 support the idea that engaging in self-focused activities on Facebook relates to adolescent self-concept. The About Me section of teens' sites was coded for the amount of information disclosed, such as a one's political ideology, contact information, and favorite media. The results revealed that self-disclosure was not related to self-complexity, but it was related to self-concept clarity. In particular, adolescents who disclosed more information about the self had higher clarity than did the adolescents who disclosed less.

Sharing information about the self in the About section involves making a semi-permanent, conscious pronouncement about who one is. The information teens fill out on the profile stands as the record of their self, encompassing personal information about their religion, ideology, preferences, and all of their photos. It may be that the simple act of filling out the details of one's life may offer clarity to adolescents. Moreover, the product of the act of self-disclosure, the About section, is displayed in a single place, giving teens the opportunity to witness the self profiled as a clearly defined, holistic person. The information that is disclosed on the About section remains relatively inert, suggesting a level of stability of the self-concept. As such, organizing the self on the profile may lead to higher clarity. Nevertheless, the data in Study 2 are correlational, so it could be that the adolescents who are clearer and more certain about their self may choose to disclose more on the profile.

In addition to self-disclosure, the behavioral data from Study 2 revealed that adolescents' self-expression on their posts was related to their self-concept. The total amount of self-

expression on posts, including expressions of opinions, affect, and experiences, was not related to self-concept. However, when examined separately, the most personal and intimate type of self-expression – revealing one's emotions – was related to clarity, but not to complexity.

Adolescents who posted self-expressions of their emotions or moods had lower clarity than did their counterparts who posted less frequently about their emotions. Many teens who posted about affect had posts reflecting both their positive and their negative emotions. Posting about opposing emotional states may signal a lack of internal consistency to the teen. As previously mentioned, it is normative that teens have trouble integrating opposing self-aspects into one self-concept (Harter & Monsour, 1992). Consequently, posting self-expressions of affect may highlight the disjointed self-aspects of an individual, decreasing clarity. It could also be that low clarity individuals are more prone to expression of their emotions compared to high clarity individuals. Past research has shown that low clarity individuals experience chronic self-analysis and "affectively negative" self-ruminating thoughts (Campbell et al., 1996). Thus it may be that low clarity teens are using Facebook as an outlet to express their self-reflective experiences with their emotions.

Taken together, the results from Study 1 and Study 2 show support for Hypothesis 4. Specifically, there are certain self-focused activities that are related to the adolescent self-concept. The data suggest that posting status updates and photos, as well as disclosing information about the self and expressing emotions on the site, are all related to self-concept development. Uniquely, the present research has been able to link different types of personal, self-focused activities to specific markers of self-concept development.

Beyond the types of activities that adolescents carry out on Facebook, it is also important to explore the nature of the connections or friendships on Facebook in terms of self-concept development. Hypothesis 5 posited that there would be a positive relationship between the

diversity of teens' Facebook friends and their self-concept development. Study 1 found evidence of a positive relationship between diversity of network and self-concept clarity, but no relationship between diversity of network and self-complexity.

It stands to reason that self-concept clarity would be related to the diversity of a teen's friend network. Self-presentation on social network sites is unique because the audience online is not context-specific or differentiated by a particular setting (e.g., church, school) and role (e.g., the teen as athlete, the teen as a daughter). In other words, the context is "collapsed" (Marwick & boyd, 2010). A collapsed context means that all people from various aspects of a teen's life have simultaneous access to the teen's self-presentation at any given time. Thus, teens must manage their self-presentation, taking into account all types of audiences. Self-presentation in a collapsed context may be particularly difficult for adolescents who often imagine that everyone is paying attention to everything they do, a phenomenon Elkind (1967) described as the "imagined audience." Taken together, the imagined audience and the collapsed context of Facebook may be motivating teens to create a consistent and stable presentation of the self on Facebook. Consequently, the teens with the most diverse Facebook friend audiences have to work especially hard to post the most clear and reliable self-concepts.

Although adolescents' clarity is related to the diversity of Facebook friends, complexity had no relationship with Facebook friend diversity. One might expect that if a teen has Facebook friends from school, work, extracurricular clubs, and religious groups, the diversity across that network would require the establishment of a more varied and complex self-concept. However, this was not the case.

A diverse network of Facebook friends may function to provide an adolescent with multiple forms of feedback. Hypothesis 6 predicted a positive relationship between the amount of feedback received and teens' self-concept development. In Study 1, the frequency of likes and

comments received was unrelated to self-complexity. However, teens who reported receiving a lot of likes had higher clarity than did those teens who reportedly received fewer likes. Meanwhile, receiving many comments was negatively related to self-concept clarity such that teens who received more comments had lower clarity than did those who received less comments.

These results suggest that receiving feedback from others does not relate to how multifaceted and complex the teen's sense of self is. However, such feedback does seem to play a role in the clarity of the adolescent's self-concept. These results can be interpreted through the lens of the "microprocess" perspective of adolescent development, which posits that a teen's sense of self is established through interpersonal feedback received from family and peers (Kerpelman et al. 1997a, 1997b). More specifically, when adolescents receive feedback about their self they interpret it as being either congruent or incongruent with their self-presentation. If a teenager receives many likes from Facebook friends, it is akin to many nods of approval for the self that is being presented in the post. The likes received are acting as feedback that is easily identified as congruent with the self-presentation of the teen, and thus each like received may be strengthening the stability of the self-concept.

Receiving a comment on Facebook appears to function quite differently than receiving likes. Although the average post received only a couple of comments, many posts accrued several comments. It stands to reason that some of those comments would be congruent with an adolescent's self-presentation, while other comments may be incongruent with the adolescent's self presentation in the post. Receiving conflicting feedback (i.e., congruent and incongruent feedback on the same post) of any kind may be reducing the clarity of the teen's self-concept.

In sum, a few trends emerge from the results on the relationship between self-concept development and Facebook use. Time spent on Facebook and posting frequently was negatively

related to self-complexity. Teens who spent more time on Facebook, particularly those who posted more often had lower complexity than did those teens who spent less time on the site. Although posting in general was negatively related to complexity, posting status updates about emotions, health, and experiences was positively related to complexity of adolescents. It may be that the teens who are most complex find the flexible status update to be the best way to use Facebook to showcase their multifaceted self. Self-expression was not related to complexity.

Self-concept clarity was unrelated to general Facebook use. Neither time spent on Facebook nor frequency of posting was related to clarity of the self-concept. Clarity, however, was positively related to the diversity of an adolescent's Facebook friends. In general, higher diversity of Facebook friends was predictive of higher clarity. Clarity was also positively related to self-disclosure. The teens who had disclosed more information about the self in the About section of the profile had higher clarity than did those who disclosed less information. Self-expression about affect was negatively related to clarity such that teens who posted more often about their moods and emotions had lower clarity. Finally, teens' clarity was sensitive to the feedback received by others. Receiving more "likes" on posts predicted higher clarity. However, receiving more comments was related to lower clarity among teens.

Taken together, the results suggest that there are certain patterns of Facebook use that are related to the markers of self-concept development. In general, writing statuses, sharing photos, self-disclosing and expressing the self on the site were related to the adolescent self-concept.

Self-esteem

Finally, this dissertation explored the role of Facebook on self-esteem. Research Question 4 asked whether there was a relationship between amount of Facebook use and self-esteem. The results showed no relationship between time spent on Facebook and adolescents' self-esteem.

Past research has shown mixed results regarding the relationship between time spent online and self-esteem. For instance, some studies have shown that increased time spent on social media can be related to negative evaluation of the self and depression (e.g., O'Keefe & Clark, 2011). However, other research has shown a positive relationship between teen use of the internet and social self-esteem (Valkenburg & Peter, 2007). Given the lack of consensus in the literature, the lack of a relationship between Facebook use and self-esteem in this study is not unprecedented.

Perhaps more important to the self-esteem of adolescents is not the time spent on SNSs, but the feedback received by others while on the sites. Hypothesis 7 predicted that an adolescent's self-esteem may be more sensitive to the valence of the feedback adolescents received on Facebook. Study 1 and Study 2 supported this prediction. Study 1 found that adolescents' self-reports of receiving negative feedback predicted lower self-esteem. Study 2 substantiated this relationship using evidence from the actual feedback adolescents received on their posts. Specifically, Study 2 found that receiving negative feedback predicted lower self-esteem.

Neither Study 1 nor Study 2 found that positive feedback was related to self-esteem. The lack of a relationship between positive feedback and self-esteem may seem counterintuitive at first. However, adolescents reported that they frequently received positive feedback. It stands to reason that if receiving positive feedback is the norm and an expected response to posting something, the effect of receiving positive feedback may be diminished. Indeed, it was rare that adolescents received negative feedback from others. When it was present, it was related to self-esteem. If adolescents are accustomed to receiving positive feedback, the effect of the negative feedback may be most prominent on their self-esteem.

Demographic Differences

There were a few differences across the outcome and predictor variables used in this study according to the sex, age, and race of the adolescent.

The only outcome variable that differed by sex was self-esteem. Boys (M = 21.00) had higher self-esteem than did girls (M = 18.85), $t(223) = 2.72$, $p < .01$. Past research indicates that it is normative for teen boys to have higher self-esteem than teen girls (Harter, 2000). Males and females did not differ on the other outcome measures of self-concept clarity, complexity, identity status, or on other predictor measures such as time spent on Facebook or parent-adolescent communication. In general, the Facebook profiles of boys and girls revealed some sex differences (See Table 19). For instance, girls disclosed more information on their profiles than did boys, and girls were more likely to signal their physical appearance on their posts than were boys.

