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Online Usage Among College Students: A Comparison of Online Gaming and Facebook Users

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ONLINE USAGE AMONG COLLEGE STUDENTS: A COMPARISON OF ONLINE GAMING AND FACEBOOK USERS

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ABSTRACT

ONLINE USAGE AMONG COLLEGE STUDENTS:

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The purpose of the present study is to investigate undergraduate students' patterns of use and perceived consequences of online gaming and Facebook. In Study 1, 38 male and 31 female participants completed measures examining online gaming usage, whereas Study 2 included 24 male and 75 female participants who were asked to complete measures examining Facebook usage. Study 1 results indicated online gaming participants identified time loss (78.3%) and playing longer than planned (91.3%) as common consequences of use. In contrast, Facebook users in Study 2 were less likely to report time loss (20.6%) but were more likely (91.8%) to visit the site longer than they had planned. Notably, they also reported a failure to use personal privacy settings (81.3%) as well as their willingness to allow individuals other than friends to access their Facebook pages (82.5%), despite that fact that 94.8% indicated they had lost an

educational, job, or relationship opportunity because of information others had posted on the study participant's Facebook page.

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I would like to take a moment to acknowledge the efforts of my family who have been there for me from the beginning. Also, I would like to acknowledge the efforts of Dr. Susan Lonborg, who has seen me through my academic career.

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CHAPTER I

INTRODUCTION

The effects online games have on individuals have been widely reported in the popular press in the past decade. Many players from around the world spend many hours playing online games. Research on this subject is becoming more substantial due to the new phenomenon of an online universe. In addition, online games are widely available with either new applications or newer versions of existing applications for the user to play. Also, the community of online gamers has expanded due to growth in the population of individuals who have access to the Internet. Wei (2007) examined this popularization of the Internet in 2007 and stated that "[t]he number of Internet users soared to 100 million in 2005, from 10 million in 2000" (p. 371). One population that exists on the Internet would be online gamers; these individuals play games that can only be accessed on the Internet. The newest expansion for the World of Warcraft (WOW) online game series was offered in November 13th 2014 with "11.5 million active subscribers" (Achab et al., 2011, p. 2).

Children are becoming more aware of and involved with computers at younger ages due to improvements in technology as well as Internet access. Programs have also been implemented in the educational system to teach children how to use basic programs on a computer. In addition, children are given keyboarding tests in school to help increase their speed and efficiency on computers. Children have been able to play games that teach them how to spell, type faster, do math, and even learn the periodic table of elements. Furthermore, children at these young ages have been able to access the home

computer to learn and play on the Internet. The early Internet generation of children is now working. The term for individuals born into the computer age from 1977 to 1997 is the “Net-Generation" (Chak & Leung, 2004, p. 561). Multiple businesses are tailoring their hiring processes around individuals with computer training rather than seeking individuals who could work on a factory line assembling parts. Furthermore, professional communication has been expedited by the Internet, rather than relying on traditional telephone phone systems. Text messaging and emails facilitate daily communication for individuals all over the world. Today, many individuals rely on use of current technology to aid in their daily life. Consequently, individuals often feel pressed to try to keep up with the newest versions of digital products. For example, America Online (AOL) has come out with more than eight updates to the program that subscribers download to run on their computer. This updating of software and program content is similar to updates that take place with multiple online games, a recreational tool used by millions.

In addition to the business use of computer technology, there are recreational uses of the online universe for millions of subscribers who seek adventure day to day in Massive Multiplayer Online Role Playing Games (MMORPGS). Games such WOW are MMORPGS that have millions of game users—known as subscribers--who log on to play for multiple hours at one sitting. Some MMORPGS charge a monthly fee for subscribers to continue to play their games, whereas other online games sell the program software and allow the user a free online game play subscription.

With the increasing popularity and availability of games that have no monthly fee, Facebook has become a common market for these online game applications. For

example, Farmville is a Facebook application that allows subscribers the ability to do things such as create a farm and tend to its needs. These application tools allow the user to play games continuously from their computers or smart phones, as well as to save information they may have added to the game.

The common subscribers to these online games are males and females whose play time on these games can average 22 hours weekly (Yee, Bailenson, Urbanek, Chang, & Merget, 2007), depending on factors such as accessibility to the Internet. The reasons subscribers play these online games vary widely. For example, some individuals seek entertainment, while others gain a sense of achievement. Additionally, some players enjoy having an anonymous, online conversations where both parties are free to express their opinions. While researchers show interest in online game use for many different reasons, Brack et al. (2013) stated that "[o]ne reason for professionals to examine MMORPGs is that given the growing numbers of players nationally, many of the people coming for mental health services may be playing these games" (p. 25). As such, the primary purpose of the current study was to compare college students' patterns of use of traditional online games such as MMORPGS and social networking sites such as Facebook.

CHAPTER II

LITERATURE REVIEW

This chapter reviews the research literature related to reasons for Internet use, excessive Internet use, online gaming behavior, and patterns of Facebook use. Those studies describing the patterns and consequences associated with excessive use of online games and social networks are of particular interest.

Patterns of Internet Use

Not surprisingly, online gaming is only one of many forms of Internet use. For instance, the Internet can be used for communication purposes or to gather information needed for personal or work related tasks. Beutel et al. (2011) investigated Internet uses in a German population to better understand how individuals (a) used the Internet in their leisure time, (b) which applications were being used, and (c) which risk factors for problematic use of the Internet could be identified. Study participants included 1,401 women and 1,111 men ranging in age from 14 to 94 years. Participant households were selected by a random route procedure; the individual in each household asked to participate in the face-to-face interview was chosen at random as well. Questions inquired about participants' leisure time use in terms of frequency, average hours of use, what the Internet was being used for, and the perceived negative consequence of their Internet use. In addition, the researchers administered the two-item modified Cambridge Depersonalization Scale (CDS-2), which measures clinical depersonalization. Participants also completed the 7-item Hospital Anxiety and Depression Scale (HADS), designed to assess anxiety and depression. Results indicated that 1,381 participants used

the Internet for their leisure time, 1,094 did not use the Internet, 527 individuals used the Internet for both leisure and work-related needs, and 36 individuals only used the Internet for work-related tasks. Some of the Internet uses identified by participants included email, shopping, chatting, and searching for information. With regards to the negative effects of the Internet, the authors report that 129 individuals each reported at least one occurrence of their neglect of recreational activities, friends, family, or work. Taken together, these suggest a need further research on the potential negative effects of Internet use. Understanding problematic Internet use may also require examination of the reasons for individuals' online activities. One such activity is online gaming.

Online Gaming

Online games have been growing in both sales and in the number of individuals playing these games worldwide. These games have found their way into homes in the United States, Canada, Asia, Australia, and across Europe; in fact, many individuals living with family members, roommates, or significant others play the same online games. One area of online gaming research examines the behavioral and psychological correlates or effects of such games.

For example, individuals who play MMORPGs can differ in personality. A person could seek to extract revenge in the game for struggles he or she is going through in the real world outside of the game. The wallflower can seek to spread his or her wings and soar over the vast lands these games contain, or the individual who feels alone at his or her school can find friends to socialize with. Still others may play online games to escape the everyday problems in their lives.

Most MMORPGS have different systems for questing and gaining experience in the game. For example, WOW allows an individual to level up by doing quests or by simply killing monsters in the surrounding areas. The phrase “DING,” typed out in the game, indicates that the individual has gone up a level or raised their abilities in a skill or profession they are working towards mastering. Also, the player announces this feeling of joy to surrounding characters or to friends in order to gain some form of praise from those informed of the other player’s accomplishment. The feeling of accomplishment for finishing a quest in the game might be compared to finishing a term paper because the individual feels that all the hard work has paid off. Furthermore, a better understanding of what players experience while using these types of games could offer some insight into why users play online games.

In each of two studies, Wan and Chiou (2007) surveyed Taiwanese adolescents to investigate what motivates them to play online games. Their first study examined the motivations of those individuals who were addicted to gaming versus individuals who were not addicted to playing these games. In addition, players' intrinsic and extrinsic motivations were examined to better understand individuals' motivation to engage in online gaming. For example, the researchers discussed the roles of rewards and leveling up to offer insight into what users can gain from playing online games. These types of rewards can attract players to the game in that “[o]nline games offer many extrinsic rewards, such as money, fame, and power” (Wan & Chiou, 2007, p. 181). Wan and Chiou (2007) also wanted to the role of factors such as expectation, relevance, tangibility, and contingency in motivating the users of online games. In this first study, researchers asked

a sample of 416 adolescent participants to take the Online Gaming Addiction Scale for adolescents in Taiwan (OAST) which uses a 4-point scale for responding to 29 items; in addition, four subscales aided in classifying participants as either addicts or non-addicts. The OAST was modified from the Internet Addiction Scale for high schoolers in Taiwan (IAST) created by Lin and Tsai (1999). The Online Gaming Motivation Scale (OMS) was used to collect data about participants' intrinsic and extrinsic motivations for online gaming. Results indicated that individuals could be placed into either the addictive group or non-addictive group using cutoff scores agreed upon by the researchers. In addition, participants that were classified as addicts had higher intrinsic motivation scores whereas the non-addicts had higher extrinsic motivation scores.

In their second study, Wan and Chiou's (2007) wanted to "examine four critical factors (expectancy, relevance, tangibility, and contingency) that would determine whether extrinsic motivators undermine intrinsic motivation" (p. 186). Participants in a sample of 222 MMORPG players were given two contrasting scenarios involving rewards being given in a hypothetical situation. Results indicated that when expectancy, relevance, tangibility, and contingency were placed at a low setting, participants' intrinsic motivation to play was higher than their extrinsic motivation. The authors suggest that the motivation to play these online games can be affected by factors such as a loot structure that can be manipulated by a game's authors to make a reward seem that much sweeter when it is obtained. These low drop rates in rewards can subsequently require large investments of player time.

One potential negative aspect of online gaming involves how individuals can become so absorbed into the fantasy environment of the game that it causes problems in their lives. Cole and Hooley (2013) examined anxiety and absorption in Problematic Internet Use (PIU) gamers who played massive-multiplayer online games (MMOs). The researchers also wanted to identify differences between individuals with high or low levels of PIU. They hypothesized that individuals with higher PIU scores would have higher scores on state, trait, and social anxiety. In addition, they predicted that, in contrast to players with lower PIU scores, higher PIU-scoring individuals would display low extroversion and high neuroticism, and would identify social communication as a reason for playing MMOs. Absorption was also measured in order to investigate whether higher PIU scorers would also demonstrate higher levels of absorption. Their sample consisted of 163 participants recruited through Craigslist and online gaming forums. To be included in the sample, participants had to be adults who were either current MMO gamers or past MMO gamers who had played at least two hours a day. Measures were administered to collect demographic information and to assess PIU level, anxiety, absorption, personality, and social phobia. The 29-item Generalized Pathological Internet Use scale (GPIUS) was used to produce the PIU scores, which subsequently helped the researchers place participants into either the high or low PIU-scoring groups. Anxiety levels were measured using the Spielberger State-Trait Anxiety Inventory (STAI), which consists of 40 self-report items loaded on two separate 20-item forms (STAI-Y1 and STAI-Y2. Absorption was measured by the Tellegen Absorption Scale (TAS), which consists of 34 items rated on a 4-point Likert. scale. The NEO-Five

Factor Inventory (NEO-FFI) was used as a measure of personality; this instrument asked participants to respond to 60 statements using a 5-point scale. The 20-item Social Phobia Scale (SPS) was also administered. Results indicated that 84 individuals fit the criteria for inclusion in the low PIU group and 79 individuals were placed in the high PIU group. The data also supported the authors' hypothesis that gamers with higher PIU scores would report significantly higher levels of state anxiety, trait anxiety, social phobia, and absorption compared to those with lower PIU scores (Cole & Hooley, 2013).

Cole and Hooley (2013) also found that participants with high PIU scores had higher neuroticism scores and lower extroversion scores than the lower PIU-scoring participants. Motivations for playing the game also differed between the PIU groups. According to the authors, "Absorption was correlated with higher PIU, suggesting that people who are fantasy-prone find online games more engaging than people who are not; this may represent a particular vulnerability to PIU in online gaming" (p. 433). However, the authors acknowledged that they could not determine what experiences might have preceded the PIU or what events may exacerbate these problems for participants.

Facebook and Online Social Networks

Another mechanism for Internet-based social communication involves leaving messages on individuals' Facebook or other social networking sites (SNS; Kittinger, Correia, & Irons, 2012). Facebook, created in 2004 by Mark Zuckerberg, has “1.6 billon page views each day” by subscribers (as cited in Sheldon, 2008, p. 67). Given its more than 1.5 billion active monthly users, Facebook is currently the world’s largest SNS.”

