

+1 Friend Request: The Internet and Social Support

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Abstract. Facebook and online subscription-based games have become increasingly prevalent aspects of college life and a notable alternative to face-to-face interaction between students. To better understand the role these platforms play in college students' social support networks, we administered an online survey questionnaire testing three hypotheses: 1) students with higher levels of offline social support have higher levels of social support from Facebook use; 2) students with higher levels of offline social support have lower levels of social support from online game use; and 3) students with higher levels of Facebook avidity have higher levels of social support from Facebook use. Only the third hypothesis was supported by the survey results.

As college students move away from their homes and social support networks of family and high school friends, many rely increasingly on the internet to maintain communication. Internet communication, which many college students accomplish through Facebook use, is not limited to those geographically removed, but includes friends living as close as the room next door. Facebook is an overwhelmingly popular social networking site (SNS), with over 90% of college students having a Facebook account (Ellison, Steinfield, and Lampe 2007). As the popularity of Facebook has increased, so has the interest in researching it. There are, however, still significant gaps in this research, especially on the ability of Facebook to serve as a platform for social support provision, which our study intends to investigate.

Another tool used by many college students for communication is online game play. However, far less research has been conducted on online gaming than on Facebook, perhaps due to hostility within the gamer community towards outside research, which gamers believe may ultimately change the nature of game play (Cole and Griffiths 2007). Because of the lack of research on the relationship between online gaming and social support, and the importance of online game play to many college students, our study also investigates the ability of online games to provide social support.

Definitions of Social Support

Because there is no consensus on the proper definition of social support (Lewandowski and Hill 2009), researchers measure multiple aspects of social support in order to more fully encompass its many facets. Examples of indicators used commonly in social support research

include tangible support, informational support, belonging, emotional support, esteem enhancing support, disclosure, and social intimacy (Eshbaugh 2008; Antle, Montgomery, and Stapleford 2009; Sjölander and Berterö 2008; Peterson, Yates, and Hertzog 2008; Hale, Hannum, Espelage 2005). Researchers also distinguish between perceived social support (the support one believes he or she is receiving) and received social support (the support one actually receives to satisfy needs) (Peterson, Yates, and Hertzog 2008). Although the definition of social support varies widely, the providers of social support are most commonly defined as family, friends, and significant others (Eshbaugh 2008).

The Internet and Social Support

Recent research has investigated the relationship between online and offline worlds, and has reported that these two worlds share many factors, one of which is friend groups (Subrahmanyam, Reich, Espinoza, Waechter 2008). One study found that although 35% of the participants established friendships online, they mainly used social networking sites for keeping in touch with offline friends and seeking dates for offline meetings (Valkenburg, Peter, and Schouter 2006). Using the internet for communication with friends met on the internet, as opposed to friends met offline, was also linked to depression (Bessiere, Kiesler, Kraut, and Bonevea 2008). Overall, online communication with people in one's offline social support network decreased depression levels and worked to reinforce already tangible relationships. Thus, it is important for one's online friends to overlap with one's offline friends in order for the internet to provide a fully beneficial form of social support.

A qualitative study by Pfeil, Zaphiris, and Wilson (2009) examined the perceived benefits and disadvantages of using the internet as a means of acquiring social support for older adults in topic-focused online communities, such as an online support group for divorcees. Within topic-focused online communities, supporters have the benefit of speaking with others who have experience in coping with similar issues. However, most participants in the study felt online self-disclosure was more difficult because trust is hard to establish online, and most found deep support (support responding to a specific crisis in an online support group member's life) difficult online due to the lack of a physical co-presence. Light support (messages of support applicable to the general support community) was also limited online because humor, which is important to light support, is easily misunderstood in online communication. Therefore, while membership in topic-specific support communities provides access to a group of other individuals with similar experiences, the nature of online communication makes both light and heavy support difficult.

As explained later, our research uses measures similar to light and heavy support in order to differentiate between the levels of support available in online communication.