One outcome variable differed according to the age of the teenager. Older teens (M = 35.90) had higher self-concept clarity than did younger teens (M = 33.26), $t(224) = -2.21$, $p < .05$. Older and younger adolescents did not differ across the other outcome measures of self-complexity, identity status, self-esteem, or on other predictor measures such as time spent on Facebook or parent-adolescent communication. The profiles of the teens revealed that in general older teens disclosed more information on the site about themselves compared to younger teens (See Table 20).

Finally, only one outcome variable differed by race of the adolescent. Non-Caucasian adolescents (M = 7.70) had higher self-complexity than did Caucasian (M = 6.79) adolescents, $t(225) = 2.87$, $p < .01$. Caucasian and non-Caucasian teens did not differ across the other outcome measures of self-concept clarity, identity status, self-esteem, or on other predictor measures such as time spent on Facebook or parent-adolescent communication. There were

some slight differences across the profiles of Caucasian and non-Caucasian teens. For instance, non-Caucasian teens had more Facebook friends than did Caucasian teens (See Table 21).

Taken together, there were a handful of differences across the demographic of teens. For the most part, though, the adolescents did not vary widely from one another according to their sex, age, or race.

Limitations

As with any study, there are limitations to acknowledge. This study does not allow for casual relationships to be established because the data from Study 1 and Study 2 come from one point in time. Consequently, it cannot be known whether certain patterns of Facebook use cause development or whether the most developmentally advanced adolescents choose to use Facebook in different ways compared to less advanced adolescents.

Moreover, the data from Study 2 were observed for only one week. If that week did not represent a normal week of Facebook use, the data from Study 2 could be skewed. Yet, there is no reason to believe that the content analysis data do not represent a normal week. In fact, the data were collected over the course of one month, effectively spreading out the week-long period of observation across many weeks. Furthermore, there was nothing during the period of observation, such as a holiday or school closing, which would suggest an abnormal week.

Another limitation of the current study is tied to a measurement issue. In the current study self-complexity was measured as a count of the number of unique self-aspects reported by the participants. Previous research has utilized this method of evaluating self-complexity (e.g., Harrison, 2006). However, the original measure of self-complexity not only counted the number of self-aspects, but also measured the interrelatedness of those self-aspects (Linville, 1985). Producing an estimate of the interrelatedness of self-aspects involves an intricate card sorting task that was too cumbersome and time-consuming given the restrictions of working with over

200 teenagers in their schools. Moreover, the measure of interrelatedness has been criticized for not validly assessing the core conceptualization of self-complexity: the number of unique self-aspects (Markus & Wurf, 1987). Yet it could be that interrelatedness is important in the current context. One could speculate that the interrelatedness of self-aspects might be affected by Facebook use. Regardless, it is worth noting that the current measure of self-complexity is related to self-esteem (See Appendix E), mirroring the same relationship pattern revealed in previous studies (Linville, 1985; Linville, 1987; Steinberg, Pineles, Gardner, & Mineka, 2003).

Finally, the results of this dissertation do not come from a nationally representative sample, which limits the generalizability of the results. However, generalizability in the current study is not entirely limited because participants were recruited from two separate high schools that were over 200 miles apart from each other. Thus, the individuals in the sample may be more diverse compared to a sample of teens from the same school or town. Moreover, there is reason to believe that adolescents in the current sample are similar to adolescents in other parts of the country. For instance, results in the current study about the valence of Facebook feedback parallel results from a nationally representative study of teen's experiences of positive and negative feedback on social media (Lenhart et al., 2011).

Future Research

This dissertation is only a first step in understanding the relationship between social network site use and the development of adolescents' conceptions of their self and identity. First and foremost, longitudinal research is needed to parse out the causal effect of the relationships found. Is SNS use triggering identity development? Or are more developed individuals prone to specific SNS usage patterns? A longitudinal study that both observes teenagers' SNS behaviors, and takes measure of those individuals' identity status and self-concept would help establish the causal order of these relationships.

Second, the current study did not analyze the posts that other people leave for the adolescent. As several identity theorists have noted, other people play a critical role in authenticating the self-presentation and identity formation of adolescents. It may be that the posts that others leave for an adolescent are just as important to the development of the self as the posts that the adolescent creates.

Third, although Facebook remains the most used social network site among teens today (Lenhart, 2015), the landscape of social media platforms is ever evolving. Teens are increasingly adding more and more social media outlets into their daily routines. Some of these outlets function very differently from Facebook. For instance, SnapChat allows teens to send photos that completely disappear once they are opened by the receiver. This may allow for a very different, constantly changing, and ephemeral concept of the self to develop. Would identity development differ for a teen who primarily uses SnapChat versus one who mostly uses Facebook? Moreover, many teens do not dedicate themselves entirely to one social media outlet. Future research should also unpack the relationships between use of multiple social network sites and identity development.

Conclusions

This dissertation makes a unique contribution to the literature because it links data about actual Facebook activities to developmental markers of identity development and self-concept development. In part, these findings are due to the strength of the mixed-method approach of this dissertation. The survey data in Study 1 allowed me to measure developmental data such as adolescents' identity status, self-concept, and self-esteem. Because these variables are based largely on reported perceptions about the self, they could not be measured easily with a content analysis. The content analysis in Study 2 offered a descriptive richness that a survey could not. For instance, the content analysis was able to illustrate exactly what some adolescents talked

about on their Facebook pages and how they described their selves on their profiles. By going directly to the source of the information, the content analysis also offered details about the ways in which participants were using the site differently from one another. That is to say, the content analysis was able to capture the particular daily Facebook activities of each participant.

When combined, using both methods established a way to assess the relationship between adolescents' online and offline selves. To date, only three studies have successfully employed a mixed method approach to compare adults' online self with their offline self (Back et al., 2010; Buffardi & Campbell, 2008; Mehdizadeh, 2010). Yet no studies have used the mixed method approach with an adolescent sample. By using the two methods in tandem, this study is the first of its kind to assess the relationship between the adolescents' online social network site self-presentation and their offline self-concept and identity.

This results of this dissertation support the argument that use of social network sites is related to the identity and self-concept development of adolescents. Several patterns emerge from the data. Adolescents' own actions on Facebook are related to their identity development. The adolescents who spent the most time on Facebook were more likely to have an advanced identity status. Adolescents could spend a lot of time on the site but use it in different ways. Many adolescents lurked on the site, while others spent their time actively engaging the site by posting personal status updates, sharing web links, and posting photos of their self. The engaged users were more likely to have an advanced identity compared to individuals who lurked on the site. In addition, the number of posts adolescents made on the site was also predictive of being in an advanced identity status. These results show a clear pattern that increased time spent actively using Facebook is related to a more advanced identity.

Even among the active engaged users of Facebook there were differences across usage patterns that were related to identity status. The individuals who used Facebook for social

coordination tended to have an advanced identity. Past research has shown the importance of socialization on the process of identity development. Yet no research to date has made the connection that using social media to facilitate face-to-face time is related to identity development.

Face-to-face time with family and peers also plays a role in the relationship between Facebook use and identity development. Hypersocial adolescents, who socialized with Facebook and in face-to-face situations, seemed to reap the rewards of the double dose of socialization. Moreover, the adolescents with the most frequent and strong face-to-face communication with their parents had the strongest relationship between time spent on Facebook and advanced identity status. Together, these results underscore the importance that other people – both online and offline – have on the identity development of adolescents.

Self-concept development was also related to the actions adolescents took on Facebook. In particular, adolescents who frequently posted status updates had high self-complexity. Such teens indicated that they frequently posted about personal topics including their health, emotions, or current activities. Adolescents who were high in clarity also engaged in specific self-focused activities, such as managing their photos and disclosing more personal information on the profile. In general, it seems that the individuals who really put their self out there on the site had the most advanced self-concept.

Self-concept was also sensitive to the role that others played on Facebook. Specifically, individuals who were high in clarity tended to have a diverse group of Facebook friends. And more often than not, these diverse friends were interacting with the adolescents by frequently "liking" their posts. Adolescents who received more likes were high in clarity.

Finally, although self-esteem was not related to Facebook actions taken by the adolescents themselves, it was related to actions others take toward the adolescents. Self-esteem

was particularly responsive to the role of feedback provided by others on Facebook. Adolescents who received the most frequent negative feedback had the lowest self-esteem.

In conclusion, it is my hope that this research can educate parents, teachers, and even teens themselves about the role that social media can play in the identity development process of teens. The "storm and stress" that is often associated with adolescence can be a time filled with questions about the self, contemplating future selves, and emotional ups and downs. As teens work to solidify their identities, they may be drawn to spending time on social media, disclosing information about the self, posting photos of their self, and expressing their self on the sites. Parents and educators must keep in mind that social network sites like Facebook can serve as a useful tool for teens, helping them to recognize their self as a more unified entity that is both complex and clearly defined.

Tables and Figure

Table 1

The Sociability Quadrant (n=226)

	Offline Face-to-Face Communication	
Online Facebook Communication	Low	High
Low	Asocial n=73	Social Butterfly n=72
High	Plugged-In n=43	Hypersocial n=39

Table 2

Binary Logistic Regression Predicting the Relationship Between Facebook Use and Adolescent Identity Status (n=201)

Predictors	*B*(SE)	Wald (*df*)	*p*Value	Odds Ratio [95% CI]
Block 1				
Age	.25 (.15)	2.81 (1)	0.09	1.28 [.96 - 1.72]
Sex	-.02 (.34)	.00 (1)	0.96	.98 [.51 - 1.9]
Race	.02 (.37)	.00 (1)	0.96	1.02 [.50 - 2.09]
Block 2				
Time spent on FB	.06 (.03)	4.97 (1)	0.03	1.06 [1.00 - 1.12]
Facebook Intensity	-.04 (.04)	1.5 (1)	0.22	.96 [.89 - 1.03]

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) have been coded as 1 on 0-1 scales.