(Facebook Press Room, 2014; as cited in Rae & Lonborg, 2015). Sites such as Facebook allow for communication to extend past the realm of chat rooms and instant messaging to those where individuals can comment on each others' pages. For example, social network users often provide information about their relationship status, political affiliations, movie, and music preferences; in addition, they have the opportunity to post comments on other users' (i.e., friends') sites. Facebook has also become a tool for individuals seeking recognition from society or others who may want express their thoughts or talents online. Not surprisingly, other SNS sites (e.g., Twitter, Instagram, Tumblr) provide similar opportunities for online sharing and communication.

Sheldon (2008) examined individuals' motivations for using Facebook. Data about participants' unwillingness-to-communicate were also collected in order to investigate influences on gratifications sought and obtained. Using the rich-get-richer and social-compensation hypotheses, Sheldon wanted to explore a hypothesized relationship approach avoidance and reward. The researcher first described the uses and gratification theory to offer some insight into what users may get from their Facebook experiences. Next, the rich-get-richer hypothesis was used to demonstrate how extroverted individuals may benefit from their Internet use. Sheldon also discusses how the social compensation hypothesis differs in that it suggests that introverts may be the ones actually benefitting from their Internet use. According to Sheldon (2008), “The main purpose of social networks is making new friendships or to maintain those that already exists” (p. 69). For example, sites such as Facebook allow subscribers to reconnect with people who attended the same high school, in order to keep in touch or re-establish lost connections with

others. Finally, the researcher also wanted to investigate whether the elements of time, frequency, and number of Facebook friends were associated with motives to use Facebook. Results indicated that many of the study participants used Facebook to maintain relationships. In addition, a small number of respondents reported using Facebook as a means to start new connections that could lead to longer relationships. Consistent with the rich-get-richer hypothesis, results indicated that extroverted individuals benefitted more from their Facebook use than those who were introverts.

In a somewhat related study, Rae and Lonborg (2015) investigated the relationship between quantity of Facebook use and the motivations of Facebook users. They predicted that those who use Facebook to maintain current relationships would show higher levels of psychological well being, whereas those who used Facebook to seek new relationships would show signs of lower levels of psychological well being. A sample of 119 participants from a public university was given materials found through an Internet site that offering access to psychological research. Participants were asked to completed a survey that would collect, among other things, demographic information, as well as data about the quantity of Facebook use, motivations for Facebook use, and psychological well being. Motivations for Facebook use were measured by an 11-item self-report tool (Bonds-Raacke &Raacke, 2010; Raacke & Bonds-Raacke, 2008). Psychological well being was measured using the Mental Health Inventory that consists of 38 self-administered items; these items correspond to six different mental health constructs. The authors report that there was a significant association between time on Facebook and the motivation of connecting with others. Connection findings also offered

an insight into the effect of time on Facebook in that those who used Facebook for the purposes of seeking friendship were found to have higher levels of anxiety, depression, and loss of control.

Addiction or Problematic Use?

The proposed concepts of Internet and online gaming addiction continue to stimulate much debate (Andreassen, Torsheim, Brunborg, & Pallesen, 2012; Griffiths, 2012; Northrup, Lapierre, Kirk, & Rae, 2015). Chief among the concerns expressed in this debate are questions about the extent to which problematic online gaming or Internet use actually represent the same symptoms identified for substance dependence in the *DSM-IV-TR or DSM-5*. Nonetheless, numerous researchers have proceeded with studies designed to test the hypothesis that these behavioral process addictions occur at rates similar to, or exceeding, those of alcohol abuse or pathological gambling.

For example, Chak and Leung (2004) investigated shyness and locus of control as predictors of Internet addiction. The measurement tools used were the Internet Addiction Scale created by Young (2009), which consists of 8 items examining the participants' Internet experiences. The revised Cheek and Buss Shyness Scale (1981) consisting of 13 items examining levels of shyness and sociability was also administered. In addition, measurement of the locus of control variable was done using the Internality, Powerful Others, and Chance Scale (Levenson, 1981), which consisted of 3 subscales with 8 items each. Internet use was examined by questions that asked about days per week the Internet was used and how many hours and minutes of usage went into each a session on the Internet. In measuring online experiences, questions examining the location of Internet

sessions and how many aliases the individual has was measured as well. Next, online activities were measured by asking what activities the participant did while online. Lastly, demographic information was sought by the researchers to act as control variables. The findings from this study indicated that individuals high in shyness reported increased levels of Internet addiction. Another result from the study was that the number of aliases an individual has on the Internet is positively correlated with the level of Internet use. Kandell and Hall et al. (1998) **"**emphasized that college students are a population of particular concern, in that they may be especially vulnerable to Internet addiction" (as cited in Chak & Leung, 2004, p. 560). This could be due to the newly found freedom from both time constraints and responsibility frequently observed in the college student population. Young (2003) suggests many characteristics are contributing to college students' Internet addiction:

> free and unlimited Internet access, huge blocks of unstructured time, newly experienced freedom from parental control, no monitoring or censoring of what they say or do online, full encouragement from faculty and administrators, adolescent training in similar activities, desire to escape college stressors, social intimidation and alienation, and a higher legal drinking age (relevant to the Americans only) are the most common (as cited in Chak & Leung, 2004, p. 560).

Therefore, it is possible that college students find a form of release with online games while dealing with stressful situations that occur in the academic and social aspects of their lives.

Some individuals involved in online gaming shows signs of having problematic use. Achab et al. (2011) discussed separating MMORPG addiction from Internet addiction (IA), by using different psychological assessment tools with the same sample. The researchers administered a 63-item questionnaire that sought demographic information, social data, and the assessment of the relationship between gaming and concepts such as health or socio-professional consequences. In addition, the questionnaire included items for the clinical screening for IA and online gaming addiction. The authors adapted the *DSM-IV-TR* criteria for substance dependence for use in assessing online gaming addiction. To assess IA, the authors used the Goldberg Internet Addiction Disorder (GIAD) measure which consisted of 11 qualitative items. Lastly, the authors administered Orman's Internet Stress Scale (ISS) to collect information about a participant's tendency toward Internet addiction. The ISS consisted of 9 qualitative items that were answered "yes" or "no" by the participant. The authors recruited their 861 participants by sending invitations to 234 guilds in WOW identified through WOW forum sites. Of the 861 participants originally recruited, only 448 completed the research instruments. Results indicated that the GIAD predicted dependence and addiction while the ISS only estimated addiction. In addition, the authors state that, "... these 3 tools did not estimate the same entities, suggesting a difference between IA and online gaming addiction" (Achab et al., 2011, p. 9). Furthermore, the authors argue that different assessment tools are needed to better understand specific area of addiction related to Internet use or online gaming.

Consequences of Internet Use

In addition to facilitating online communication and entertainment, some individuals find stress relief from playing games or using social networking sites. For example, Reinecke (2009) explored the use of video and computer games to help individuals dealing with stress and strain. Reinecke indicates that, “The results of experimental research suggest that media exposure can indeed help users to escape negative thoughts about themselves” (p. 126). The ability to escape from something that is causing an individual a negative outcome in his or her daily life could also help explain why some individuals play MMORPGs like WOW. Many of these online games allow users to spend time doing something that might take their attention away from negative thoughts or feelings. Reinecke also describes how video and computer games have the potential to provide psychological detachment from work, relaxation, mastery experiences, and control. Lastly, the author indicates that social support (e.g., that provided by online friends) may help cope with daily stressors. Reinecke surveyed a sample of 1,614 individuals recruited on a popular gaming magazine website. Participants were asked to respond to two items that inquired about how often the game was played and the amount of time spent playing it. In addition, six items were used to collect information about participants' frequency of game usage after encountering situations that were considered stressful or exhausting. Results indicated that “The great majority of participants play video or computer games daily (46.6%) or several times a week (48.4%) with an average playing time of 117.28 minutes (*SD*=68.81 min) per gaming session” (Reinecke, 2009, p. 133). The findings also suggest that these types of

games were often used for recovery reasons after stressful or straining events in a participant's life. Participants' self-reported fatigue and daily hassles could also predict whether games were used for recovery reasons. Finally, results indicated that stressful events are handled differently by participants using emotion-focused coping strategies than those who used problem-focused coping. Participants who used emotional-focused coping reported a higher tendency to use games as a coping tool.

Online games may also provide a chance for the subscribers to become something they feel they cannot be in their daily lives. Leung (2004) examined the seductive properties of the Internet as a predictor of online activities and Internet addiction. The population of interest consisted were those individuals between the ages of 16 to 24 that are from the "Net-generation" era. The 699 participants were interviewed first on the phone to determine whether or not they were Internet users. Next, participants completed a questionnaire about their Internet use. The interviewers also asked questions that would help to deduce whether seductive properties or if certain desires were being met from the Internet. Young's (2009) Internet Addiction Scale (YIAS) uses a series of "yes" or "no" questions to assess participants levels of Internet addiction. Leung (2004) reported that, "only 37.9% of the 699 Net-geners in our sample can be classified as an Internet addict" (p. 341). The availability of social interaction may explain the mindset of these individuals who used the Internet so heavily. Leung also quotes Turkel (1995) to further develop his own argument, "Television is something you watch, but video games are something you do, something you do with your head, a world that you enter, and, to a certain extent, they are something you 'become'" (Leung, 2004, p. 336). In an online

game one may find a sense of purpose or something to do in each quest to become stronger.

Assessing Problematic Internet Use

Facebook over the years has begun to grow its user numbers to the point that it is an application found on many smart phones, tablets, gaming consoles, and personal computers. Facebook use is gaining attention from researchers who want to examine whether these types of SNS are associated with problematic Internet use. For example, Kittenger, Correia, and Irons (2012) sampled a college student population in order to collect data about the frequency, duration, gender differences, and reports of negative outcomes experienced by Facebook users. In addition, the researchers wanted to focus on the relationship of between Facebook uses and PIU. Their study sample included 281, predominantly female, undergraduate college students who provided demographic and computer use information, as well as information about recent Facebook use. To examine the frequency of recent Facebook usage, an 8-point Likert-type scale was developed by the researchers. The researchers also developed 10 questions designed to assess Facebook-related problems. To measure PIU the researchers used the Internet Addiction Test (IAT; Young, 1998). The IAT consists of 20 items rated on a 5-point Likert-type scale and is designed to assess symptoms such as preoccupation, compulsive use, and impairment. Kittenger et al. (2012) found that one in six participants reported problems occurring from their Internet use. In addition, time management was frequently of concern to the participants. However, it is interesting to note the researchers' observation that, “In terms of predicting IAT scores, the number of times a participant logged onto

Facebook was more predictive than the total amount of time spent using the application" (p. 326). Perhaps compulsive checking of Facebook is more indicative of problematic use than is the duration of time spent on the site.

Taking a somewhat different approach, Chen and Kim (2013) investigated factors associated with problematic SNS use. Privacy concerns and the type of gratification sought were of particular interest to the researchers. A sample of 1,044 participants completed surveys online through a link sent in an email. Participants were administered a 33-item 5-point Likert scale that measured the types of gratification participants sought from their SNS use. The Concern for Information Privacy instrument (Smith et al., 1996) was adapted by the researchers for use in assessing SNS-related privacy concerns. Young's (1998) 20-item Internet Addiction Test was modified in order to ask questions related to SNS. Finally, demographic information related to gender, age, ethnicity, and education was collected. Results yielded six reasons for using SNS; these included virtual community, diversion, self-presentation, relationship building, relationship maintenance, and information seeking. Interestingly, the factors of self-presentation and relationship building when applied to social gratification appeared to be predictors of problematic SNS use. Study findings failed to demonstrate an association between privacy concerns and problematic SNS use. According to the researchers, "If people go to SNSs for entertainment or pleasure, those desires can override privacy concerns, such as unauthorized secondary use and improper access, and lead to greater problematic SNS use" (Chen & Kim, 2013, p. 810).

Similarities in College Students' Problematic Use Behaviors

The primary purpose of the current study was to examine whether college students' patterns of online gaming and Facebook use behavior were similar to those observed for drinking and gambling. More specifically, when applying the *DSM-IV* criteria used for assessing substance abuse and gambling disorders, would college students show similar patterns of "addiction" or problematic use in their online gaming and Facebook behaviors?

Research estimates on self-reported drinking suggests that "31% of college students met criteria for the diagnosis of alcohol abuse and 6% for a diagnosis of alcohol dependence in the last 12 months" ("College Drinking", 2015) and 25% of students reported significant academic repercussions (e.g., missing class, poor performance). Similarly, a recent national survey found that 35% of college students reported having 5 or more drinks at a time in the last 2 weeks; in addition, 40% of respondents indicated they had been drunk in the previous month (National Institute of Drug Abuse, 2015). According to the same survey, 3.6% of college students reported drinking every day. Faden, Corey, and Baskin (2009) found similar results in a review of colleges alcohol policy data; more specifically, that "rates of drinking five or more drinks on an occasion (heavy episodic consumption) in the past 30 days and heavy use (heavy episodic consumption on 5 or more days in the past 30 days) for college students were 44.8% and 19.5%, respectively" (p. 28).