Besides the support of topic-focused online communities, another benefit of internet use that has been explored is an increase in self-esteem, particularly through use of the internet for communication rather than for information acquisition. For example, high self-esteem seems to be a characteristic of students who use the internet as a communicative tool, though a causal relationship is unclear (Rohall, Cotten, and Morgan 2002). Another study that focused on the benefits of internet use focused on Dutch adolescents and found that self-esteem is largely dependent on the nature of feedback within online communicative relationships; positive feedback seems to foster positive self-esteem (Valkenburg, Peter, Schouten 2006).

One study brought the positive results of internet use into question by initially finding an association between increased internet use and negative psychological outcomes, such as stress, loneliness, a decrease in social circles (Kraut, Patterson, Lundmark, Kiesler, Mukhopadhyaya, and Scherlis 1998), but this correlation was dismissed in a follow-up longitudinal study (Kraut, Kiesler, Boneva, Cummings, Helgeson, and Crawford 2002). This follow-up study also found that those with a higher perceived level of social support experienced a greater increase in familial communication with increased internet use, suggesting that the internet is a tool that can enhance the social relationships of individuals with preexisting high levels of social support (Kraut et. al 2002). Another study also investigated social support in conjunction with internet use, specifically how social support is related to the types of relationships individuals have with online chat partners (Subrahmanyam and Lin 2007). However, the study found no relationship between adolescents' perceived social support and their familiarity with online chat partners.

While the previous two studies acknowledged the importance of social support in shaping participants' experiences with the internet, neither took into account the potential social support that can be gained through internet use. Our study, unlike past research, measures social support acquired online in order to investigate the relationship between perceived offline social support and perceived social support acquired through online communication. Because past researchers have not measured social support acquired through online communication, we created original indexes for this study, as described later.

One online communication technology important for investigating the relationship between offline and online social support is Facebook, a social networking site widely used in college settings. Ellison et al. (2007) investigated the positive aspects of having Facebook friends. The study researched bonding social capital, a measure of the level of integration and

social support within the college community. This type of social capital was measured based on responses to statements such as, "There is someone at [my college] that I can turn to for advice about making very important decisions." While general use of the internet was not associated with social capital, the study found that Facebook use results in the creation of social capital. However, Ellison et al. (2007) acknowledge that Facebook may contribute more to creating weak ties than to developing the close relationships associated with bonding social capital. On the other hand, a qualitative study by Hoffman (2008) found that Facebook does create weak social ties between Facebook users and casual acquaintances, but also serves as a tool for enhancing strong offline relationships on a college campus. Our study responds to Hoffman's suggestion for a quantitative study that further researches the role Facebook plays in college social life by investigating the relationship between college students' levels of offline social support and the social support they receive through Facebook.

Another online communication tool utilized by many college students are subscription-based online games. Research suggests that one reason some individuals commit so much time to online game-play is a fear of face-to-face rejection and a deficiency in the skills needed to foster good relationships (Peters and Malesky 2008). However, the online gaming world has been found to be a more comfortable conversational setting for many. For example, one study found that 40% of players of MMORPGs (massively multiplayer online role play games) discussed sensitive issues with online gaming friends during the course of game play (through text or voice chat) that they would not discuss with offline friends (Cole and Griffiths 2007). This study also found that even though women represent a small portion of total gamers, they were significantly more likely to share sensitive matters online. In addition, 81% of gamers play with real-life friends and family, which further supports the highly social nature of online games. The small guilds (task-oriented groups) found in online games also provide venues for gamers to disclose problems, illicit advice, and seek social connections from a broad range of experiences in relative anonymity. Because past research demonstrates that subscription-based online games serve as a platform for communication, and no research has specifically measured social support acquired through online game play, we also investigate the relationship between offline social support and social support acquired through online games.