Table 3

Binary Logistic Regression Predicting the Relationship Between Engaged Facebook Use and Adolescent Identity Status (n=201)

Predictors	*B*(SE)	Wald (*df*)	*p*Value	Odds Ratio [95% CI]
Block 1				
Age	.21 (.35)	1.9 (1)	0.16	1.23 [.92 - 1.6]
Sex	.15 (.35)	.20 (1)	0.66	1.17 [.59 -2.29]
Race	.06 (.30)	.38 (1)	0.87	1.06 [.52 - 2.20]
Block 2				
Nature of FB use	.81 (.38)	3.4 (1)	0.03	2.26 [1.09 - 4.71]

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of FB Use (Engaged) have been coded as 1 on 0-1 scales.

Table 4

Factor Analysis of Facebook Activities

Factor	Eigenvalue	Variance	Loading	*M*	*SD*
Factor 1: Status Update	4.87	29.85			
Update a status about emotions or mood			.69	2.01	1.13
Update a status about what I am doing			.64	1.99	.95
Update a status to something about my health			.74	1.63	.83
Factor 2: Photos	1.68	10.49			
Upload a photo of myself			.76	2.60	1.04
Tag or un-tag photos of myself			.79	2.25	1.13
Factor 3: Messaging	1.44	9.03			
Chat with people using Facebook chat			.70	2.76	1.14
Send or receive private "email" messages			.77	2.28	1.19
Factor 4: Social Coordination	1.09	6.80			
Create or respond to event invitations			.86	2.24	1.18
Create or communicate with Facebook groups			.84	2.21	1.22
Total Variance		56.17			

Table 5

Binary Logistic Regression Predicting the Relationship Between Facebook Activities and Identity Status (N=201)

Predictors	*B*(SE)	Wald (*df*)	*p*Value	Odds Ratio [95% CI]
Step 1				
Age	.23 (.15)	2.20 (1)	0.14	1.26 [.93 - 1.72]
Sex	-.13 (.38)	.12 (1)	0.73	.88 [.42 - 1.85]
Race	.18 (.40)	.21 (1)	0.65	1.20 [.55 - 2.62]
Step 2				
Time spent on Facebook	.07 (.03)	6.02 (1)	0.01	1.07 [1.02 - 1.14]
Facebook Intensity	-.09 (.04)	4.57 (1)	0.03	.91 [.84 - .99]
Nature of FB use	.65 (.43)	2.26 (1)	0.13	1.92 [.82 - 4.48]
Step 3				
Status Update	.08 (.08)	.78 (1)	0.38	1.08 [.91 - 1.28]
Social Coordination	.16(.09)	3.22 (1)	0.07	1.18 [.99 - 1.41]
Messaging	.05 (.11)	.18 (1)	0.67	1.05 [.85 - 1.29]
Photos	-.15 (.12)	.42 (1)	0.19	.86 [.68 - 1.08]

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of FB Use (Engaged) have been coded on 0-1 scales.

Table 6

Percentage of Adolescents in High Identity Status as a Function of Sociability Quadrant (n=226)

Asocial	Social Butterfly	Plugged-In	Hypersocial
$8\%_{a}$	$28\%_{b}$	$26\%_{ab}$	$39\%_{b}$

Note. Tabled values represent the percentage of adolescents who were in a high identity status (i.e., moratorium or achieved). Percentages having no letter in common in their subscripts differ significantly at $p < .05$ by the Scheffeé procedure.

Table 7

Binary Logistic Regression Predicting the Relationship Between Parent-Adolescent Communication and Identity Status (n=201)

Predictors	*B*(SE)	Wald (*df*)	*p*Value	Odds Ratio [95% CI]
Block 1				
Age	.26 (.15)	2.84 (1)	0.09	1.30 [.96 - 1.75]
Sex	-.07 (.34)	.04 (1)	0.85	.93 [.46 - 1.89]
Caucasian	-0.2 (.39)	.15 (1)	0.7	.86 [.40 - 1.84]
Block 2				
Time spent on FB	.07 (.03)	4.96 (1)	0.03	1.07 [1.01 - 1.14]
Facebook Intensity	-.08 (.04)	3.73 (1)	0.05	.93 [.86 - 1.00]
Nature of FB use	.73 (.42)	.42 (1)	0.08	.48 [.21 - 1.10]
PAC	.02 (.01)	2.21 (1)	0.15	1.02 [.99 - 1.04]
Block 3				
PAC*Time Spent on FB	.00 (.00)	3.50 (1)	0.06	1.00 [1.00 - 1.00]

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of FB Use (Engaged) have been coded as 1 on 0-1 scales.

Table 8

Summary of Hierarchical Regression Analysis for Facebook Use Variables Predicting Adolescent's Self-Complexity (N=201)

	B	SE	β	ΔR^2
Block 1				
Age	-.02	.13	-.01	
Sex	.59	.31	0.13^{+}	
Race	-1.04	.33	-3.13**	.06**
Block 2				
Time spent on FB	-.05	.03	-.19*	
Facebook Intensity	-.01	.03	-.03	
Nature of FB use	.19	.39	.04	.05*

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of Facebook (Engaged) use were coded as 1 on 0-1 scales.

$^{+}p<.10$, $*p<.05$, $**p<.01$

Table 9

Summary of Hierarchical Regression Analysis for Facebook Use Variables Predicting Adolescent's Self-Concept Clarity (N=201)

	B	SE	β	ΔR^2
Block 1				
Age	1.10	.55	0.14*	
Sex	-2.11	1.30	-.11	
Race	-.86	1.38	-.04	$.03^{+}$
Block 2				
Time spent on FB	-.08	.11	-.07	
Facebook Intensity	-.13	.14	-.09	
Nature of FB use	1.78	1.62	.08	.02

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of Facebook (Engaged) use were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 10

Summary of Hierarchical Regression Analysis for Self-Focused Activities Predicting Adolescent's Self-Complexity (N=201)

	B	SE	β	ΔR^2
Block 1				
Age	-.01	.13	-.01	
Sex	.60	.33	.13	
Race	-.94	.34	-.20**	.06*
Block 2				
Time spent on FB	-.06	.03	-.21*	
Facebook Intensity	-.04	.04	-.11	
Nature of FB use	.44	.40	.08	.05*
Block 3				
Status Update	.24	.08	.15^{+}	
Social Coordination	.02	.08	.02	
Messaging	.04	.09	.04	
Photos	.09	.10	.07	.03

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of Facebook (Engaged) use were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 11

Summary of Hierarchical Regression Analysis for Self-Focused Activities Predicting Adolescent's Self-Concept Clarity (N=201)

	B	SE	β	ΔR^2
Block 1				
Age	1.10	.55	.14	
Sex	-2.78	1.37	-.15*	
Race	-1.12	1.43	-.06*	$.03^{+}$
Block 2				
Time spent on FB	-.04	.11	-.04	
Facebook Intensity	-.13	.15	-.09	
Nature of FB use	1.78	1.69	.08	.02
Block 3				
Status Update	-.50	.32	-.13	
Social Coordination	.37	.33	.09	
Messaging	-.45	.37	-.09	
Photos	.79	.40	.16*	.04

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of Facebook (Engaged) use were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 12

Summary of Hierarchical Regression Analysis for Facebook Friend Diversity Predicting Adolescent's Self-Complexity (N=201)

	B	SE	β	ΔR^2
Block 1				
Age	-.03	.13	-.02	
Sex	.58	.31	.13	
Race	-1.04	.33	-.22**	.06**
Block 2				
Time spent on FB	-.05	.03	-.19*	
Facebook Intensity	-.01	.03	-.19	
Nature of FB use	.20	.39	.04	.05*
Block 3				
FB friend diversity	.01	.04	.03	.00

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of Facebook (Engaged) use were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 13

Summary of Hierarchical Regression Analysis for Facebook Friend Diversity Predicting Adolescent's Self-Concept Clarity (N=201)

	B	SE	β	ΔR^2
Block 1				
Age	.87	.55	.11	
Sex	-2.39	1.29	$-.13^{+}$	
Race	-.78	1.37	-.04	$.03^{+}$
Block 2				
Time spent on FB	-.07	.11	-.06	
Facebook Intensity	-.19	.14	-.13	
Nature of FB use	-1.45	1.61	-.07	.02
Block 3				
FB Friend Diversity	.32	.15	.16*	.02*

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of Facebook (Engaged) use were coded as 1 on 0-1 scales.

$^{+}p<.10$, $*p<.05$, $**p<.01$

Table 14

Summary of Hierarchical Regression Analysis for Amount of Feedback Predicting Adolescent's Self-Complexity (N=200)

	B	SE	β	ΔR^2
Block 1				
Age	-.03	.13	-.01	
Sex	.57	.32	.13^{+}	
Race	-1.03	.34	-.21**	.06*
Block 2				
Time spent on FB	-.06	.03	-.19*	
Facebook Intensity	-.01	.04	-.03	
Nature of FB use	.22	.40	.04	.05*
Block 3				
Number of comments	.04	.22	.02	
Number of likes	.00	.21	.00	.00

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of Facebook (Engaged) use were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 15

Summary of Hierarchical Regression Analysis for Amount of Feedback Predicting Adolescent's Self-Concept Clarity (N=200)

	B	SE	β	ΔR^2
Block 1				
Age	1.09	.54	.14*	
Sex	-2.27	1.29	-.12$^+$	
Race	-.76	1.37	-.04	.03$^+$
Block 2				
Time spent on FB	-.07	.11	-.06	
Facebook Intensity	-.18	.14	-.13	
Nature of FB use	-2.00	1.64	-.09	.02
Block 3				
Number of comments	-1.80	.89	-.17*	
Number of likes	2.00	.85	.21*	.03*

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of Facebook (Engaged) use were coded as 1 on 0-1 scales.