According to data provided on a College Gambling website, 75% of college students reported having gambled at least once in the last year. For their purposes,

gambling included activities such as playing games at a casino, purchasing lottery tickets, and betting on sports. In addition, research estimates that about 6% of these students have a significant problem with gambling that results in serious academic, financial, and psychological difficulties.

Summary

Online gaming and social networking represent two areas of emerging research in psychology. Recent investigations of online gaming suggest that individuals who play for large amounts of time each week show signs of problematic use with their online games. Unfortunately, there is relatively little research investigating the potentially addictive nature of online social networking sites such as Facebook although some authors have proposed constructs such as internet addiction and online gaming addiction. Therefore, the purpose of the study was to investigate the prevalence of self-reported online gaming and Facebook usage among college students living in a rural university community. Of particular interest was the degree to which prevalence rates of problematic use with gaming and problematic use with Facebook were similar to those described in published reports of excessive drinking and gambling in college students.

CHAPTER III

METHOD

Participants were recruited for one of two separate studies developed for this thesis. Study 1 recruited participants involved in online gaming, whereas Study 2 recruited those who identified themselves as current Facebook users. Methods for each of these studies are described below.

Study 1

Participants

A sample of 38 male and 31 female undergraduate college students participated in the online gaming study. All participants in the first study were required to have played an online game for more than a month. Demographic data for online gaming participants are presented in Table 1.

Materials and Measures

Materials for this study included the informed consent documents and research surveys. If the participant chose the SONA link to the online gaming research, they completed the Background Information Survey for Online Gaming (BISOG; see Appendix A).

BISOG. The background information survey for gaming participants created by the current researcher contained 13 questions requiring "yes" or "no" responses. In addition, there were questions that asked the participant to select one or more items that might correspond to their gaming habits. Still other questions asked the participant to indicate living and spending habits. Points were assigned to each of the aforementioned

responses in regards to “yes” or “no” responses, with "no" earning 0 points, and "yes" responses earning 1 point. The responses on this survey were also be used to gather frequency data on any possible trends that were seen with the gamer participants in this sample. There were 24 questions consisting of yes or no questions, as well as 22 questions that indicated play time, living situations, and factors involved with gaming habits. All participants answered the first 14 questions whether or not they had ever played an online game. Participants who never played an online game were subsequently re-directed to the debriefing information after Question 14 because the remaining survey questions were those that only gamers were able to answer.

Table 1

Demographic Information for Online Gamers

Variable	Level	*N*	%	*M*	*SD*
Age		-	-	20.45	3.27
Gender	Male	38	55.1		
	Female	31	44.9		
Ethnicity	African American or Black	2	2.9		
	Asian	2	2.9		
	Hispanic or Latino	4	5.8		
	American Indian or Alaska Native	0	0.0		
	Hawaiian or Pacific Islander	0	0.0		
	White	55	79.7		
	Multiracial	5	7.2		
	Other	1	1.4		

Table 1 (continued.)

Variable	Level	*N*	%	*M*	*SD*
Relationship Status	Single	37	53.6		
	In a relationship	30	43.5		
	Partnered/married	1	1.4		
	Separated/divorced	1	1.4		
	None of the above	0	0.0		
Living Situation	Live alone	9	13.0		
	Live with parents	1	1.4		
	Live with roommates	55	79.7		
	Live with partner/spouse/children	4	5.8		
School Year	Freshman	30	43.5		
	Sophomore	17	24.6		
	Junior	15	21.7		
	Senior	7	10.1		
	Other	0	0.0		
Current Full Time Student	Yes	67	97.1		
	No	1	1.4		
Currently Employed	No	47	68.1		
	Full time	0	0.0		
	Part time	21	30.4		
	Number of hours	-	-	18.71	5.46

The participants who indicated that they had played an online game were asked to complete questions 15 through 46. Questions 1 through 14 were items that gathered basic demographic and online gaming participation information. One of these initial 14 questions asked participants to identify the first four things they do in the morning after waking up. The goal of this question was to identify the percentage of students who use the Internet or play online games when they first begin their day. Next, Questions 15

through 20 collected information about participants' gaming-related habits. Question 21 was an item that involved describing how online gaming was introduced into the player's life. Questions 22 through 28 were adapted from the *DSM-IV-TR* criteria for substance dependence (see Table 2) and included in the BISOG to examine whether online gaming had negatively affected the user's life academically, financially, or emotionally. Question 29 asked gamers to rank their preferences for different playing options. Questions 30-36 were adapted from Young's (1998) 20-item Internet Addiction Scale (YIAS) and placed into the complete Background Information Survey for Online Gaming (BISOG) developed for this study. The original YIAS consisted of "yes" or "no" questions designed to assess whether a participant suffers from Internet addiction; consequently, Questions 30-36 were intended to assess whether participants might be suffering from problematic use of online gaming.

Question 37 was developed for this study and was used to assess whether--on balance--participants currently felt positively or negatively about online gaming's effect on their lives. Question 38 inquired about how many times the participant logged onto the game.

Questions 39-43 were items adapted from the Alcohol Use Disorder Identification Test (AUDIT) developed by the World Health Organization (1993). The original AUDIT uses 10 multiple-choice items to examine "hazardous alcohol consumption" (Knight et al. 2003, p. 68). In my opinion, five questions from the AUDIT seemed potentially applicable to online gaming and were adapted for inclusion in the BISOG.

Finally, Questions 44 and 45 were items adapted from the four-item CAGE questionnaire (Mayfield, McLeod, & Hall, 1974). According to Knight et al. (2003) the CAGE assesses “alcohol dependency” (p. 68). Two questions from the original CAGE seemed applicable to online gaming and were adapted into the BISOG.

Proposed Cutoff Scores

Given the exploratory nature of this study and ongoing ambiguity in the literature regarding the construct of "online gaming addiction" the proposed cutoff scores used in this study (see Table 4 represent an attempt to resemble the recommended cutoff scores for the *DSM-IV-TR* (i.e., substance dependence and pathological gambling), YIAS, AUDIT, and CAGE. With the exception of the *DSM-IV-TR* criteria, when the number of items on each of these adapted versions of the instruments was less than the original, I applied the same proportion of items used by the original authors to identify cutoff scores. For example, possible scores on the 20-item YIAS range from 20-100; Young (1998) suggests that scores ranging from 20 - 39 represent "average Internet use." Scores on my 7-item adapted version of this instrument can range from 1 to 35; a *proportional* cutoff score for "average online gaming use" would be less than 14. Similar proportional adjustments were made for the adapted AUDIT and CAGE questions in this study.

Procedures

After approval was obtained from the CWU Human Subjects Review Committee, participants were recruited via the Psychology Department SONA system. Students visiting the SONA site were given the opportunity to sign up for the online gaming or Facebook study but not both. On the home page for this site, students could click on a

link (Online Gaming Study) or (Facebook Study) that took them directly to the research materials located on SurveyMonkey.com. Upon arrival at the Online Gaming Study or Facebook Study data collection site, participants were provided with the required informed consent information pertaining to the study they were completing. Following informed consent, students were presented with each of the research questionnaires.

If participants had any questions about the informed consent document they were able to email the investigator before or after the survey(s) had been completed. After the participants had selected "continue" the study from the informed consent screen, they were first administered the background information survey. On both demographic surveys a question was asked if the participant had ever played an online game or used Facebook before. If participants responded “yes” to the question, they were allowed to finish either the gaming study or the Facebook study measures. If prospective participants answered "no" to the previously mentioned question, they were automatically re-directed to the debriefing screen and thanked for their participation. Participants were directed to a debriefing form once they completed the survey.

The research materials were ordered as follows for the online gaming study: (a) informed consent document, (b) BISOG, (c) debriefing document, and (d) the close browser page.

Research Question

How do participants' experiences with online gaming and possible patterns of problematic use compare to previously identified symptoms of substance dependence and pathological gambling?

Data Analyses

Frequency and percentage data were obtained on the BISOG items for all identified online gamers in the study. Next, using only the data from those participants identified as online gamers users in Question 14 of the demographic/background information surveys, the following analyses were performed: (a) frequency and percentage data were obtained for items 15-21 of the online gaming background information scale. (b) a Pearson *r* correlation coefficient was calculated between total scores on items 22-28 that were adapted from criteria found in the *DSM-IV-TR* for substance abuse and total scores on items 30-36 that were adapted from the YIAS measure of Internet addiction found in the BISOG.

Study 2

Overview

The second study examined participants' Facebook-related experience in order to explore possible patterns of problematic use when compared to symptoms of substance dependence and pathological gambling.

Participants

A sample of 24 male and 73 female undergraduate students participated in the Facebook study. All participants were required to have used Facebook for more than one month. Lastly, demographic data for these Facebook participants are presented in Table 2.

Materials and Measures

Materials for the Facebook study included the informed consent documents and research surveys. If the participant chose the SONA link to the Facebook survey, they were asked to complete the Background Information Survey for Facebook (BISF, see Appendix B).

BISF. The background information survey for Facebook participants (see Appendix B) created by the current researcher contained 27 questions requiring “yes” or “no” responses. In addition, there were questions that asked the participant to select one or more items that might correspond to their Facebook habits. Still other questions asked the participant to indicate living and spending habits. Points were assigned to each of the aforementioned responses in regards to “yes” or “no” responses, with "no" earning 0 points, and "yes" earning 1 point.

Table 2

Demographic Information for Facebook Users

Variable	Level	*N*	%	*M*	*SD*
Age		-	-	20.75	2.88
Gender	Male	24	24.7		
	Female	73	75.3		
Ethnicity	African American or Black	3	3.1		
	Asian	2	2.1		
	Hispanic or Latino	9	9.3		
	American Indian or Alaska Native	1	1.0		
	Hawaiian or Pacific Islander	0	0.0		
	White	79	81.4		
	Multiracial	3	3.1		

Table 2 (continued).

Variable	Level	*N*	%	*M*	*SD*
Relationship Status	Single	39	40.2		
	In a relationship	47	48.5		
	Partnered/married	8	8.2		
	Separated/divorced	1	1.0		
	None of the above	1	1.0		
Living Situation	Live alone	9	9.3		
	Live with parents	4	4.1		
	Live with roommates	68	70.1		
	Live with partner/spouse/children	16	16.5		
School Year	Freshman	33	34.0		
	Sophomore	27	27.8		
	Junior	22	22.7		
	Senior	14	14.4		
	Other (Post baccalaureate)	1	1.0		
Current Full Time Student	Yes	94	96.9		
	No	2	2.1		
Currently Employed	No	46	47.4		
	Full time	8	8.2		
	Part time	43	44.3		
	Number of hours	-	-	20.17	8.09

All participants answered the first 14 questions, whether or not they had ever used Facebook. These 14 items gathered basic demographic information from the sample, as well as patterns of Facebook use and the first four things participants did after waking up. Participants who were not currently using Facebook were re-directed to the debriefing information after Question 14 because the remaining survey questions were those that only Facebook users would be able to have answered. Participants who indicated that

they had used Facebook were asked to complete the remaining items in the survey. Questions 15 through 19 were items that described participants' Facebook-related habits. Question 20 was an item that involved describing how Facebook was introduced into the participant's life. Questions 21 through 27 were adapted from *DSM-IV-TR* criteria for substance dependence and were designed to assess whether Facebook had impaired the user's life academically, financially, or emotionally. Participants received one point for every "yes" response to these seven questions. Question 28 asked Facebook users to rank order their preferred Facebook use activities. Questions 29 and 30 asked questions about privacy settings on, and access to, each participant's Facebook user profile. Questions 31-37 were adapted from Young's Internet Addiction Scale (YIAS) for inclusion in the BIFS whereas Questions 38 and 39 were used to assess whether a participant's opportunities had ever been affected by information posted on their Facebook profile, either by the participant or someone else. Next, Question 40 asked participants whether--on balance--they felt positively or negatively about Facebook's effect on their life. Question 41 asked how many times the participant logged onto Facebook. Questions 42-46 were adapted from the AUDIT measure of problem drinking for use in the BISF. Finally, Questions 47 and 48 were adapted from the CAGE criteria (Mayfield et al., 1974). Proposed cutoff scores were developed using the same proportional approach described for Study 1.

Procedures

For the Facebook study the research materials were ordered as follows: (a) informed consent document, (b) BISF, (c) debriefing document, and (d) the close browser page.