Methodology

Data were collected as part of a larger self-administered online questionnaire survey of social support among students at St. Olaf College, a small, private, Lutheran affiliated liberal-arts institution in the Midwest, in November of 2009. After considering the relevant scholarly

literature and conducting a focus group, we developed three hypotheses: 1) students with higher levels of offline social support have higher levels of social support from Facebook use; 2) students with higher levels of offline social support have lower levels of social support from online game use; and 3) students with higher levels of Facebook avidity (frequency and intensity of Facebook use) have higher levels of social support from Facebook use.

Measures

One independent variable in our research was participants' level of offline social support, which was measured using a four-item, four-point Likert scale index with choices ranging from 'Strongly Agree' to 'Strongly Disagree.' We included one item for each of the four indicators of social support being investigated: advice-seeking support (*I do **not** know anyone who would meet with me in-person to give me advice*), belonging (*My friends on campus give me a sense of belonging at St. Olaf College*), low-level self-disclosure (*I have daily casual face-to-face conversations with friends*), and high-level self-disclosure (*My friends will meet with me in-person so that I can confide private information*). The definition of offline social support used in our research was based solely on these four indicators of social support.

Another independent variable, important for our third hypothesis, is Facebook avidity. According to our focus group discussions, the indicators of "avid" or "casual" Facebook use can widely vary depending on the individual. While students frequently referred to themselves and others as "Facebook junkies" and supported the differentiation between avid and casual users, they had difficulty broadly defining these concepts. As such, we created an index that combines the factors most commonly mentioned as creating this differentiation, namely frequency and intensity of Facebook use. The simplest yet perhaps most effective measure is the number of hours spent per week on Facebook as well as whether or not a Facebook profile is checked daily. Though some students may leave their Facebook accounts open constantly in a tabbed browser, most students in our focus group reported logging on, performing certain tasks, and then immediately logging out, suggesting hours per week is a reliable measure of "casual" or "avid" Facebook use. The number of hours spent on Facebook per week is a concurrently valid measure of Facebook avidity because several previous studies have used time spent on social networking sites as an indicator (Subrahmanyam et al. 2008; Valkenburg et al. 2006). Our final two measures of casual and avid Facebook use present in the index (*I keep my profile updated; I lose track of time while Facebooking*) also were selected based on focus group comments.

The first dependent variable in our research was the *amount of social support acquired through the use of Facebook*. The concept was measured by a four-item, four-point Likert index

with choices from 'Strongly Agree' to 'Strongly Disagree.' The four indicators included advice-seeking support (*I use my Facebook to seek advice from others*), belonging (*Facebook contributes to my sense of belonging*), low-level self-disclosure (*I share casual day-to-day details on Facebook*), and high-level self-disclosure (*I feel uncomfortable discussing private personal matters on Facebook*).

Our second dependent variable was *social support received from online gaming*. We defined "online gaming" as multiplayer, subscription-based games such as World of Warcraft and Xbox Live. The amount of perceived social support was measured using a four-item Likert scale. Again, the Likert index had four-points, with 'Strongly Agree,' 'Somewhat Agree,' 'Somewhat Disagree,' and 'Strongly Disagree,' as the possible response categories. Each indicator in the index measured a specific aspect of social support: advice seeking support (*I seek advice (unrelated to game play) while gaming*), belonging (*I feel like I fit in with those I play online games with*), low-level self-disclosure (*I use online games as a chance to catch up with friends*), and high-level self-disclosure (*I feel uncomfortable discussing private personal matters while gaming*). Again, because little research has been published on the relationship between online gaming and explicit dimensions of social support, we developed the index partly based on focus groups and pretests.

Sample

The target population of this study was students at St. Olaf College. A simple random sample was selected from the student body, excluding students on off-campus programs, students in the research methods class conducting the survey, the participants of our focus groups, students under 18, and part-time students. The college's student population lies near three thousand students, so we selected twenty-five percent of the student population, which placed the survey population at 703 students. Of these, 47.5% responded, giving us a final sample of 333 students. The respondents were 32.5% men, 67.5% women, and 0.6% who chose the category "other"; and 28% percent first years, 23% sophomores, 22% juniors, and 26.1% seniors.