$^+p<.10$, $^*p<.05$, $^{**}p<.01$

Table 16

Summary of Hierarchical Regression Analysis for Facebook Use Variables Predicting Adolescent's Self-Esteem (N=200)

	B	SE	β	ΔR^2
Block 1				
Age	.34	.37	.07	
Sex	-2.30	.87	-.19**	
Race	-.92	.93	-.07	.04^{+}
Block 2				
Time spent on FB	-.09	.08	-1.13	
Facebook Intensity	.06	.09	.07	
Nature of FB use	.86	1.08	.06	.01

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of Facebook (Engaged) use were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 17

Summary of Hierarchical Regression Analysis for Amount of Feedback Predicting Adolescent's Self-Esteem (n=199)

	B	SE	β	ΔR^2
Step 1				
Age	.36	.37	.07	
Sex	-2.41	.87	-.20**	
Race	-.85	.92	-.07	.04^{+}
Step 2				
Time spent on FB	-.08	.08	-.11	
Facebook Intensity	.00	.10	.00	
Nature of FB use	.96	1.10	.07	.01
Step 3				
Number of comments	-.58	.60	-.08	
Number of likes	1.35	.57	.21*	.03^{+}

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of Facebook (Engaged) use were coded as 1 on 0-1 scales.

$^{+}p<.10$, $*p<.05$, $**p<.01$

Table 18

Summary of Hierarchical Regression Analysis for Valence of Feedback Predicting Adolescent's Self-Esteem (N=200)

	B	SE	β	ΔR^2
Block 1				
Age	.35	.36	.07	
Sex	-2.35	.87	-.19**	
Race	-1.20	.91	-.09	.04^{+}
Block 2				
Time spent on FB	-.03	.08	-.04	
Facebook Intensity	.03	.09	.03	
Nature of FB use	.56	1.08	.04	.01
Block 3				
Kind feedback	.77	.50	.12	
Cruel feedback	-1.51	.51	-.22**	.06**

Note. All coefficients are from the full model. Sex (female), Race (Caucasian), and Nature of Facebook (Engaged) use were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 19

Differences in Self-Disclosure in the About Section and Timeline Posts According to Sex of the Adolescent (n=199)

		Males	Females	*p*Value
Number of friends	Mean	463	616	.030
	S.D.	422	531	
Number of photos	Mean	135	248	.001
	S.D.	165	280	
About me	Mean	0.77	2.00	.006
	S.D.	1.00	4.00	
Self-expression affect	Mean	0.17	0.38	.051
	S.D.	0.47	0.86	
Physical appearance domain	Mean	0.06	0.28	.031
	S.D.	0.24	0.87	

Note. Number of friends, Number of photos, and the About me variables were coded on the About section of the profile. Self-expression of affect and the physical appearance domain represent variables coded on the posts made by adolescents on their Timelines.

Table 20

Differences in Self-Disclosure in the About Section According to Age of the Adolescent (n=199)

		14-15	16-18	*p*Value
Number of friends	Mean	450	626	.013
	S.D.	442	517	
Number of photos	Mean	133	250	.001
	S.D.	155	283	
Contact information	Mean	0.75	1.08	.044
	S.D.	1.06	1.23	
Mobile phone number	Mean	0.37	0.60	.005
	S.D.	0.56	0.56	
Religion	Mean	0.27	0.40	.050
	S.D.	0.44	0.49	
Number of events	Mean	3.04	5.00	.000
	S.D.	3.10	3.21	

Note. Mobile phone number and Religion are coded on 0-1 scales.

Table 21

Differences in Self-Disclosure in the About Section According to Race of the Adolescent (n=199)

		Caucasian	Non-Caucasian	*p*Value
Number of friends	Mean	493	702	.006
	S.D.	411	636	
Politics	Mean	0.25	0.09	.008
	S.D.	0.44	0.28	
Self-focused cover photo	Mean	0.05	0.16	.012
	S.D.	0.22	0.37	
Number of groups	Mean	3.87	4.41	.004
	S.D.	4.57	3.15	

Note. Politics and Self-focused cover photo are coded on 0-1 scales.

Table 22

Binary Logistic Regression Predicting the Relationship Between Number of Adolescent Facebook Posts and Identity Status (n=200)

Predictors	*B*(SE)	Wald (*df*)	*p*Value	Odds Ratio [95% CI]
Block 1				
Age	.22 (.16)	1.8 (1)	0.18	1.24 [.90 - 1.70]
Sex	-.24 (.37)	.45 (1)	0.50	.73 [.38 -1.60]
Race	-.03 (.41)	.01 (1)	0.93	.97 [.44 - 2.14]
Block 2				
Number of posts	.09 (.03)	7.3 (1)	0.007	1.10 [1.03 - 1.17]

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) have been coded as 1 on 0-1 scales.

Table 23

Binary Logistic Regression Predicting the Relationship between Number of Events and Number of Groups on the About Section of the Profile and Identity Status (n=201)

Predictors	*B*(SE)	Wald (*df*)	*p*Value	Odds Ratio [95% CI]
Step 1				
Age	.20 (.17)	1.5 (1)	0.23	1.22 [.88 - 1.68]
Sex	-.24 (.37)	.43 (1)	0.51	.79 [.38 -1.61]
Race	.08(.41)	.04 (1)	0.84	.92 [.41 - 2.07]
Step 2				
Number of posts	.09 (.04)	7.02 (1)	0.01	1.1 [1.02 - 1.17]
Step 3				
Number of Events	.06 (.06)	1.24 (1)	0.27	1.07 [.95 - 1.19]
Number of Groups	-.02 (.03)	.37 (1)	0.54	.98 [.92 - 1.04]

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) have been coded as 1 on 0-1 scales.

Table 24

Summary of Hierarchical Regression Analysis for Number of Adolescent Facebook Posts Predicting Adolescent's Self-Complexity (N=201)

	B	SE	β	ΔR^2
Block 1				
Age	-.01	.13	.01	
Sex	.26	.31	.06	
Race	-.94	.34	-.19**	.05*
Block 2				
Number of posts	-.09	.03	-.19**	.04**

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 25

Summary of Hierarchical Regression Analysis for Number of Adolescent Facebook Posts Predicting Adolescent's Self-Concept Clarity (N=201)

	B	SE	β	ΔR^2
Block 1				
Age	1.09	.55	.14*	
Sex	-2.47	1.29	-.13^{+}	
Race	-1.02	1.41	-.05	.04^{+}
Block 2				
Number of posts	-.17	.14	-.09	.04

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 26

Summary of Hierarchical Regression Analysis for Self-Disclosure in Posts Predicting Adolescent's Self-Complexity (N=188)

	B	SE	β	ΔR^2
Step 1				
Age	.00	.14	.00	
Sex	.31	.32	.07	
Race	-.92	.35	-.19**	.05*
Step 2				
Number of posts	-.09	.03	-.19**	.04**
Step 3				
Self-disclosure	.00	.00	-.05	.00

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 27

Summary of Hierarchical Regression Analysis for Self-Disclosure in Posts Predicting Adolescent's Self-Concept Clarity (N=200)

	B	SE	β	ΔR^2
Step 1				
Age	1.06	.56	.14^{+}	
Sex	-2.92	1.31	-.16*	
Race	-1.49	1.42	-.08	.04*
Step 2				
Number of posts	-.19	.14	-.10	.01
Step 3				
Self-disclosure	.01	.00	.15*	.02*

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) were coded as 1 on 0-1 scales.

$^{+}p<.10$, $*p<.05$, $**p<.01$

Table 28

Summary of Hierarchical Regression Analysis for Total Self-Expression in Posts Predicting Adolescent's Self-Complexity (N=200)

	B	SE	β	ΔR^2
Block 1				
Age	1.07	.13	.00	
Sex	.24	.31	.05	
Race	-.97	.34	-.20**	.04*
Block 2				
Number of posts	-.08	.05	-.18	.04**
Block 3				
Total self-expression	-.01	.14	-.02	.00

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 29

Summary of Hierarchical Regression Analysis for Total Self-Expression in Posts Predicting Adolescent's Self-Concept Clarity (N=200)

	B	SE	β	ΔR^2
Block 1				
Age	1.12	.56	.14*	
Sex	-2.34	1.30	-.13$^+$	
Race	-1.06	1.42	-.05	.04$^+$
Block 2				
Number of posts	-.06	.22	-.03	.01
Block 3				
Total self-expression	-.34	.57	-.07	.00

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) were coded as 1 on 0-1 scales.

$^+p<.10$, $^*p<.05$, $^{**}p<.01$

Table 30

Summary of Hierarchical Regression Analysis for Self-Expression of Affect in Posts Predicting Adolescent's Self-Complexity (N=201)

	B	SE	β	ΔR^2
Step 1				
Age	-.01	.13	.00	
Sex	.19	.32	.04	
Race	-.92	.34	-.19**	.05*
Step 2				
Number of posts	-.14	.05	-.29**	.04**
Step 3				
Self-expression of affect	.40	.31	.13	.01

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 31

Summary of Hierarchical Regression Analysis for Self-Expression of Affect in Posts Predicting Adolescent's Self-Concept Clarity (N=201)

	B	SE	β	ΔR^2
Step 1				
Age	1.08	.55	$.14^{+}$	
Sex	-1.87	1.29	-.10	
Race	-1.23	1.35	-.06	$.04^{+}$
Step 2				
Number of posts	.20	.20	.10	.01
Step 3				
Self-expression of affect	-3.17	1.27	-.26*	.03*

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) were coded as 1 on 0-1 scales.