Research Question

How do participants' experiences with Facebook and possible patterns of problematic use compare to previously identified symptoms of substance dependence and pathological gambling?

Data Analyses

Frequency and percentage data were obtained on the BISF items for all participants. Next, a Pearson *r* correlation coefficient was calculated between total scores on items 21-27 and total scores on items 31-37 of the BISF given that these items were designed to most closely approximate those criteria identified in the *DSM-IV-TR* criteria for substance dependence and the YIAS measure of Internet addiction, respectively.

CHAPTER IV

RESULTS

Patterns of Online Gaming and Facebook Use

Participants provided information about either their online gaming behaviors or patterns of Facebook use (see Table 3); some of these data will be discussed briefly below.

Online gaming behaviors. Some questions on the BISOG inquired about participants' online gaming behavior in terms of numbers of hours per week, time of day most used, and preference for gaming on weekdays or weekends. Participants reported that, on average, they spent 5.41 (*SD* = 8.23) hours per week playing online games; they also were asked to indicate the number of hours played in the previous week (*M* = 4.72±9.25) and the number of times logged on in a day (*M* = 1.46±1.60). The times of day most often used for online gaming included evening (24.6%), late evening (29.0%), and no preference (27.5%). With respect to playing more on weekdays or weekends, responses were rather equally distributed among weekdays (33.3%), weekends (31.9%), and no difference (33.3%).

Patterns of Facebook use. Participants in the Facebook study were also asked about time spent using the site, and preferences for time of day and weekday or weekend. Results indicated that Facebook participants spent more hours per week on the site (*M* = 9.50±11.37), on average, when compared to the online gamers. Similarly, the average number of hours spent on Facebook in the previous week (*M* = 7.63±8.75) was greater than for online gamers as was the number of times logged on in a day (*M* = 4.21±3.51).

Participants also reported a preference for using Facebook in the evening (24.7%) or late evening (20.6%), or had no preference at all (35.1%). For this sample of participants, Facebook use was more common on weekdays (51.5%) than on weekends (11.3%); however, 37.1% of students reported no difference in weekday or weekend use.

Table 3

Comparison of Survey Responses for Facebook Users and Online Gamers Only

Variable	Level/Population	*N*	*%*	*M±SD*
Prior Use Before College	Yes FB	76	78.4	
	Yes OG	48	69.6	
	No FB	21	21.6	
	No OG	21	30.4	
Know Others Who Use	Yes FB	97	100.0	
	Yes OG	69	100.0	
	No FB	0	0.0	
	No OG	0	0.0	
Close Circle Use	Yes FB	96	99.0	
	Yes OG	57	82.6	
	No FB	0	0.0	
	No OG	12	17.4	
How Long Using	Less than 1 year FB	4	4.1	
	Less than 1 year OG	24	34.8	
	1-3 years FB	56	57.7	
	1-3 years OG	22	31.9	
	Over 3 years FB	37	38.1	
	Over 3 years OG	22	31.9	

Table 3 (continued.)

Variable	Level/Population	*N*	*%*	*M±SD*
Average Weekly Hours on...	FB	-	-	9.50±11.37
	OG	-	-	5.41±8.23
Past Week Hours on...	FB	-	-	7.63±8.75
	OG	-	-	4.72±9.25
Time of Day Used Most	Morning FB	7	7.2	
	Morning OG	0	0.0	
	Afternoon FB	12	12.4	
	Afternoon OG	12	17.4	
	Evening FB	24	24.7	
	Evening OG	17	24.6	
	Late evening FB	20	20.6	
	Late evening OG	20	29.0	
	No preference/it varies FB	34	35.1	
	No preference/it varies OG	19	27.5	
Use More on Weekdays or Weekends	Weekdays FB	50	51.5	
	Weekdays OG	23	33.3	
	Weekends FB	11	11.3	
	Weekends OG	22	31.9	
	No difference FB	36	37.1	
	No difference OG	23	33.3	
Introduced by...	Friend FB	76	78.4	
	Friend OG	49	71.0	
	Family member FB	14	14.4	
	Family member OG	9	13.0	
	Co-Worker FB	0	0.0	
	Co-Worker OG	0	0.0	

Table 3 (continued.)

Variable	Level/Population	*N*	%	*M±SD*
Introduced by...	Roommate FB	1	1.0	
	Roommate OG	3	4.3	
	Classmate FB	2	2.1	
	Classmate OG (not asked in survey)	--	--	
	Other FB	3	3.1	
	Other OG	7	10.1	
Lost Track of Time	No FB	77	79.4	
	No OG	14	20.3	
	Yes FB	20	20.6	
	Yes OG	54	78.3	
Used Longer Than Planned	No FB	8	8.2	
	No OG	6	8.7	
	Yes FB	89	91.8	
	Yes OG	63	91.3	
Study Habits Negatively Affected	No FB	41	42.3	
	No OG	35	50.7	
	Yes FB	56	57.7	
	Yes OG	34	49.3	
Used and Missed Class	No FB	95	97.9	
	No OG	65	94.2	
	Yes FB	2	2.1	
	Yes OG	4	5.8	
Used and Missed Work	No FB	6	6.2	
	No OG	66	95.7	
	Yes FB	91	93.8	
	Yes OG	3	4.3	

Table 3 (continued.)

Variable	Level/Population	*N*	%	*M*±*SD*
Ignored Others	No FB	56	57.7	
	No OG	47	68.1	
	Yes FB	39	40.2	
	Yes OG	22	31.9	
Relationship Negatively Affected	No FB	71	73.2	
	No OG	63	91.3	
	Yes FB	26	26.8	
	Yes OG	6	8.7	
Quit and Gone Back	No FB	85	87.6	
	No OG	63	91.3	
	Yes FB	12	12.4	
	Yes OG	5	7.2	
Use Bring Excitement/ Challenge	No FB	73	75.3	
	No OG	22	31.9	
	Yes FB	24	24.7	
	Yes OG	46	66.7	
Loss of Job, Relationships, etc.	No FB	95	97.9	
	No OG	65	94.2	
	Yes FB	2	2.1	
	Yes OG	3	4.3	
Use Alleviates Feelings	No FB	18	18.6	
	No OG	47	68.1	
	Yes FB	79	81.4	
	Yes OG	21	30.4	

Table 3 (continued.)

Variable	Level/Population	*N*	%	*M*±*SD*
Others Pay for Use	No FB	94	96.9	
	No OG	65	94.2	
	Yes FB	2	2.1	
	Yes OG	3	4.3	
Use Longer to Achieve	No FB	89	91.8	
	No OG	63	91.3	
	Yes FB	8	8.2	
	Yes OG	5	7.2	
Concealed Time	No FB	79	81.4	
	No OG	52	75.4	
	Yes FB	18	18.6	
	Yes OG	16	23.2	
Current Thought on Use	Creates problems FB	12	12.4	
	Creates problems OG	47	68.1	
	Many benefits FB	84	86.6	
	Many benefits OG	14	20.3	
Times Logged On in a Day	FB	-	-	4.21±3.51
	OG	-	-	1.46±1.60
Not Able to Stop	Frequently FB	6	6.2	
	Frequently OG	2	2.9	
	Occasionally FB	21	21.6	
	Occasionally OG	8	11.6	
	Infrequently FB	45	46.4	
	Infrequently OG	38	55.1	
	Not Applicable FB	25	25.8	
	Not Applicable OG	20	29.0	

Table 3 (continued.)

Variable	Level/Population	*N*	%	*M±SD*
Failed Normal Expectations	Frequently FB	1	1.0	
	Frequently OG	0	0.0	
	Occasionally FB	14	14.4	
	Occasionally OG	5	7.2	
	Infrequently FB	58	59.8	
	Infrequently OG	41	59.4	
	Not Applicable FB	23	23.7	
	Not Applicable OG	22	31.9	
Feelings of Guilt and Remorse	Frequently FB	0	0.0	
	Frequently OG	0	0.0	
	Occasionally FB	11	11.3	
	Occasionally OG	8	11.6	
	Infrequently FB	49	50.5	
	Infrequently OG	31	44.9	
	Not Applicable FB	37	38.1	
	Not Applicable OG	29	42.0	
Someone Negatively Affected by Use	No FB	87	89.7	
	No OG	3	4.3	
	Yes FB	9	9.3	
	Yes OG	65	94.2	
Someone Suggested Cutting Down	No FB	89	91.8	
	No OG	59	85.5	
	Yes FB	7	7.2	
	Yes OG	9	13.0	

Table 3 (continued.)

Variable	Level/Population	*N*	%	*M*±*SD*
Felt You Should Cut Down	No FB	60	61.9	
	No OG	54	78.3	
	Yes FB	36	37.1	
	Yes OG	14	20.3	
Annoyed by Criticism	No FB	85	87.6	
	No OG	54	78.3	
	Yes FB	11	11.3	
	Yes OG	14	20.3	

Potential Symptoms of Problematic Online Gaming and Facebook Use

Online gaming. Table 4 presents summary data for participants' problematic online gaming behavior using the four different assessment methods described previously (e.g., adapted from Young, *DSM-IV-TR*, AUDIT, CAGE). Using the modified Young (1998) criteria, 17.3% of the online gamers met or exceeded the cutoff for frequent problems with their use. In contrast, 58.0% of gamers would be identified as having a serious problem if assessed using the adapted *DSM-IV-TR* criteria, whereas 14.5% would meet the criteria for problematic use specified in the adapted AUDIT. Finally, 30.4% of participants responded "yes" to either one or two of the CAGE items; these responses might indicate some awareness of an online gaming problem.

Pearson-*r* correlation coefficients (see Table 5) were calculated to examine associations between these four methods of assessing problematic online gaming

behavior. Correlations ranged from .40 to .53 (all p <.001), suggesting a moderate degree of association among the four methods.

In exploring the online gamers' responses to the individual survey items, several trends emerged. First, 78.3% of participants reported losing track of time while playing; 91.3% indicated they played longer than planned; and 7.2% said they had to play longer to achieve the same effect. Not surprising then, 49.3% of students reported their study habits being negatively affected; however, only 5.8% indicated they missed class due to online gaming activities. With respect to their interpersonal relationships, 31.9% indicated they had ignored others while playing games, 8.7% reported that their relationships had been negatively affected by their online gaming behavior, 94.2% believed someone was negatively affected by their use, 23.2% concealed from others the amount of time they spent gaming, and 20.3% were annoyed by others' criticism of their gaming behavior. Online gamers apparently also played to experience excitement or challenge (66.7%) or to alleviate feelings (30.4%). Finally, 20.3% of online gamers reported that they felt they should cut down on their use.

One extra item was added to the BIOGS in order to get a sense of participants' bottom line regarding the perceived negative and positive effects associated with online gaming. More specifically, participants were provided with two statements (i.e., "Online gaming has many benefits..." or "Online gaming can create problems...") and then asked to indicate which statement best described their current thinking about online gaming. Interestingly, 68.3% endorsed the position that their online gaming creates problems.

Table 4

Results on the Four Adapted Methods of Assessing Problematic Online Gaming

Criteria	# Items	Scoring	New # Items	Proposed Scoring	*N*	%
Young	20	Average Internet Use (20-39)	7	Average Use (<14)	56	81.2
		Frequent Problems (40 - 69)		Frequent Problems (14-24)	11	15.9
		Significant Problems (70-100)		Significant Problems (≥25)	1	1.4
DSM-IV-TR		Need 3 or More in 12 Months	7	Need 3 or More	40	58.0
AUDIT	10	Hazardous Use (≥8)	5	Problematic Use (≥8)	10	14.5
				Problematic Use (≥4)	49	71.0
CAGE	4	Normal Cutoff (2 out of 4)	2	Cutoff = 1 or more	21	30.4
		Consensus Cutoff (1 out of 4)		Cutoff = 2	7	10.1

*Note. The adapted AUDIT criteria for online gamers used fewer items than the original 10 and fewer response categories.

Table 5

Pearson-r Correlations Among the Four Adapted Methods of Assessing Problematic Online Gaming

Method	Young	DSM-IV-TR	AUDIT	CAGE
Young	1.00	--	--	--
DSM-IV-TR	.48	1.00	--	--
AUDIT	.49	.44	1.00	--
CAGE	.40	.53	.43	1.00

Note. All correlation coefficients are statistically significant ($p < .001$)

Facebook use. Table 6 presents summary data for participants' problematic Facebook behavior using the four different assessment methods described previously (e.g., adapted from Young, *DSM-IV-TR*, AUDIT, CAGE). Using the modified Young (1998) criteria, 12.4% of Facebook users met the cutoff for frequent problems with their use. In contrast, 80.4% of these users would be identified as having a serious problem if assessed using the adapted *DSM-IV-TR* criteria, whereas 3.1% would meet the criteria for problematic use specified in the adapted AUDIT. Finally, 41.2% of participants responded "yes" to either one or two of the CAGE items; these responses might indicate some awareness of a Facebook use problem.

Pearson-*r* correlation coefficients (see Table 7) were calculated to examine associations between these four methods of assessing problematic online gaming behavior. Correlations ranged from .23 to .49 (all $p < .05$), suggesting weak to moderate degrees of association among the four methods. The two-item CAGE measure yielded the strongest correlations with the other three measures.

In exploring the Facebook users' responses to the individual survey items, several trends emerged. First, 20.6% of participants reported losing track of time while on Facebook; 91.8% indicated they used longer than planned; and 8.2% said they had to stay on Facebook longer to achieve the same effect. Not surprising then, 57.7% of students reported their study habits being negatively affected; however, only 2.1% indicated they missed class due to online gaming activities. A surprising 93.8% of students reported missing work due to their Facebook use. With respect to their interpersonal relationships, 40.2% indicated they had ignored others while on Facebook, 26.8% reported that their

relationships had been negatively affected by their Facebook use, 9.3% believed someone was negatively affected by their use, 18.6% concealed from others the amount of time they on Facebook, and 11.3% were annoyed by others' criticism of their Facebook use. Participants apparently also used Facebook to experience a sense of excitement or challenge (24.7%) or to alleviate feelings (81.4%). Finally, 37.1% of students reported that they felt they should cut down on their Facebook use.

An extra item was also added to the BIFS in order to get a sense of participants' bottom line regarding the perceived negative and positive effects associated with their Facebook use. More specifically, participants were provided with two statements (i.e., "Facebook has many benefits..." or "Facebook can create problems...") and then asked to indicate which statement best described their current thinking about its use. Interestingly, only 12.4% endorsed the position that Facebook use creates problems, whereas 86.6% believed that Facebook provides many benefits.

Table 6

Results on the Four Adapted Methods of Assessing Problematic Facebook Use

Criteria	# Items	Scoring	New # Items	Proposed Scoring	*N*	%
Young	20	Average Internet Use (20-39)	7	Average Use (<14)	84	86.6
		Frequent Problems (40 - 69)		Frequent Problems (14-24)	12	12.4
		Significant Problems (70-100)		Significant Problems (≥25)	0	0.0
DSM-IV-TR		Need 3 or More in 12 Months	7	Need 3 or More	78	80.4
AUDIT	10	Hazardous Use (≥8)	5	Problematic Use (≥8)	3	3.1
				Problematic Use (≥4)	37	38.1
CAGE	4	Normal Cutoff (2 out of 4)	2	Cutoff = 1 or more	40	41.2
		Consensus Cutoff (1 out of 4)		Cutoff = 2	7	7.2

*Note. The adapted AUDIT criteria for Facebook users contained fewer items than the original 10 and fewer response categories.

Table 7

Pearson-r Correlations Among the Four Adapted Methods of Assessing Problematic Facebook Use

Method	Young	DSM-IV-TR	AUDIT	CAGE
Young	1.00	--	--	--
DSM-IV-TR	.23[a]	1.00	--	--
AUDIT	.35[b]	.32[b]	1.00	--
CAGE	.40[b]	.30[b]	.49[b]	1.00

Note. [a] $p < .05$ [b] $p < .01$

Additional Findings

Although the primary focus on these studies was on identifying problematic online gaming and Facebook use, some additional data were collected. For example, participants in both studies were asked to list the first four things they did in the morning after awakening. This inquiry was designed to assess how often technology-related activities occur first thing in the morning. Also of interest was the participants' use of Facebook privacy-related settings.

First four things done in the morning by online gamers. Table 8 provides a comparison of the first four technology-related things (e.g., check email, play games, use Internet) done in the morning by online gamers; for a more complete list of morning activities, please see Table 10 in Appendix G. Of the activities done first in the morning, 8.4% involved the use of computer technology, cell phone use, or other electronics (e.g., television). Technology-related behaviors were also performed between the second (12.6%), third (19.6%), and fourth (14.0%) activities done after awakening. Taken together, these data suggest that many college students often use technology during their initial daily activities.

First four things done in the morning by Facebook users. Table 8 also provides a summary of the first four technology-related things (e.g., check email, play games, use Internet) done in the morning by Facebook users; for a more complete list of morning activities, please see Table 12 in Appendix G. Of the activities done first in the morning, 10.0% involved the use of computer technology, cell phone use, or other electronics (e.g., television). Technology-related behaviors were also included between

the second (8.1%), third (13.1%), and fourth (15.0%) tasks performed after awakening. As was the case with online gamers, these data indicate that the Facebook study participants often used technology during their initial daily activities.

Facebook privacy settings. The BIFS also inquired about participants' use of privacy settings on Facebook; results indicated that 81.3% of students did not actually use them. In addition, 82.5% of participants reported that they allowed more than just their Facebook "friends" to view or post information on their pages, which essentially makes any information posted on their pages readily available to anyone who searches it out. This is potentially of concern given that 94.8% of participants indicated they had lost an educational, job, or relationship opportunity due to information others had posted about them on Facebook.

Table 8

Comparison of First Four Things in the Morning Done by Gamers and Facebook Users

		Percentage				
Activity	Sample	First	Second	Third	Fourth	Total
Play games	OG	1.4	--	--	1.4	2.8
	FB	1.0	--	--	--	1.0
Check Facebook	OG	--	4.2	2.8	--	7.0
	FB	3.0	2.1	6.1	5.0	16.2
Check email	OG	1.4	--	7.0	2.8	11.2
	FB	2.0	5.0	2.0	7.0	16.0
Cell phone	OG	4.2	--	1.4	1.4	7.0
	FB	3.0	--	--	--	3.0
Use computer	OG	1.4	5.6	1.4	1.4	9.8
	FB	--	--	3.0	1.0	4.0
Use Internet	OG	--	--	1.4	--	1.4
	FB	--	--	--	--	--
Watch television	OG	--	1.4	--	4.2	5.6
	FB	1.0	--	1.0	1.0	3.0
Listen to music	OG	--	1.4	4.2	--	5.6
	FB	--	--	1.0	1.0	2.0
Other (e.g., text,	OG	--	--	1.4	2.8	4.2
Twitter, Ebay, blogs)	FB	--	1.0	--	--	1.0
Total technology use	OG	8.4	12.6	19.6	14.0	
	FB	10.0	8.1	13.1	15.0	

CHAPTER V

DISCUSSION

Discussion of Results

Although descriptive in nature, these two studies provide some interesting data about college students' patterns of online gaming behavior and Facebook use. In addition, four methods of assessing problematic online gaming or Facebook use were also compared given controversies in the clinical and research literature about how best to assess these problems. The original purpose of these studies was to investigate whether rates of problematic online gaming or Facebook use were similar to those of alcohol dependence or pathological gambling in samples of college students.

Previous alcohol use data on indicate that 31% of college students met the criteria for alcohol abuse; furthermore, 6% of these students also reported symptoms consistent with alcohol dependence ("College Drinking"). Faden et al. (2009) found that 19.5% of college students engaged in heavy use as defined by heavy drinking on five or more days of the previous 30 days. College student rates of significant problems associated with gambling suggest that approximately 6% of these individuals experience serious financial, psychological, or academic consequences related to this behavior ("College Gambling").

So how do the patterns of problematic online gaming and Facebook use in the current samples compare to previous reports of alcohol dependence and serious gambling problems in the college student population? With respect to online gaming, 17.3% of the current sample met the adapted Young (1998) criteria for frequent or significant

problems, 58% met three or more of the adapted *DSM-IV-TR* criteria for problematic use (i.e., dependence), 14.5% could be classified as engaging in problematic online gaming using the adapted AUDIT criteria, and 30.4% of students reported agreement with one or more of the two adapted CAGE items. In summary, between 14.5% and 58.0% might be classified with problematic online gaming use, depending on the criteria used in this assessment.

Patterns of problematic use among those with Facebook accounts share some similarities with college student alcohol use disorders. For example, 12.4% of the current sample responded to the Young (1998) items in a manner that suggests frequent problems associated with Facebook use. Using the adapted *DSM-IV-TR* criteria, a surprising 80.4% of students endorsed three or more of the symptoms intended to classify problematic Facebook use. When applying the adapted AUDIT criteria, 3.1% of students could be classified as engaging in problematic Facebook use, whereas 41.2% agreed with either one or two of the adapted CAGE items. Taken together, these data suggest that, depending on assessment method, between 3.1% and 80.4% college students may engage in problematic Facebook use. However, it should be noted that such extreme differences in the percentages of college students with excessive or problematic Facebook use raises serious questions about the reliability and validity of the survey items used in the current study.

Methodological Limitations and Strengths

Methodological limitations. The lack of clear criteria for identifying problematic online gaming or Facebook use represents a major limitation in the present study. In

retrospect, it appears that the measures adapted for use in this study were rather poorly constructed given the substantial departure of many items from the language used in the original assessment methods (e.g., *DSM-IV-TR*, YAIS, AUDIT). Similarly, it is important to recognize that the concepts of "online gaming addiction" and "Internet addiction" have evolved somewhat in the four years since my data were collected. The body of research on problematic Internet, online gaming, and social networking use has grown rapidly, with many new measures being developed and tested for their psychometric properties (e.g., Bodroža & Jovanović, 2016; Northrup, Lapierre, Kirk, & Rae, 2015). As such, the measures used in the present study now seem rather crude, possessing little more than a small group of researchers' (e.g., Young, 2009) efforts to apply the *DSM-IV-TR* criteria for substance dependence to other problematic behaviors such as online gaming and Internet use. In a nutshell, it is difficult to draw conclusions about problematic online gaming or Facebook use from these data, given these questions about the validity of the measures used in these two studies.

Selection bias in sampling is another important limitation of the current research. Participants in these two studies constitute convenience samples in which undergraduate student volunteers self-selected the specific studies for which they wanted to earn extra credit points. The ability to generalize these results to the larger population of college students is further hampered by sampling students from only one university. Although demographic data (e.g., ethnicity) resembled the institutional data, greater diversity among participants would likely occur with larger population-based samples. Accessing larger and more representative samples might be accomplished using recruitment tools

such as Amazon's Mechanical Turk, SurveyMonkey's online sampling, Facebook advertisements, or online gaming forums, to name a few. Finally, although the measures in these studies provided rich descriptive data, it was not possible to compare online gamers and Facebook users given item variability in the two surveys and questions about the independence of the samples used in these two studies.

Methodological Strengths. First, each survey (i.e., online gaming, Facebook) included fewer than 60 questions and required less than 30 minutes to complete. As such, there was very little participant attrition in these studies. Second, to protect participants' anonymity, surveys were completed on an online server that included additional privacy protections (e.g., //https, no IP address tracking). Ideally, ensuring the anonymity of participants would also reduce the likelihood of social desirability effects in their responses to these measures.

Suggestions for Future Research

Conceptual and measurement issues. Simply stated, the current literature on problematic online gaming, Internet use, and Facebook activity is fraught with conceptual and measurement problems. For example, the term "Internet addiction" is widely used in both the popular and scientific literature; yet, there is little consensus among researchers about whether the same criteria should be applied to both substance dependence and so-called "cyber addictions" such as problematic or excessive online gaming or Internet use (Geisel, Panneck, Stickel, Schneider, & Muller, 2015; Suissa, 2015). Furthermore, the recently published *DSM-5* (American Psychiatric Association, 2013) suggests that Internet Gaming Disorder, pending more clinical research, might be included in a future

edition of this important diagnostic manual. Should it be included in the future, research measures will likely require revision in order to conform to the new diagnostic criteria. Given the relative infancy of research in this area, future studies should carefully evaluate the reliability and construct validity of these new measures. Any sustained effort to identify or classify college students with problematic online gaming behavior or Facebook use will undoubtedly require psychometrically sound assessment procedures.

To date, research on so-called Internet, online gaming, or Facebook "addiction" has relied on student or client self report which, in turn, raises questions about the reliability of responses to such survey questions. In the future, researchers might wish to consider alterative methods of collecting real time rather than retrospective data, using techniques such as ecological momentary assessment.

Correlates of problematic use. Once reliable and valid measures of problematic online gaming or Facebook use have been identified, researchers should continue to examine possible correlates (i.e., predictors and consequences) of such use. In doing so, clinicians and university administrators will likely gain a more complete picture of the challenges faced by students who engage in excessive or problematic forms of Internet use.

Online privacy. Another possible topic for future research inspired by the current findings relates to the ways in which college students' privacy on the Internet can be compromised and the degree to which they are concerned about the consequences of such violations. It might also be useful to examine whether Facebook users in 2016 are more likely to attend to privacy settings when compared to users from whom the current data

were collected in 2011.