$^{+}p<.10$, $*p<.05$, $**p<.01$

Table 32

Summary of Hierarchical Regression Analysis for Negative and Positive Comments on Adolescent's Posts Predicting Adolescent's Self-Esteem (N=192)

	B	SE	β	ΔR^2
Block 1				
Age	.31	.37	.06	
Sex	-2.66	.85	-.22**	
Race	-.92	.94	-.07	.06*
Block 2				
Number of posts	-.17	.14	-.11	.04**
Block 3				
Total number of comments on posts	.03	.28	.01	.00
Block 4				
Negative comments on posts	-3.09	1.58	$-.07^{+}$	
Positive comments on posts	-.12	.42	-.03	.02

Note. Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) were coded as 1 on 0-1 scales.

$^{+}p<.10$, $^{*}p<.05$, $^{**}p<.01$

Table 33

Binary Logistic Regression Predicting Adolescent Facebook Friendship with Mother (n=215)

Predictors	*B*(SE)	Wald (*df*)	*p*Value	Odds Ratio [95% CI]
Step 1				
Age	.05 (.15)	.14 (1)	0.71	.95 [.71 - 1.26]
Sex	.16 (.34)	.22 (1)	0.64	.1.17 [.60 - 2.27]
Race	.78 (.35)	5.0 (1)	0.03	.2.19 [1.10 - 4.35]
Step 2				
PAC	.05 (.01)	16.7 (1)	0.00	1.04 [1.02 - 1.07]

Note. All coefficients are from the full model. Sex (female) and Race (Caucasian) were coded as 1 on 0-1 scales.

Table 34

Summary of Relationships Between Predictor and Outcome Variables

Study 1: Survey				
Identity Status	Time Spent on FB (+)	Engaged use of FB (+)	Social Coordination (+)	PAC x Time spent on FB (+)
Self-Complexity	Time spent on FB (-)	Status Update (+)		
Self-Concept Clarity	Photos (+)	FB friend diversity (+)	Number of likes (+)	Number of comments (-)
Self-Esteem	Number of likes (+)	Cruel feedback (-)		

Study 2: Content Analysis of Facebook Sites		
Identity Status	Number of posts (+)	
Self-Complexity	Number of posts (-)	
Self-Concept Clarity	Self-disclosure (+)	Self-expression of affect (-)
Self-Esteem	Negative comments on posts (-)	

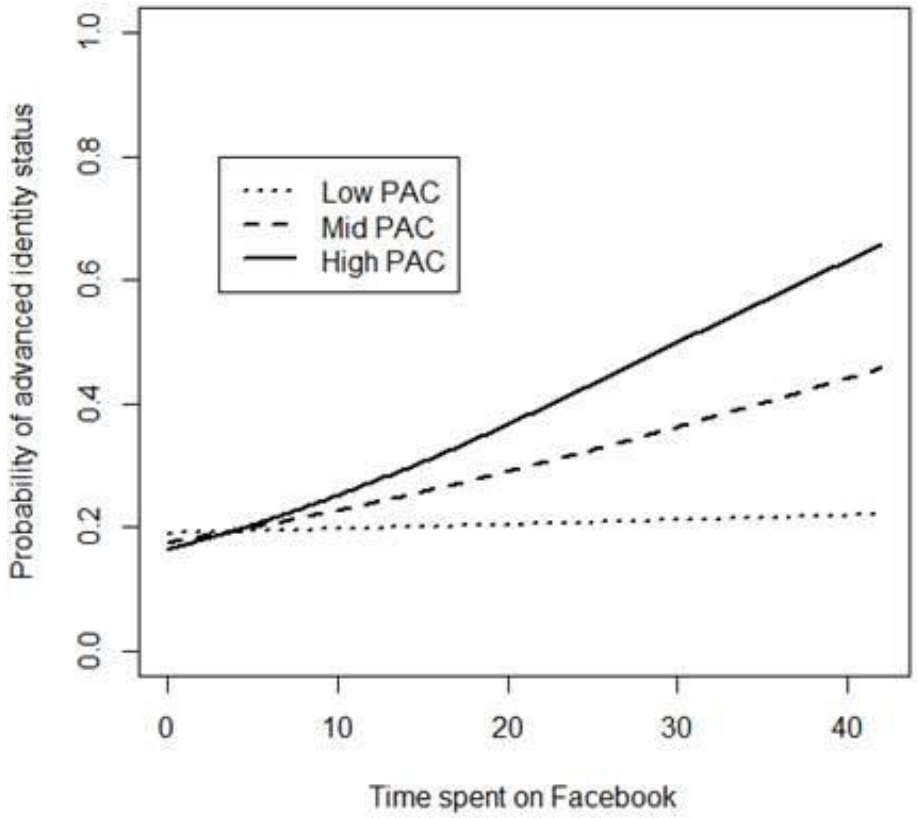

Figure 1. Parent-adolescent communication moderating the relationship between time spent on Facebook and the probability of being in an advanced identity status.

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Appendix A
Parental Consent Form

Dear Parent or Guardian:

We are writing to request permission for your high school student to participate in a research project at XXXXX High School. The research study is being conducted by Professor Barbara Wilson and doctoral candidate Kristin Drogos from the Department of Communication at the University of Illinois at Urbana-Champaign. The project focuses on young people's use of Facebook and how this technology may affect adolescent's sense of who they are. Principal XXX supports this project and its goals.

The study will be conducted at your child's school and consists of two parts. Both parts will take place during normal school hours. Please note that your high school student can still participate even if he or she does not have a Facebook account.

In the first part, high school students will **fill out a survey** about how they spend free time, about how often and in what ways they use Facebook, and about their friendship networks on the site. The survey will also ask students about their perceptions of who they are (i.e., self-concept) and about their self-esteem. The survey consists of items that have been written just for teenagers and will take about 30 minutes to complete. A sample copy of a blank survey will be kept on file at your child's school so that you may review it before your child participates in this project.

The second part of the study involves **observing high school students' Facebook pages**. We are interested in examining the different ways that teens use Facebook to describe who they are and what they care about. To do this, we will take a webpage capture of three parts of your child's Facebook page: the About Me section, the Timeline, and the Activity Log. These webpage captures are for research analysis and will only be observed by the researchers and trained research assistants. This part of the study should take no longer than 5 minutes.

Participation in this project is completely voluntary. If you sign this permission form, your teen will be asked if he or she would like to take part in this project. Only those students who want to participate will do so, and students can choose to participate in both parts of the study (i.e., questionnaire, webpage captures of Facebook page) or only one of them. In addition, students may stop participating at any time during the study without penalty. Any information provided by your child will remain strictly confidential. Only the researchers working directly with this project will have access to your teen's responses and this information will not become a part of your child's school record or any other public record.

Your teen's answers will be coded with a subject number rather than his or her name to insure confidentiality of survey responses. The Facebook webpage captures will also be saved using subject numbers rather than names. Before analyzing any data, we will block out the names of your child and anyone who communicates with your child on Facebook. Example webpage captures may be used in research publications and/or presentations, but no personal identifying information will be included. Please note that if there is any indication that a student wants to hurt herself/himself or others, or that a student is being abused, we will need to follow up and contact that student to make sure that she/he is okay.

We do not anticipate any risks associated with participating in this study beyond those risks that youth experience in a normal day at school or when using Facebook. We are asking teens questions about their everyday lives with technology and with Facebook. The results of the study will help researchers to better understand how technology influences teenagers' lives. By participating in the study, your teen may become more critical about time spent on Facebook and about how young people use this technology.

As a thank you for participation, your child will receive a $10 Amazon gift card for participating in this project. If you or your child elects to complete only one part of the study, your child will receive a $5 Amazon gift card.

Please feel free to contact Professor Barbara Wilson (217-333-6677, bjwilson@illinois.edu) or Kristin Drogos (217-333-2683, kdrogos@illinois.edu) if you would like to learn more about the study or have any questions now or at any time during the study. If you live outside the local calling area, please feel free to call collect. If you have any questions about your son's or daughter's rights as a participant in this study or any concerns or complaints, please contact the University of Illinois Institutional Review Board at 217-3333-2670 (collect calls will be accepted if you identify yourself as a research participant) or via email at irb@illinois.edu.

Sincerely,

Barbara J. Wilson, PhD., Professor
217-333-6677
bjwilson@illinois.edu

Kristin L. Drogos, M.A., Doctoral Candidate
217-333-2683
kdrogos@illinois.edu

PLEASE HAVE YOUR CHILD RETURN THIS FORM TO SCHOOL.

If you would like your child to participate in this study, please indicate which parts of the study, and print your teen's name in the space provided. **The second copy of the form is yours to keep.**

Please indicate which parts of the study you would like your child to participate in.

☐ I give permission for my teenager _____(print name of child) to participate in the **survey** described above.

☐ I give permission for my teenager _____(print name of child) to let the researchers **observe and take webpage captures** of his/her Facebook profile.

Child's school _____ Child's grade _____

Parent Signature _____ Date_____

Appendix B
Teen Assent Form

Hi! My name is Kristin Drogos and I am a graduate student in the Department of Communication at the University of Illinois at Urbana-Champaign. I am working on a research project and I'd like your help. I am conducting this research with Professor Barbara Wilson and we are interested in how teens like you use Facebook.