Summary

Despite the methodological limitations identified previously, the descriptive results of these two studies provide a glimpse into the patterns and consequences of online gaming behavior and Facebook use reported by undergraduate students at one regional university. Among the most notable findings were the large percentages of students who reported both time lost and engaging longer than planned in online gaming activities or Facebook use. In addition, a surprisingly large percentage of students indicated that online gaming or Facebook use had negative effects on academic behaviors and social relationships.

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Appendix A

Ingram Online Gaming Survey

Informed Consent Information

Study Title: Online usage among college students: A comparison of online gaming subscribers and Facebook users.

Principal Investigator: Jonathan Ingram, Graduate, Psychology Department, Central Washington University. Email: ingramj@cwu.edu

Faculty Sponsor: Susan D. Lonborg, Ph.D., Professor of Psychology, Psychology Department, Central Washington University. (Phone: (509) 963-2397).

Please read this consent information carefully.

This research is being done to examine students'' patterns of Internet use for online gaming or social networking.

The participants must be over the age of 18, be fluent in the English language have either played an online game or used Facebook for a period of at least one month, and must currently have Internet access. We anticipate a total of 100-200 participants in the study.

Total time required to complete the study is between 15 and 20 minutes. You will be asked to provide some basic demographic information (e.g., gender, year in school) and answer survey questions about your Internet use and related experience. Your responses to the questions are anonymous.

You are a volunteer. If you do join the study and change your mind later, you may quit at any time without fear of penalty or loss of benefits by clicking on the "QUIT" button on the computer screen.

There is no foreseen risk associated with participation in this study. One potential benefit from completing the survey(s) is that participants will gain a better understanding of their patterns of Internet use. We also anticipate that results of the study will add to the growing body of literature on college students Internet use.

Please try to answer all questions honestly and thoughtfully. You may choose to leave a question blank if necessary.

Your participation in the research is documented through the Psychology departments SONA system. Should you wish to use it for extra credit; however, the availability of extra credit is between you and your course instructors.

Programs have been implemented to protect the anonymity of your answers in regard to this study. Still, online based information technology is not a guarantee of total privacy. Still, be certain though that all possible steps have been taken in order to keep your answers and identity from being traced back to you. Please close the Browser after completing the survey by using the close option in the corner of the screen. This is done in order to protect your anonymity.

By completing these survey(s) you are consenting to participate in the research.

Appendix B

Background Information Survey

(Online Gaming Version)

Please respond to each of the following questions. If you do not understand a question, you may simply skip to the next question.

1. Age: _____

2. Gender: _____ Male _____ Female

3. Ethnicity (optional):

___ African American or Black
___ American Indian or Alaska Native
___ Asian
___ Native Hawaiian or other Pacific Islander
___ Hispanic or Latino
___ Biracial / Multiracial
___ White
___ Other (please specify): _____.

4. Relationship Status

___ Single

___ In a relationship

___ Partner/Married

___ Separated/Divorced

___ None of the above

5. Living Situation

___ Live alone

___ Live with parents

___ Live with roommates

___ Live with partner/spouse and/or children

6. Year in School:

___Freshmen

___Sophomore

___Junior

___Senior

___Other, please specify: _____.

7. Please list the first 4 things you do in the morning after waking up?

1.____

2.____

3.____

4.____

8. Are you currently attending college full time (i.e., taking 12 credits or more in a quarter or semester?)

___ Yes

___ No

9. Are you currently employed?

___ No

___ Full time (40 hours or more).

___ Part time (Less than 40 hours)

Please specify number of hours: _____.

10. Did you play online games prior to attending college?

___ Yes

___ No

11. Do you know other people who play online games?

___ Yes

___ No

12. If yes, how many people do you know play online games?

___1-5

___6 - 10

___11 or more

___I do not know anyone who plays online games

13. Do individuals you are close to (i.e. friend, family, significant other, or roommate) play online games?

___ Yes

___ No

14. Have you ever played an online game (i.e., one that requires an Internet connection)?

___ Yes

___ No

IF PARTICIPANTS ANSWER "NO" TO QUESTION 14 THEY WILL BE DIRECTED TO THE DEBRIEFING PAGE TO COMPLETE THE STUDY.

15. How many years have you been playing online games?

___ Less than 1year

___1-3 years

___More than 3 years

16. On average, how many hours per week do you play online games? (please give a specific number, not a range): _____

17. In the past week, how many hours have you played online games? (please give a specific number, not a range): _____

18. During what time of day do you play online games the most? (check only one)

___Morning

___Afternoon

___Evening

___Late Evening

___No preference, it varies

19. Do you play online games more during the weekend or weekdays? (check only one)

___More on weekdays

___More on weekends

___No difference between weekdays and weekends

20. Do you pay a monthly fee to play an online game?

___ Yes

___ No

21. How were you introduced to online gaming?

___Friend

___Family Member

___Co-worker

___Roommate

___Other (please specify):_____

22. Have you ever played an online game and lost track of time while playing?

___ Yes

___ No

23. Have you ever played an online game longer than you had planned to?

___ Yes

___ No

24. Has online gaming ever affected your study habits?

___ Yes

___ No

25. Have you ever missed a class because you were playing an online game?

___ Yes

___ No

26. Have you ever missed work because you were playing an online game?

___ Yes

___ No

27. Have you ignored others around you due to being so involved in your game play?

___ Yes

___ No

28. Has a relationship ever been negatively affected due to online gaming?

___ Yes

___ No

If yes, please describe:

_____

_____.

29. Think about the ways in which you play online games. Using the categories below, please rank order from 1 ("most often") to 5 ("least often") the ways in which you play online games.

___Playing with friends

___Playing alone

___Fighting other players

___Raiding

___Meeting new people

30. Have you ever tried to quit playing online games permanently, but have gone back to play the online games again?

___ Yes

___ No

31. Does playing online games bring you a sense of excitement or challenge?

___ Yes

___ No

32. Have you ever lost a relationship, job, educational or career opportunity because of playing online games too much?

___ Yes

___ No

If yes, please describe:

_____

_____.

33. Do you feel playing online games helps you to alleviate feelings of depression, anxiety, guilt or hopelessness?

___ Yes

___ No

34. Do you have to ask others to provide funds for your gaming expenses (i.e. monthly fees)?

___ Yes

___ No

35. Do you find you have to play online games longer in order to achieve the same amount of excitement or challenge that you had experienced when you began to play online games?

___ Yes

___ No

36. Have you ever concealed the amount of time you have spent playing an online game from friends, family, or an employer?

___ Yes

___ No

37. Which of the following statements describes best your current thoughts about your use of online games?

_____ Online gaming has many benefits; I think playing online games has positively affected the quality of my life

_____ Online gaming can create problems; I think playing online games has negatively affected the quality of my life

38. How many times do you log into an online game on a typical day? (Please provide a specific number, not a range.) _____.

39. How often during the last year have you found that you were not able to stop playing online games once you had started?

___Frequently

___Occasionally

___Infrequently

___Not applicable

40. How often during the last year have you failed to do what was normally expected from you because you were playing online games?

___Frequently

___Occasionally

___Infrequently

___Not applicable

41. How often during the last year have you had a feeling of guilt or remorse after playing online games?

___Frequently

___Occasionally

___Infrequently

___Not applicable

42. Has someone else been negatively affected as a result of your online gaming?

___ No

___ Yes

If yes, please describe:

_____

_____.

43. Has someone you know (e.g., relative or friend) been concerned about your gaming or suggested you cut down on playing online games?

___ Yes

___ No

44. Have you ever felt you should cut down on your online gaming?

___ Yes

___ No

If yes, please describe:

_____

_____.

45. Have people annoyed you by criticizing your online gaming?

___ Yes

___ No

Appendix C

Ingram Online Gaming Survey

Post-Study Information

Internet Use Study

Principal Investigator: Jonathan Ingram, Graduate, Psychology Department, Central Washington University. Email: ingramj@cwu.edu

Faculty Sponsor: Susan D. Lonborg, Ph.D., Professor of Psychology, Psychology Department, Central Washington University. (Phone: (509) 963-2397). Email: Lonborg@cwu.edu.

Purpose of the Study

The purpose of the current study was to compare college students' patterns of use of traditional online games such as MMORPGS and social networking sites such as Facebook. We anticipate that, the results from the survey(s) will help to understand if any general trends could be seen from the results in regard to online usage in a rural university town.

We anticipate that the final results of this study will be posted on the faculty sponsors web page (www.cwu.edu~lonborg) during Fall 2011. Also, please understand that the final results will be posted as a group analysis, which will prevent any information from being traced back to a single participant.

Thank you for your participation!

Appendix D

Ingram Facebook Survey

Informed Consent

Study Title: Online usage among college students: A comparison of online gaming subscribers and Facebook users.

Principal Investigator: Jonathan Ingram, Graduate, Psychology Department, Central Washington University. Email: ingramj@cwu.edu

Faculty Sponsor: Susan D. Lonborg, Ph.D., Professor of Psychology, Psychology Department, Central Washington University. (Phone: (509) 963-2397).

Please read this consent information carefully.

This research is being done to examine students'' patterns of Internet use for online gaming or social networking.

The participants must be over the age of 18, be fluent in the English language have either played an online game or used Facebook for a period of at least one month, and must currently have Internet access. We anticipate a total of 100-200 participants in the study.

Total time required to complete the study is between 15 and 20 minutes. You will be asked to provide some basic demographic information (e.g., gender, year in school) and answer survey questions about your Internet use and related experience. Your responses to the questions are anonymous.

You are a volunteer. If you do join the study and change your mind later, you may quit at any time without fear of penalty or loss of benefits by clicking on the "QUIT" button on the computer screen.

There is no foreseen risk associated with participation in this study. One potential benefit from completing the survey(s) is that participants will gain a better understanding of their patterns of Internet use. We also anticipate that results of the study will add to the growing body of literature on college students Internet use.

Please try to answer all questions honestly and thoughtfully. You may choose to leave a question blank if necessary.

Your participation in the research is documented through the Psychology departments SONA system. Should you wish to use it for extra credit; however, the availability of extra credit is between you and your course instructors.

Programs have been implemented to protect the anonymity of your answers in regard to this study. Still, online based information technology is not a guarantee of total privacy. Still, be certain though that all possible steps have been taken in order to keep your answers and identity from being traced back to you. Please close the Browser after completing the survey by using the close option in the corner of the screen. This is done in order to protect your anonymity.

By completing these survey(s) you are consenting to participate in the research.

Appendix E

Background Information Survey

(Facebook Version)

Please respond to each of the following questions. If you do not understand a question, you may simply skip to the next question.

1. Age: ____

2. Gender: _____ Male _____ Female

3. Ethnicity (optional):

___ African American or Black
___ American Indian or Alaska Native
___ Asian
___ Native Hawaiian or other Pacific Islander
___ Hispanic or Latino
___ Biracial / Multiracial
___ White
___ Other (please specify): _____.

4. Relationship Status

___ Single

___ In a relationship

___ Partner/Married

___ Separated/Divorced

___ None of the above

5. Living Situation

___ Live alone

___ Live with parents

___ Live with roommates

___ Live with partner/spouse and/or children

6. Year in School:

___Freshmen

___Sophomore

___Junior

___Senior

___Other, please specify: _____.

7. Please list the first 4 things you do in the morning after waking up?

Please list:

1.____

2.____

3.____

4.____

8. Are you currently attending college full time (i.e., taking 12 credits or more in a quarter or semester?)

___ Yes

___ No

9. Are you currently employed?

___ No

___ Full time (40 hours or more).

___ Part time (Less than 40 hours)

Please specify number of hours: _____.

10. Did you have a Facebook account prior to attending college?

___ Yes

___ No

11. Do you know other people who have a Facebook account?

___ Yes

___ No

12. If yes, how many people do you know personally that have a Facebook account?

___1-50

___51-100

___101 or more

___I do not know anyone who uses Facebook

13. Do individuals you are close to (i.e. friend, family, significant other, or roommate) use Facebook actively (more than 10 hours a week)?

___ Yes

___ No

14. Do you currently have an active Facebook account?

___ Yes

___ No

IF PARTICIPANTS ANSWER "NO" TO QUESTION 14 THEY WILL BE DIRECTED TO THE DEBRIEFING PAGE TO COMPLETE THE STUDY.

15. How long have you been using Facebook?

___ Less than a year

___1-3 years

___More than 3 years

16. On average approximately, how many hours per week do you use Facebook? (please give a specific number, not a range).____

17. In the <u>past week</u>, approximately how many hours have you used Facebook? (please give a specific number, not a range).____

18. During what time of day do you sign into Facebook the most? (check only one)

___Morning

___Afternoon

___Evening

___Late Evening

___No preference, it varies

19. Do you use Facebook more during the weekend or weekdays? (check only one)

___More on weekdays

___More on weekends

___No difference between weekdays and weekends

20. How were you introduced to Facebook?

___Friend

___Family Member

___Co-worker

___Roommate

___Classmate

___Other (please specify):_____

21. Have you ever used Facebook and lost track of time while browsing?

___ Yes

___ No

22. Have you ever spent a longer time on Facebook than you had planned?

___ No

___ Yes

23. Has the time you spent on Facebook ever affected your study habits?

___ No

___ Yes

24. Have you ever missed a class because you were browsing or playing games on Facebook?

___ No

___ Yes

25. Have you ever missed work because you were browsing or playing games on Facebook?

___ Yes

___ No

26. Have you ignored others around you due to being so involved in using Facebook?

___ Yes

___ No

27. Has a relationship ever been negatively affected due to Facebook?

___ Yes

___ No

If yes, please describe:

_____

_____.

28. Think about the ways in which you use Facebook. Using the categories below, please rank order from 1 ("most often") to 7 ("least often) the ways in which you use Facebook.

___Browsing friends' pages

___Posting on friends' pages

___Responding to friends' quizzes

___Playing games (e.g., Farmville)

___Posting information about self

___Meeting new people

___Sending private messages

29. Is your profile placed on private settings?

___ Yes

___ Not sure

___ No

30. Do only those you have "friended" have access to your Facebook page?

___ No

___ Yes

___ Not sure

31. Have you ever tried to quit using Facebook permanently, but have gone back to using Facebook again?

___ No

___ Yes

32. Does using Facebook bring you a sense of excitement or challenge?

___ No

___ Yes

33. Have you ever lost a relationship, job, educational or career opportunity because of excessive Facebook usage?

___ Yes

___ No

If yes, please describe:

_____

_____.

34. Do you feel using Facebook helps you to alleviate feelings of depression, anxiety, guilt or hopelessness?

___ No

___ Yes

35. Do you have to ask others to provide funds for your Facebook expenses (e.g., fees for wall papers or applications)?

___ No

___ Yes

36. Do you find you have to use Facebook longer in order to achieve the same amount of excitement or challenge that you had experienced when you began to use Facebook?

___ Yes

___ No

37. Have you ever concealed the amount of time you have spent using Facebook from friends, family, or an employer?

___ Yes

___ No

38. Have you ever lost a relationship, job, education, or career opportunity because of information you posted on Facebook?

___ Yes

___ No

If yes, please describe: _____

_____.

39. Have you ever lost a relationship, job, education, or career opportunity because of information someone else posted about you on Facebook?

___ Yes

___ No

If yes, please describe: _____

_____.

40. Which of the following statements describes best your current thoughts about your Facebook use?

_____ Facebook has many benefits; I think using Facebook has positively affected the quality of my life

_____ Facebook can create problems; I think using Facebook has negatively affected the quality of my life

41. How many times do you log into your Facebook account on a typical day? (Please provide a specific number, not a range.) _____.

42. How often during the last year have you found that you were not able to stop using Facebook once you had started?

___Frequently

___Occasionally

___Infrequently

___Not applicable

43. How often during the last year have you failed to do what was normally expected from you because you were using Facebook?

___Frequently

___Occasionally

___Infrequently

___Not applicable

44. How often during the last year have you had a feeling of guilt or remorse after using Facebook?

___Frequently

___Occasionally

___Infrequently

___Not applicable

45. Has someone else been negatively affected as a result of your Facebook usage?

___ Yes

___ No

If yes, please describe:

_____

_____.

46. Has someone you know (e.g., relative or friend) been concerned about your Facebook usage or suggested you cut down on using Facebook?

___ No

___ Yes

47. Have you ever felt you should cut down on your Facebook usage?

___ No

___ Yes

If yes, please describe:

_____

_____.

48. Have people annoyed you by criticizing your Facebook usage?

___ No

___ Yes

Appendix F

Ingram Facebook Survey

Post-Study Information

Internet Use Study

Principal Investigator: Jonathan Ingram, Graduate, Psychology Department, Central Washington University. Email: ingramj@cwu.edu

Faculty Sponsor: Susan D. Lonborg, Ph.D., Professor of Psychology, Psychology Department, Central Washington University. (Phone: (509) 963-2397). Email: Lonborg@cwu.edu.

Purpose of the Study

The purpose of the current study was to compare college students' patterns of use of traditional online games such as MMORPGS and social networking sites such as Facebook. We anticipate that, the results from the survey(s) will help to understand if any general trends could be seen from the results in regard to online usage in a rural university town.

We anticipate that the final results of this study will be posted on the faculty sponsors web page (www.cwu.edu~lonborg) during Fall 2011. Also, please understand that the final results will be posted as a group analysis, which will prevent any information from being traced back to a single participant.

Thank you for your participation!

Appendix G

Additional Study 1 and Study 2 Tables

Table 9

Summary of Participants' Online Gaming Experiences and Behaviors

Variable	Level	*N*	%	*M*±*SD*
Played previously	Yes	48	69.6	
	No	21	30.4	
Know gamers	Yes	69	100.0	
	No	0	0.0	
• If Yes, how many?	1-5	26	37.7	
	6-10	18	26.1	
	11 or more	25	36.2	
	None	0	0.0	
Close circle plays	Yes	57	82.6	
	No	12	17.4	
Have ever played	Yes	69	100.0	
	No	0	0.0	
Years played	Less than 1 year	24	34.8	
	1-3 years	22	31.9	
	Over 3 years	22	31.9	

Table 9 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Average hours played per week		-	-	5.41±8.23
Hours played in the past week		-	-	4.72±9.25
Time of day played most often	Morning	0	0.0	
	Afternoon	12	17.4	
	Evening	17	24.6	
	Late evening	20	29.0	
	No preference/it varies	19	27.5	
Play more on weekdays or weekends	Weekdays	23	33.3	
	Weekends	22	31.9	
	No difference	23	33.3	
Pay a monthly fee to play	Yes	12	17.4	
	No	57	82.6	

Table 9 (continued.)

Variable	Level	*N*	%	*M*±*SD*
How introduced to online gaming	Friend	49	71.0	
	Family member	9	13.0	
	Co-Worker	0	0.0	
	Roommate	3	4.3	
	Other	7	10.1	
• If other, then how?	Advertisement	1	1.4	
	Boyfriend	1	1.4	
	Browsing Internet	1	1.4	
	Found myself	1	1.4	
	Gift	1	1.4	
	Came across	1	1.4	
	Online	1	1.4	
Lost track of time while gaming	No	14	20.3	
	Yes	54	78.3	
Played longer than planned	No	6	8.7	
	Yes	63	91.3	
Study habits are negatively affected	No	35	50.7	
	Yes	34	49.3	

Table 9 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Playing and missed class	No	65	94.2	
	Yes	4	5.8	
Playing and missed work	No	66	95.7	
	Yes	3	4.3	
Ignored others while playing	No	47	68.1	
	Yes	22	31.9	
Relationship negatively affected by gaming	No	63	91.3	
	Yes	6	8.7	
Play online games with friends (ranked)	1 (Most often)	29	42.0	
	2	20	29.0	
	3	4	5.8	
	4	4	5.8	
	5 (Least often)	3	4.3	
Play online games alone (ranked)	1 (Most often)	21	30.4	
	2	16	23.2	
	3	11	15.9	
	4	10	14.5	
	5 (Least often)	2	2.9	

Table 9 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Play online games fighting other players (ranked)	1 (Most often)	11	15.9	
	2	9	13.0	
	3	12	17.4	
	4	12	17.4	
	5 (Least often)	14	20.3	
Play online games raiding others (ranked)	1 (Most often)	2	2.9	
	2	4	5.8	
	3	14	20.3	
	4	20	29.0	
	5 (Least often)	20	29.0	
Play online games to meet new people (ranked)	1 (Most often)	2	2.9	
	2	9	13.0	
	3	16	23.2	
	4	15	21.7	
	5 (Least often)	23	33.3	
Gone back to gaming	No	63	91.3	
	Yes	5	7.2	
Gaming for excitement/challenge	No	22	31.9	
	Yes	46	66.7	

Table 9 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Losses of due to gaming (e.g., relationship, job)	No	65	94.2	
	Yes	3	4.3	
• If Yes, please describe	Staying up late has cost me jobs	1	1.4	
Gaming alleviates feelings	No	47	68.1	
	Yes	21	30.4	
Others pay for my gaming	No	65	94.2	
	Yes	3	4.3	
Play longer to achieve	No	63	91.3	
	Yes	5	7.2	
Concealed time spent gaming	No	52	75.4	
	Yes	16	23.2	
Current thoughts about gaming	Creates problems	47	68.1	
	Many benefits	14	20.3	
Times logged on in a day		-	-	1.46±1.60

Table 9 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Not able to stop	Frequently	2	2.9	
	Occasionally	8	11.6	
	Infrequently	38	55.1	
	Not Applicable	20	29.0	
Failed to meet normal expectations	Frequently	0	0.00	
	Occasionally	5	7.2	
	Infrequently	41	59.4	
	Not Applicable	22	31.9	
Feelings of guilt or remorse	Frequently	0	0.0	
	Occasionally	8	11.6	
	Infrequently	31	44.9	
	Not Applicable	29	42.0	
Someone negatively affected by my gaming	No	3	4.3	
	Yes	65	94.2	
• If Yes, please describe	Failed out of university due to playing on Xbox Live	1	1.4	
	Lack of sleep	1	1.4	
	Best friend's parents had an intervention	1	1.4	

Table 9 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Someone suggested cutting down	No	59	85.5	
	Yes	9	13.0	
Felt I should cut down	No	54	78.3	
	Yes	14	20.3	
• If yes, please describe	Focus on school.	1	1.4	
	Pretty disciplined with perceived weaknesses	1	1.4	
	More productive with less gaming, but has it under control	1	1.4	
	Stopped after 3 months of WOW consuming more time	1	1.4	
	Too much time on farming in in Facebook	1	1.4	
	Affects my study.	1	1.4	
	Competes with constructive ambitions	1	1.4	
	Get more physical activity	1	1.4	
	Get more school work done and be more social.	1	1.4	
	More time to study, do homework and work out.	1	1.4	

Table 9 (continued.)

Variable	Level	*N*	%	*M*±*SD*
	Feel I dedicate more time than I should to online gaming. Friends want me to play even though I should say no. Everyone enjoys my company online as they do in real life so I do it to converse with people.	1	1.4	
	Yes and I have to do school… online gaming is something I do to pass dead time. But too busy with school now so it is not really present in my life.	1	1.4	
Annoyed by criticism	No	54	78.3	
	Yes	14	20.3	

Table 10

Summary of First Four Things in the Morning Done by Online Gamers

Variable	Category	Level	*N*	%
First Thing	Aid Others	Take dog out	1	1.4
	Dietary Intake	Drink beverage	2	2.8
		Eat food	2	2.9
		Take medication	1	1.4
	Educational Tasks	Finish homework	1	1.4
	Electronic Usage	Quiet alarm	2	2.8
		Check e-mail	1	1.4
		Check phone	3	4.2
		Get on computer	1	1.4
		Play games	1	1.4
		Turn on ESPN	1	1.4
	Personal Hygiene	Use shower	21	30.3
		Use bathroom /toilet	15	21.3
		Brush teeth	7	9.9
		Wash up	2	2.8
	Personal Maintenance	Change/dress	5	5.7
		Go to gym	1	1.4
		Sleep in	1	1.4
	Personal Mood	Get mad	1	1.0
Second Thing	Aid Others	Wake children	1	1.4
	Dietary Intake	Drink beverage	4	5.7
		Eat food	4	5.7
	Electronic Usage	Get on computer	4	5.6
		Check Facebook	3	4.2
		Use Pandora	1	1.4
		Watch TV	1	1.4

Table 10 (continued.)

Variable	Category	Level	*N*	%
Second Thing	Personal Hygiene	Brush teeth	16	23.0
		Shower	13	18.6
		Use bathroom	3	4.2
		Deodorant	2	2.8
		Shave	1	1.4
	Personal Maintenance	Change/dress	13	20.0
		Put in contacts	2	2.0
		Clean self-up	1	1.4
		Make bed	1	1.4
		Put makeup on	1	1.4
Third Thing	Dietary Intake	Eat food	10	14.3
		Drink beverage	3	4.2
	Educational Tasks	Go to class	3	4.2
		Go to Tuba warm up	1	1.4
	Electronic Usage	Check e-mail	5	7.0
		Listen to music	3	4.2
		Check Facebook	2	2.8
		Browse Internet	1	1.4
		Check cell phone	1	1.4
		Check tech blog	1	1.4
		Turn on computer	1	1.4
	Personal Hygiene	Shower	10	14.4
		Brush teeth	5	7.1
		Use bathroom	4	5.6
		Wash face	2	2.9
	Personal Maintenance	Do hair	11	15.6
		Change/dress	7	10.1
		Put makeup on	2	2.9
		Make bed	1	1.4
		Put in contact	1	1.4
	Recreational Usage	Have cigarette	1	1.4

Table 10 (continued.)