The study will take place in a designated room at your school during normal school hours. You do not have to have a Facebook profile to participate.

The study has two parts. In the first part, **you will fill out a 30 minute survey**. The survey asks questions about how you spend your free time, and about how often and in what ways you use Facebook. The survey also asks about how you perceive yourself and who you think you are as a person.

The second part of the study involves me **observing your Facebook profile**. I would like to look at three parts of your profile: the Activity Log, the Timeline, and the About section. We are interested in learning about the kinds of information that teens post on Facebook and how teens describe who they are on their Facebook profiles. No one will be able to look at these Facebook webpage captures besides the researchers. This part of the study should take no longer than 5 minutes.

All of your answers to the survey questions and all of the information on your Facebook profile will be **kept confidential**. This means that no one but the researchers will see the webpage captures of your Facebook profile or your survey answers. Your parents, your teachers, and your principal will not be able to see any of the information we gather. However, if there is any indication that a student wants to hurt herself/himself or others, or that a student is being abused, we will need to follow up and contact that student to make sure that she/he is okay.

Your participation in this project is voluntary. This means that you can decide whether or not you want to do this project. If you want to stop this project at any time, you can stop. If there are questions that you do not want to answer, you do not have to answer them. Again, all of your answers will remain confidential. In fact, your name won't be on your survey and we will block out your name and any of your friends' names before we analyze your Facebook webpage captures. We may use some sample webpage captures in research publications and/or presentations, but we will block out any personal identifying information before we do.

We do not anticipate any risks associated with participating in this study beyond those risks that you experience in a normal day at school or when using Facebook. By participating, you will be helping researchers who study adolescents and how they develop. The findings from this study will be shared with parents and teachers across the country so that adults can understand better how teens use technology in their everyday lives. By answering our questions you may even learn something about yourself and about how you use Facebook.
As a thank you, you will receive a $10.00 Amazon.com gift card for participating in the study. If you participate only in the survey or only in the profile webpage capture, then you will receive a

$5.00 Amazon.com gift card as a thank you. You will receive this when you have completed the study.

If you have any questions, you may ask them now, or you can contact me later (Kristin Drogos (217-333-2683, kdrogos@illinois.edu). You can also call or email Barbara Wilson (217-333-6677, bjwilson@illinois.edu). If you live outside the local calling area, feel free to call collect. If you have any questions about your rights as a participant in this study or any concerns or complaints, please contact the University of Illinois Institutional Review Board at 217-3333-2670 (collect calls will be accepted if you identify yourself as a research participant) or via email at irb@illinois.edu.

If you'd like to participate, please check the appropriate boxes. Please print and sign your name beneath that. **The second copy of the form is yours to keep.**

☐ I agree to participate in the **survey** portion of the study.

☐ I agree to let the researchers **observe and take webpage captures** of my Facebook profile.

Signature _____ Date_____

Print name_____ Grade _____

Phone number _____

Appendix C
Adolescent Survey

As you fill this out, remember there are no right or wrong answers. None of your answers will be linked back to you and no one will see any of these answers except the researchers.

OK. Let's get started…

To begin, I am interested in how YOU describe yourself. In the space below, please list the ways in which you describe yourself. Remember, this is about you and you are the one who is the expert! Fill in as many spots as you can, but if you can't think of ten words, that is OK. Think about yourself in terms of your identity. I'd like you to write a list of the words that describe yourself in terms of that identity. What kind of person are you? List some words that describe the person you think you actually are. Please put one item per line when you finish the following sentence….

I am….

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

These questions will ask you about how much you agree or disagree with some statements. This is all about you, and you are the expert! **<u>Please circle the number that best describes you.</u>**

	HOW MUCH DO YOU AGREE THAT…	**Strongly Disagree**	**Moderately Disagree**	**Disagree**	**Agree**	**Moderately Agree**	**Strongly Agree**
1	I haven't really considered politics. They just don't excite me that much.	1	2	3	4	5	6
2	I might have thought a lot about different things but there has never really been a decision since my parents said what they wanted.	1	2	3	4	5	6
3	When it comes to religion I just haven't found any that I'm really into for myself.	1	2	3	4	5	6
4	My parents had it decided a long time ago what I should go into and I'm following their plans.	1	2	3	4	5	6
5	There are so many different political parties and ideas. I can't decide which to follow until I figure it all out.	1	2	3	4	5	6
6	I don't give religion much thought and it doesn't bother me one way or the other.	1	2	3	4	5	6
7	I guess I'm pretty much like my parents when it comes to politics. I follow what they do in terms of voting and such.	1	2	3	4	5	6
8	I haven't chosen the occupation I really want to get into, but I'm working toward becoming a _____ until something better comes along.	1	2	3	4	5	6
9	A person's faith is unique to each individual. I've considered and reconsidered it myself and know what I can believe.	1	2	3	4	5	6
10	It took me a long time to decide but now I know for sure what direction to move in for a career.	1	2	3	4	5	6

	HOW MUCH DO YOU AGREE THAT…	Strongly Disagree	Moderately Disagree	Disagree	Agree	Moderately Agree	Strongly Agree
11	I really never was involved in politics enough to have to make a firm stand one way or the other.	1	2	3	4	5	6
12	I'm not so sure what religion means to me. I'd like to make up my mind but I'm not done looking yet.	1	2	3	4	5	6
13	I've thought my political beliefs through and realize I may or may not agree with many of my parent's beliefs.	1	2	3	4	5	6
14	It took me awhile to figure it out, but now I really know what I want for a career.	1	2	3	4	5	6
15	Religion is confusing to me right now. I keep changing my views on what is right and wrong for me.	1	2	3	4	5	6
16	I'm sure it will be pretty easy for me to change my occupational (career) goals when something better comes along.	1	2	3	4	5	6
17	My folks have always had their own political and moral beliefs about issues like abortion and mercy killing and I've always gone along accepting what they have.	1	2	3	4	5	6
18	I've gone through a period of serious questioning about faith and can now say I understand what I believe in as an individual.	1	2	3	4	5	6
19	I'm not sure about my political beliefs, but I'm trying to figure out what I can truly believe in.	1	2	3	4	5	6
20	I just can't decide how capable I am as a person and what jobs I'll be right for.	1	2	3	4	5	6
21	I attend the same church as my family has always attended. I've never really questioned why.	1	2	3	4	5	6

	HOW MUCH DO YOU AGREE THAT…	Strongly Disagree	Moderately Disagree	Disagree	Agree	Moderately Agree	Strongly Agree
22	I just can't decide what to do for an occupation. There are so many possibilities.	1	2	3	4	5	6
23	I've never really questioned my religion. If it's right for my parents it must be right for me.	1	2	3	4	5	6
24	Politics are something that I can never be too sure about because things change so fast. But I do think it's important to know what I believe in.	1	2	3	4	5	6

Please turn to the next page.

These next questions will ask you about how you feel about yourself.
<u>Please circle the answer that best describes you.</u>

	HOW MUCH DO YOU AGREE THAT…	**Strongly Disagree**	**Somewhat Disagree**	**Neither agree nor disagree**	**Somewhat Agree**	**Strongly Agree**
25	My beliefs about myself often conflict with one another.	1	2	3	4	5
26	On one day I might have one opinion about myself and on another day I might have a different opinion.	1	2	3	4	5
27	I spend a lot of time wondering about what kind of person I really am.	1	2	3	4	5
28	Sometimes I feel that I am not really the person that I appear to be.	1	2	3	4	5
29	When I think about the kind of person I have been in the past, I'm not sure what I was really like.	1	2	3	4	5
30	I seldom experience conflict between the different aspects of my personality.	1	2	3	4	5
31	Sometimes I think I know other people better than I know my own self.	1	2	3	4	5
32	My beliefs about myself seem to change very frequently.	1	2	3	4	5
33	If I were to describe my personality, my description might end up being different from one day to another day.	1	2	3	4	5
34	Even if I wanted to, I don't think I would tell someone what I am really like.	1	2	3	4	5
35	In general, I have a clear sense of who I am.	1	2	3	4	5
36	It is often hard for me to make up my mind about things because I don't really know what I want.	1	2	3	4	5

For this section, I am interested in how you feel about yourself generally. Please circle the number that best represents you.

	HOW MUCH DO YOU AGREE THAT…	**Strongly Disagree**	**Disagree**	**Agree**	**Strongly Agree**
37	On the whole, I am satisfied with myself.	1	2	3	4
38	At times, I think I am not good at all.	1	2	3	4
39	I feel that I have a number of good qualities.	1	2	3	4
40	I am able to do things as well as most other people.	1	2	3	4
41	I feel I do not have much to be proud of.	1	2	3	4
42	I certainly feel useless at times.	1	2	3	4
43	I feel that I'm a person of worth, at least on an equal plane with others.	1	2	3	4
44	I wish I could have more respect for myself.	1	2	3	4
45	All in all, I am inclined to feel that I am a failure.	1	2	3	4
46	I take a positive attitude toward myself.	1	2	3	4

Please turn to the next page.