Variable	Category	Level	*N*	%
Fourth Thing	Aid Others	Call girlfriend	2	2.9
	Dietary Intake	Eat food	13	18.6
		Drink beverage	2	2.8
	Educational Tasks	Go to class	7	10.1
		Get ready for day/class	4	5.6
		Do homework	1	1.4
	Electronic Usage	Watch TV	3	4.2
		Check e-mail	2	2.8
		Check phone	1	1.4
		Open computer	1	1.4
		Play words with friends	1	1.4
		Read Twitter	1	1.4
		Text	1	1.4
		Turn off lights	1	1.4
	Personal Hygiene	Brush teeth	6	8.6
		Shower	1	1.4
	Personal Maintenance	Change/dress	12	17.3
		Put makeup on	5	7.0
		Do hair	4	5.7
		Light workout	1	1.4

Table 11

Summary of Participants' Facebook Experiences and Behaviors

Variable	Level	*N*	%	*M*±*SD*
Had Facebook prior to college	Yes	76	78.4	
	No	21	21.6	
Know others with Facebook account	Yes	97	100.0	
	No	0	0.0	
• If Yes, how many others	1-50	7	7.2	
	51-100	13	13.4	
	101 or more	76	78.4	
Close circle uses Facebook	Yes	96	99.0	
	No	0	0.0	
Current Facebook account	Yes	97	100.0	
	No	0	0.0	

Table 11 (continued.)

Variable	Level	*N*	%	*M*±*SD*
How long using Facebook	Less than 1 year	4	4.1	
	1-3 years	56	57.7	
	Over 3 years	37	38.1	
Average weekly hours on Facebook		-	-	9.50±11.37
Past week's hours on Facebook		-	-	7.63±8.75
Time of day most often on Facebook	Morning	7	7.2	
	Afternoon	12	12.4	
	Evening	24	24.7	
	Late evening	20	20.6	
	No preference/it varies	34	35.1	
Use Facebook more on weekdays or weekends	Weekdays	50	51.5	
	Weekends	11	11.3	
	No difference	36	37.1	

Table 11 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Introduced To Facebook	Friend	76	78.4	
	Family member	14	14.4	
	Co-Worker	0	0.0	
	Roommate	1	1.0	
	Classmate	2	2.1	
	Other	3	3.1	
• If other, please describe	Counselor	1	1.0	
	Technology class	1	1.0	
	Fiancé	1	1.0	
Used Facebook and lost track of time	No	77	79.4	
	Yes	20	20.6	
Used Facebook longer than planned	No	8	8.2	
	Yes	89	91.8	
Study habits negatively affected	No	41	42.3	
	Yes	56	57.7	
Facebook usage and missed class	No	95	97.9	
	Yes	2	2.1	
Facebook usage and missed work	No	6	6.2	
	Yes	91	93.8	

Table 11 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Ignored others while using Facebook	No	56	57.7	
	Yes	39	40.2	
Relationship negatively affected	No	71	73.2	
	Yes	26	26.8	
• If Yes, please describe	Bad picture	1	1.0	
	Doesn't listen to due to ADD so hard to get out of things being focused on	1	1.0	
	Bugged by boyfriend to get busy but would rather Facebook	1	1.0	
	Browsing boyfriends Facebook made me question him more and be more insecure.	1	1.	
	Certain comments by other girls on boyfriend's page.	1	1.0	
	Comments by other girls make my girlfriends jealous.	1	1.0	
	Didn't like some of the comments from other people.	1	1.0	
	Ex-boyfriend was talking to other girls on Facebook.	1	1.0	

Table 11 (continued.)

Variable	Level	*N*	%	*M*±*SD*
	Facebook causes problems with relationships because it is a way of looking at who is talking to your spouse and you may not be okay with what is being said or who is contacting them via Facebook.	1	1.0	
	Girlfriend was paranoid about me talking to other girls.	1	1.0	
	Found out ex-boyfriend was cheating on me. Actually would consider a positive now but back then a negative. At least I found out.	1	1.0	
	Saw a picture I was not okay with that someone else had posted and hid from me.	1	1.0	
	Often have an hour or two free in a day to spend with my husband at night… sometimes I will miss out on this opportunity due to losing track of time on Facebook.	1	1.0	

Table 11 (continued.)

Variable	Level	*N*	%	*M*±*SD*
	Jealousy. My ex would always check on who I was friends with and become obsessive about my goings on that were posted on Facebook. I felt like I had to hide what I was doing and being secretive made me feel less than healthy in my relationship.	1	1.0	
	People seeing things written on my wall that gets me in trouble with my current relationships.	1	1.0	
	Seeing pictures of my ex boyfriend with girls who he had cheated on me with before parties.	1	1.0	
	She doesn't like other girls talking to me and it is difficult to keep friendships with the opposite sex that way.	1	1.0	
	Too much info being posted.	1	1.0	

Table 11 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Facebook use: Browsing friends' pages	1 (Most Often)	43	44.3	
	2	17	17.5	
	3	15	15.5	
	4	5	5.2	
	5	4	4.1	
	6	3	3.1	
	7 (Least Often)	1	1.0	
Facebook use: Posting on friends' pages	1 (Most Often)	6	6.2	
	2	36	37.1	
	3	19	19.6	
	4	8	8.2	
	5	9	9.3	
	6	4	4.1	
	7 (Least Often)	0	0.0	
Facebook use: Responding to friends' quizzes	1 (Most Often)	2	2.1	
	2	2	2.1	
	3	4	4.1	
	4	2	2.1	
	5	16	16.5	
	6	28	28.9	
	7 (Least Often)	21	21.6	

Table 11 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Facebook use: Playing games	1 (Most Often)	7	7.2	
	2	2	2.1	
	3	4	4.1	
	4	6	6.2	
	5	16	16.5	
	6	15	15.5	
	7 (Least Often)	33	34.0	
Facebook use: Posting information	1 (Most Often)	13	13.4	
	2	12	12.4	
	3	18	18.6	
	4	22	22.7	
	5	13	13.4	
	6	10	10.3	
	7 (Least Often)	2	2.1	
Facebook use: Meeting new people	1 (Most Often)	2	2.1	
	2	3	3.1	
	3	12	12.4	
	4	17	17.5	
	5	14	14.4	
	6	14	14.4	
	7 (Least Often)	29	29.9	

Table 11 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Facebook use: Sending private messages	1 (Most Often)	12	12.4	
	2	14	14.4	
	3	15	15.5	
	4	27	27.8	
	5	13	13.4	
	6	11	11.3	
	7 (Least Often)	3	3.1	
Private setting used	No	81	81.3	
	Not Sure	9	9.3	
	Yes	7	7.2	
Only friends have access to your page	No	80	82.5	
	Not Sure	10	10.3	
	Yes	7	7.2	
Quit and gone one back to Facebook	No	85	87.6	
	Yes	12	12.4	
Facebook use for excitement/challenge	No	73	75.3	
	Yes	24	24.7	
Loss of relationship, job, etc.	No	95	97.9	
	Yes	2	2.1	
Facebook use alleviates feelings	No	18	18.6	
	Yes	79	81.4	

Table 11 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Others pay for my Facebook	No	94	96.9	
	Yes	2	2.1	
Use longer to achieve	No	89	91.8	
	Yes	8	8.2	
Concealed time spent on Facebook	No	79	81.4	
Time	Yes	18	18.6	
Lost an opportunity due to information	No	95	97.9	
I posted on Facebook	Yes	2	2.1	
Lost an opportunity due to information	No	5	5.2	
others posted about me	Yes	92	94.8	
Current thinking about Facebook	Creates problems	12	12.4	
	Many benefits	84	86.6	
Times logged on to Facebook in a day		-	-	4.21±3.51
Not able to stop using Facebook	Frequently	6	6.2	
	Occasionally	21	21.6	
	Infrequently	45	46.4	
	Not Applicable	25	25.8	

Table 11 (continued.)

Variable	Level	*N*	%	*M*±*SD*
Failed to meet normal expectations	Frequently	1	1.0	
	Occasionally	14	14.4	
	Infrequently	58	59.8	
	Not Applicable	23	23.7	
Feelings of guilt and remorse about use	Frequently	0	0.0	
	Occasionally	11	11.3	
	Infrequently	49	50.5	
	Not Applicable	37	38.1	
Someone negatively affected	No	87	89.7	
	Yes	9	9.3	
Someone suggested cutting down	No	89	91.8	
	Yes	7	7.2	
Felt you should cut down	No	60	61.9	
	Yes	36	37.1	
Annoyed by criticism of use	No	85	87.6	
	Yes	11	11.3	

Table 12

Summary of First Four Things in the Morning Done by Facebook Users

Variable	Category	Level	*N*	%
First Thing	Aid to Others	Let dog out	1	1.0
		Wake girlfriend	1	1.0
	Dietary Intake	Eat food	7	7.1
		Drink beverage	5	5.0
	Electronic Usage	Quiet alarm	5	5.0
		Check e-mail	2	2.0
		Check Facebook	3	3.0
		Check phone	3	3.0
		Check e-mail	2	2.0
		Play video game	1	1.0
		Turn on VH1	1	1.0
	Personal Hygiene	Use bathroom/toilet	21	21.4
		Use shower	20	20.6
		Brush teeth	7	7.2
		Wash face	3	3.0
	Personal Maintenance	Change/dress	8	8.2
		Make bed	2	2.1
		Put in contacts	2	2.0
		Work out	2	2.0
		Stretch	1	1.0
		Get out of bed	1	1.0
	Personal Mood	Get mad	1	1.0
Second Thing	Aid to Others	Wake boyfriend	1	1.0
	Dietary Intake	Eat food	11	11.4
		Drink coffee	4	4.1
		Take vitamins	1	1.0
	Electronic Usage	Check e-mail	5	5.0
		Check Facebook	2	2.1
		Look over e-bay acct	1	1.0

Table 12 (continued.)

Variable	Category	Level	*N*	%
	Personal Hygiene	Brush teeth	23	23.7
		Shower	17	17.5
		Use bathroom	6	6.2
		Wash face	4	4.1
		Shave	1	1.0
	Personal Maintenance	Change/dress	13	13.2
		Put makeup on	4	4.0
		Put in contacts	2	2.0
		Do hair	1	1.0
	Recreational Usage	Smoke cigarettes	1	1.0
Third Thing	Aid to Others	Get/let/take out dog	4	4.0
		Get son ready	1	1.0
	Dietary Intake	Eat food	9	9.2
		Drink coffee	3	3.1
	Educational Tasks	Get ready for class	2	2.0
		Pack items/backpack	2	2.0
		Homework	1	1.0
	Electronic Usage	Check Facebook	6	6.1
		Use computer	3	3.0
		Check e-mail	2	2.0
		Listen to music	1	1.0
		Watch TV	1	1.0
	Personal Hygiene	Brush teeth	14	14.4
		Shower	6	6.2
		Use bathroom	4	4.0
		Wash face	4	4.1
		Put on deodorant	1	1.0

Table 12 (continued.)

Variable	Category	Level	*N*	%
	Personal Maintenance	Change/dress	12	12.4
		Do hair	6	6.0
		Get ready	4	4.2
		Put makeup on	7	7.0
		Put in contacts	1	1.0
	Reading	Read	1	1.0
	Recreational Usage	Smoke	2	2.0
Fourth Thing	Dietary Intake	Eat food	19	19.5
		Drink coffee/water	2	2.0
		Make tea	1	1.0
		Take supplements	1	1.0
	Educational Tasks	Get ready for day	3	3.0
		Go to class	3	3.0
		Pack backpack	2	2.0
		Study	1	1.0
		Grab books for class	1	1.0
	Electronic Usage	Check e-mail	7	7.0
		Check Facebook	5	5.0
		Get on laptop	1	1.0
		Press snooze button	1	1.0
		Stream TV show	1	1.0
		Turn on music	1	1.0
	Employment Tasks	Go to work	1	1.0
	Personal Hygiene	Brush teeth	6	6.2
		Shower	6	6.1
		Wash face	2	2.0
	Personal Maintenance	Change/dress	18	18.4
		Do hair	8	8.0
		Make bed	1	1.0
		Put makeup on	5	5.0

Table 12 (continued.)

Variable	Category	Level	*N*	%
	Reading	Read bible	1	1.0
		Read the news	1	1.0