We are going to switch gears for this next section. In this section, I am interested in how you talk to your mom and how your mom talks to you. <u>Please circle the answer that best describes you.</u>

	HOW MUCH DO YOU AGREE THAT…	**Strongly Disagree**	**Somewhat Disagree**	**Neither agree nor disagree**	**Somewhat Agree**	**Strongly Agree**
47	I can discus my beliefs with my mom without feeling restrained.	1	2	3	4	5
48	Sometimes I have trouble believing everything my mom tells me.	1	2	3	4	5
49	My mom is always a good listener.	1	2	3	4	5
50	I am sometimes afraid to ask my mom for what I want.	1	2	3	4	5
51	My mom has a tendency to say things to me which would be better left unsaid.	1	2	3	4	5
52	My mom can tell how I'm feeling without asking.	1	2	3	4	5
53	I am very satisfied with how my mom and I talk together.	1	2	3	4	5
54	If I were in trouble I could tell my mom.	1	2	3	4	5
55	I openly show affection to my mom.	1	2	3	4	5
56	When we are having a problem, I often give my mom the silent treatment.	1	2	3	4	5
57	I am careful about what I say to my mom.	1	2	3	4	5
58	When talking with my mom I have a tendency to say things that would be better left unsaid.	1	2	3	4	5
59	When I ask questions I get honest answers from my mom.	1	2	3	4	5
60	My mom tries to understand my point of view.	1	2	3	4	5

	HOW MUCH DO YOU AGREE THAT…	Strongly Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly Agree
61	There are topics I avoid discussing with my mom.	1	2	3	4	5
62	I find it very easy to for me to express all my true feelings to my mom.	1	2	3	4	5
63	My mom nags/bothers me.	1	2	3	4	5
64	My mom insults me when she is angry with me.	1	2	3	4	5
65	I don't think I can tell my mom how I really feel about some things.	1	2	3	4	5

66. In an average week, how many times do all of the people in your family who live with you eat dinner together?

0	1	2	3	4	5	6	7
None	Once	Twice	Three	Four	Five	Six	Seven

Good job answering those questions! Now we are going to move on to asking questions about social media and Facebook. We will ask questions about how often you use social media and Facebook and what you do when you are on those sites.

67. Do you currently have a Facebook account?

0	1
No	Yes

68. If no, why not? (Please check the option best describes you.)

_____1. I do not have regular computer access.
_____2. I do not have time.
_____3. My parents won't let me have an account.
_____4. I am not interested.
_____5. I have never heard of Facebook before.
_____6. Some other reason: _____

69. What about other social media? Please check which of following social media you use.

_____1. I have a **Twitter** account that I use.
_____2. I have an **Instagram** account that I use.
_____3. I have my own **YouTube** channel that I use to upload videos.
_____4. I have a **MySpace** account that I use.
_____5. I have a **Tumblr** account that I use.
_____6. I have a **SnapChat** account that I use.
_____7. Other: _____
_____8. I do not use any of these social media.

70. Of the options above, which social media outlet do you use the most? Write your answer below. (If you checked box 8 above, skip to question 79.)

_____

Now I want you to think about how much time you spend with social media. For the questions below, pick the social media that you listed in question 70. Think about how much time you spend with this social media during different parts of the day. This means you can be logged in to that social media on a phone, computer, or other device. You should count time when you are actively posting something and time when you are just looking at other people's information.

Please circle the option that best describes you.

On the average WEEKDAY how much total time do you spend on _____ (fill in answer from question 70)?

71	**Before school**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
72	**During school**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
73	**After school, but before dinner**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
74	**After dinner, but before bed**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours

What about on weekends?

On the average WEEKEND DAY how much total time do you spend on _____ (fill in answer from question 70)?								
75	**After you wake up, but before breakfast**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
76	**After breakfast, but before lunch**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
77	**After lunch, but before dinner**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
78	**After dinner, before bed**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours

In this next section, I am interested in how you use Facebook and how much time you spend using Facebook.

79. Please check all of the devices you use to log in to Facebook.
_____Computer/Laptop
_____Cell phone
_____Tablet (iPad, Kindle)
_____Other _____

80. Please check which device you use the most often to log in to Facebook?
_____Computer/Laptop
_____Cell phone
_____Tablet (iPad, Kindle, ChromeBook)
_____Other _____

*Now I want you to think about how much time you spend with specifically with **Facebook**. Think about how much time you spend with Facebook during different parts of the day. This means you can be logged in to Facebook on a phone, computer, or other device. You should count time when you are actively posting something and time when you are just looking at other people's information.*

Please circle the answer that best describes you.

On the average WEEKDAY how much total time do you spend on Facebook?								
81	**Before school**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
82	**During school**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
83	**After school, but before dinner**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
84	**After dinner, but before bed**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours

What about on the weekends?

On the average WEEKEND DAY how much total time do you spend on Facebook?								
85	**After you wake up, but before breakfast**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
86	**After breakfast, but before lunch**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
87	**After lunch, but before dinner**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours
88	**After dinner, before bed**	No time	1-10 mins	11-30 mins	31-60 mins	1-2 hours	2-3 hours	3+ hours

Please turn to the next page.

*Now I am interested in how many **"unique visits"** you make to Facebook. You may be wondering what a unique visit is. A unique visit happens every time you go on Facebook and use the site in some way. For instance, if you are doing your homework and you log on to Facebook and keep it in the background, you may look at the content of Facebook 3 times over an hour. This means that you have made 3 unique visits to Facebook, even though you only logged in once. It doesn't matter how you log in to Facebook, for instance logging on through a cell phone and computer both count. So, a **unique visit happens every time you use Facebook somehow, either on a computer or on a mobile device such as an iPad, or smart phone.***

Please circle the option that best describes you.

On the average *WEEK DAY* how many unique visits do you make to Facebook?							
89	**Before school**	0 (no visits)	1 to 5	6 to 10	11 to 15	16 to 25	25+
90	**During school**	0 (no visits)	1 to 5	6 to 10	11 to 15	16 to 25	25+
91	**After school, but before dinner**	0 (no visits)	1 to 5	6 to 10	11 to 15	16 to 25	25+
92	**After dinner, but before bed**	0 (no visits)	1 to 5	6 to 10	11 to 15	16 to 25	25+

What about on weekends?

On the average *WEEKEND DAY* how many unique visits do you make to Facebook?							
93	**After you wake up, but before breakfast**	0 (no visits)	1 to 5	6 to 10	11 to 15	16 to 25	25+
94	**After breakfast, but before lunch**	0 (no visits)	1 to 5	6 to 10	11 to 15	16 to 25	25+
95	**After lunch, but before dinner**	0 (no visits)	1 to 5	6 to 10	11 to 15	16 to 25	25+
96	**After dinner, before bed**	0 (no visits)	1 to 5	6 to 10	11 to 15	16 to 25	25+

<u>If you do not have a Facebook site, please skip to question 152.</u>

Otherwise, please circle the answer that best describes you.

97. About how many total Facebook friends do you have?

100 or less (0)	100 – 200 (1)	201-300 (2)	301-400 (3)	401-500 (4)	501-600 (5)	601-700 (6)	701-800 (7)	801-900 (8)	901-1000 (9)	1000+ (10)

98. About what percentage of your Facebook friends do you talk to face-to-face (in person) on a weekly basis?

Less than 10%	About 20%	About 30%	About 40%	About half (50%)	About 60%	About 70%	About 80%	About 90%	Almost all (100%)
1	2	3	4	5	6	7	8	9	10

99. Now think about all of your friends that you see face-to-face (in person) on a weekly basis. About what percentage of those friends do you talk to on Facebook?

Less than 10%	About 20%	About 30%	About 40%	About half (50%)	About 60%	About 70%	About 80%	About 90%	Almost all (100%)
1	2	3	4	5	6	7	8	9	10

100. When you are talking with your friends in person (face-to-face) how often do you refer to things you've already talked about on Facebook?

1	2	3	4	5	6
Never	Very Rarely	Rarely	Occasionally	Very Frequently	Always

101. When you are talking with your friends on Facebook, how often do you refer to things you've already talked about face-to-face (in person)?

1	2	3	4	5	6
Never	Very Rarely	Rarely	Occasionally	Very Frequently	Always

Here are just a few more questions about how Facebook is a part of your life. <u>Please circle the answer that best describes you.</u>

	HOW MUCH DO YOU AGREE THAT…	Strongly Disagree	Somewhat Disagree	Neither agree nor disagree	Somewhat Agree	Strongly Agree
102	Facebook is a part of my everyday activity.	1	2	3	4	5
103	I am proud to tell people I'm on Facebook.	1	2	3	4	5
104	Facebook has become a part of my daily routine.	1	2	3	4	5
105	I feel out of touch when I haven't logged onto Facebook for awhile.	1	2	3	4	5
106	I feel I am a part of the Facebook community.	1	2	3	4	5
107	I would be sorry if Facebook shut down.	1	2	3	4	5

You are more than half way done! Keep up the good work!

In this section, I am interested in what you do when you are on Facebook and what kinds of activities you do when you are on the site.

To begin, what is your favorite thing to do on when you are on Facebook?

_____

_____

<u>Circle the answer that best describes how you use Facebook.</u>

108. When I go on Facebook, I would describe myself as someone who is more of an observer than someone who interacts a lot with others on the site.

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Strongly Agree

109. When I go on Facebook, I would describe myself as someone who interacts with a lot of other people on the site rather than someone who reads and looks at what others are doing on the site.

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Strongly Agree

110. When I go on Facebook, I prefer to read and look at what other people are posting rather than respond to those posts.

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Strongly Agree

111. When I go on Facebook, I do not like to comment on other people's photos or posts.

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Strongly Agree

112. When I go on Facebook, I do not like to "like" other people's photos or posts.

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Strongly Agree

113. When I go on Facebook I prefer to comment on other people's photos or posts rather than just looking at or reading them

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Neither agree or disagree	Somewhat Agree	Strongly Agree

114. When I go on Facebook I prefer to "like" other people's photos or posts rather than just looking at or reading them.

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Neither agree or Disagree	Somewhat Agree	Strongly Agree

115. When I go on Facebook I prefer to interact and communicate with my Facebook friends rather than read or look at their photos or posts.

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Neither agree or Disagree	Somewhat Agree	Strongly Agree

116.
Young people use Facebook in different ways. Some like to post pictures and comments, and others like to read what other people post. Please select the option that describes what you do on Facebook most of the time.

1	2
I am an active Facebook user. I post a lot, comment, and "like" other people's posts or photos.	I am a Facebook observer. I read, look at, and take in what other people post without responding to them.

Next I am interested in how often you do certain things when you are on Facebook. So think about what you do and what you don't do when on Facebook. *Please circle the answer that best describes how often you do these activities.*

	HOW OFTEN DO YOU…	Never	Not much	Sometimes	Quite a bit	A whole lot
117	Chat with people using the Facebook chat	1	2	3	4	5
118	Send or receive private "email" messages	1	2	3	4	5
119	Comment on other people's posts, statuses, links, or photos	1	2	3	4	5
120	"Like" other people's statuses, links, or photos	1	2	3	4	5
121	Create or respond to event invitations	1	2	3	4	5
122	Create or communicate with Facebook groups	1	2	3	4	5
123	Update/change my status to reflect my emotions, or my current mood	1	2	3	4	5
124	Update/change my status to tell people what I am doing	1	2	3	4	5
125	Update/change my status to something about my health	1	2	3	4	5
126	Upload a photo of myself	1	2	3	4	5
127	Tag or untag photos of myself	1	2	3	4	5
128	Post "notes"	1	2	3	4	5

	HOW OFTEN DO YOU…	Never	Not much	Sometimes	Quite a bit	A whole lot
129	Post links to YouTube videos of myself	1	2	3	4	5
130	Post links to other websites that I find interesting	1	2	3	4	5
131	"Like" fan pages for TV shows, movies, or musical artists	1	2	3	4	5
132	Change/update information on my profile	1	2	3	4	5

Now I am interested in who your Facebook friends are. Please circle "1 - yes" if you have become Facebook friends with these types of people, or "0 - no" if you have not become Facebook friends with these types of people.

	ARE YOU FACEBOOK FRIENDS WITH...	No	Yes
133	Mom or step-mom	0	1
134	Dad or step-dad	0	1
135	Siblings or step-siblings	0	1
136	Cousins	0	1
137	Aunts or uncles	0	1
138	Grandparents	0	1
139	Adult neighbors	0	1
140	Classmates from school	0	1
141	Peers who don't go to your school	0	1
142	Religious groups (e.g., church, synagogue)	0	1
143	People from work	0	1
144	Fellow volunteers (charity or community work)	0	1

Now I want to know some information about how your friends and peers interact with you on Facebook. Please circle the option that best describes you.

145. How often do other people "like" or comment on or your Facebook posts, photos?

1	2	3	4	5
Never	Not Much	Sometimes	Quite a bit	A whole lot

146. How often do other people leave comments on your Facebook page?

1	2	3	4	5
Never	Not Much	Sometimes	Quite a bit	A whole lot

147. Overall, in your experience, are people mostly kind or mostly unkind to you on Facebook?

1	2	3	4
Mostly kind	Mostly unkind	Depends	Don't know

148. How often have you experienced people being cruel or mean to you on Facebook?

1	2	3	4	5
Never	Not Much	Sometimes	Quite a bit	A whole lot

149. In the past year has someone been cruel or mean to you on Facebook?

0	1
No	Yes

150. How often have you experienced people being nice or kind to you on Facebook?

1	2	3	4	5
Never	Not Much	Sometimes	Quite a bit	A whole lot

151. In the past year has someone been nice or kind to you on Facebook?

0	1
No	Yes

You are almost done!! In this last section, I am interested in what you do with your spare time.

152. Think about how you spend time with your friends. Please put an X next to the option that best describes how you hang out with your friends.

1. _____ I really don't hang out with friends too much, I stick to myself.
2. _____ I most often hang out with my friends in person, face-to-face.
3. _____ I most often hang out with my friends online, on Facebook, or other social media (e.g., Twitter, Instagram).
4. _____ I can't choose because I hang out with my friends the same amount of time on Facebook and in person.

I'd like you to think about what you do when you aren't in school. Think about how much time you spend on average engaging in the following activities.

153. Please list any sports teams you are on for school and outside of school. (If none, skip to question 154.)

_____

_____

153b. When you do play team sport with others, on average how much time do you spend doing so each day?

1	2	3	4	5	6
Less than 10 minutes	10-30 minutes	31-60 minutes	1-2 hours	2-3 hours	3 or more hours

154. Please list any clubs and extracurricular activities you participate in, like Scouts, band, drama, student council, etc. (If none, skip to question 155.)

_____

_____

154b. When you participate in these clubs and activities, on average how much time do you spend doing so each day?

1	2	3	4	5	6
Less than 10 minutes	10-30 minutes	31-60 minutes	1-2 hours	2-3 hours	3 or more hours

155. Please list any religious activities like going to a religious service, or a bible study or a youth group run by your church/synagogue/mosque you participate in. (If none, skip to question 156.)

_____

_____

155b. When you participate in these religious activities, on average how much time do you spend doing so each day?

1	2	3	4	5	6
Less than 10 minutes	10-30 minutes	31-60 minutes	1-2 hours	2-3 hours	3 or more hours

156. Please list any volunteering activities that you participate in. (If none, skip to question 157.)

_____

_____

156b. When you volunteer, on average how much time do you spend doing so each day?

1	2	3	4	5	6
Less than 10 minutes	10-30 minutes	31-60 minutes	1-2 hours	2-3 hours	3 or more hours

157. Please list any jobs you do outside the home for pay, such as working at a store, or babysitting. (If none, skip to question 158).

_____

_____

157b. When you go to your job, on average how much time do you spend doing so each day?

1	2	3	4	5	6
Less than 10 minutes	10-30 minutes	31-60 minutes	1-2 hours	2-3 hours	3 or more hours

158. Do you get to hang out with your friends in person outside of school (e.g., watching TV, going to the mall, going to movies)?

0	1
No	Yes

158a. **If yes**, on average how many days a week do you hang out with your friends in person outside of school?

1	2	3	4	5	6	7

158b. **If yes,** on an average day, how much time do you spend hanging out with your friends in person outside of school?

1	2	3	4	5	6
Less than 10 minutes	10-30 minutes	31-60 minutes	1-2 hours	2-3 hours	3 or more hours

Five more questions before you are done!

159. What is your sex?

0	1
Male	Female

159b. What age did you turn on your last birthday? _____ years.

160. What grade are you in?

1	2	3	4
9th grade	10th grade	11th grade	12th grade
Freshman	Sophomore	Junior	Senior

161. Which ethnic/racial group(s) do you consider yourself a part of? Check all that apply.

_____ White, Caucasian
_____ Black, African American
_____ Native American
_____ Hispanic or Latino
_____ Asian
_____ Native Hawaiian or Pacific Islander

162. What is the highest level of education obtained by your mother?

_____Dropped out of high school
_____High school diploma
_____Some college education
_____College degree
_____Graduate or professional degree
_____I don't know

163. What is the highest level of education obtained by your father?

_____Dropped out of high school
_____High school diploma
_____Some college education
_____College degree
_____Graduate or professional degree
_____I don't know

THANK YOU SO MUCH!!! Please return this survey to the researcher and she will help you finish up the study.

Appendix D
Reliability Coefficients for Coded Data

Variable	Measure	Coder Reliability
Self-Complexity	*Number of self aspects*	.98
Self-Disclosure: General	*Number of friends*	1.0
	About Me	1.0
	Religion	1.0
	Politics	1.0
Self-Disclosure: Contact Info	*Email address*	1.0
	Mobile phone number	.96
	Screen name	1.0
	Address	.92
	Website	.85
Self-Disclosure: Favorite Media	*Movies liked*	.98
	Movies watched	1.0
	TV liked	1.0
	TV watched	1.0
	Books liked	1.0
	Books read	1.0
	Games liked	1.0
	Games played	1.0
	Music liked	1.0
Self-Disclosure: Other Social Media	*Pinterest*	.89
	Instagram	.87
	Other social media outlets	.96
Self-Disclosure: Social Coordination	*Groups*	1.0
	Events	1.0
Posts	*Number of adolescent posts*	.99
Photos	*Number of stored photos*	1.0
	Profile photo	.89
	Cover photo	.89

Self-Expression	*Experience*	.97
	Affect	.98
	Opinion	.97
Self-Domains	*Scholastic competence*	.99
	Extracurricular activities	.99
	Job	.99
	Athletic competence	.98
	Physical appearance	.98
	Peer friendships	.94
	Family relationships	.98
	Romantic relationships	.99
	Morals	.99
	Politics	.99
Feedback	*Number of likes*	1.0
	Number of comments	.99
	Number of positive comments	.99
	Number of negative comments	.98

Note. The reliability coefficient for categorical data reliability was computed with Cohen's Kappa. The reliability coefficient for continuous data was computed with intraclass correlation coefficient.

Appendix E
Zero-Order Correlations for Outcome Variables (N = 227)

Variable	Identity Status	Self-Complexity	Self-Concept Clarity	Self-Esteem
Identity Status		.00	.15*	.13
Self-Complexity	.00		-.02	.17*
Self-Concept Clarity	.15*	-.02		.60**
Self-Esteem	.13	.17*	.60**	

Note. *$p < .05$, **$p < .01$