Results

While the survey results showed that most respondents felt socially supported through offline means, they also showed a great diversity in how respondents used and felt supported through Facebook and online games. For example, respondents tended to score high on the Offline Social Support Index, an index using measures of belonging, advice seeking support,

low level self-disclosure and high level self-disclosure (all measured on a scale from 0 to 3) through offline means, such as face-to-face interaction. Over half of respondents scored the maximum score of 12 on the index (see Figure 1), and no respondent's score fell below six. The vast majority indicated that their friends give them a sense of belonging on campus (93.1%), and that they have face-to-face conversations with friends about daily issues (97.0%).

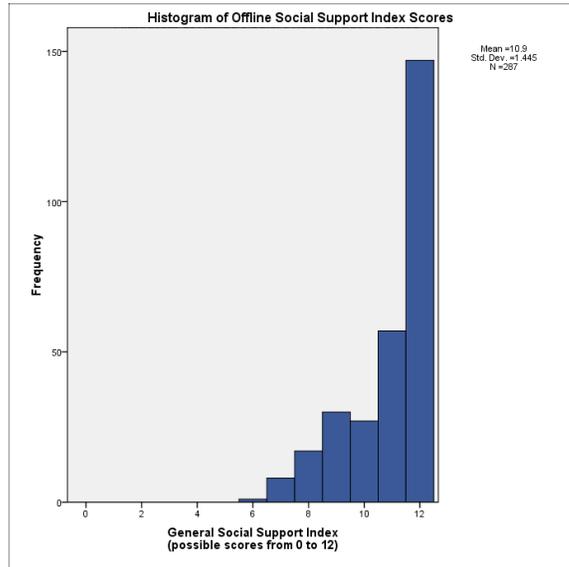


Figure 1

While 97.6% of respondents have a Facebook profile, most (76.4%) scored 5 or less (out of 12) on the Facebook Social Support Index (see Figure 2). This index used measures of belonging, advice-seeking support, low level self-disclosure and high level self-disclosure (all measured on a scale from 0 to 3) to determine the level of social support respondents acquired from Facebook use. For example, 59.8% of respondents disagreed that Facebook contributes to their sense of belonging on campus, and the majority also disagreed that they seek advice, share day-to-day details, and feel comfortable disclosing personal details on Facebook.

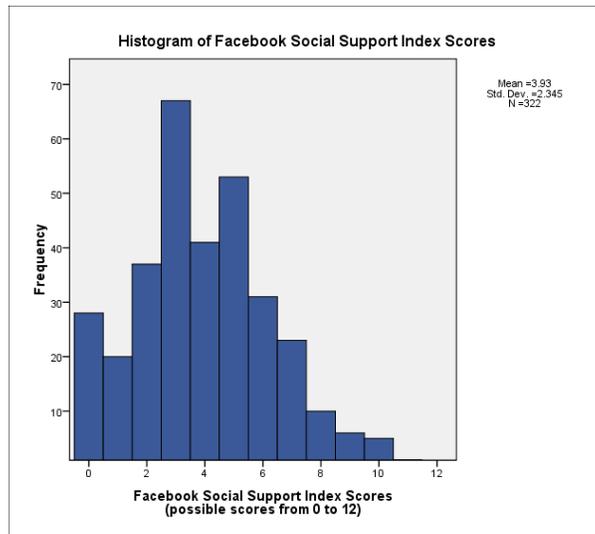


Figure 2

Only about 10% of respondents played subscription-based online games. Of these, 66.7% reported playing three hours or less of online games during the week prior to the survey, and most scored low on the Online Gaming Social Support Index, which measured belonging, advice-seeking support, low level self-disclosure and high-level self-disclosure (all measured on a scale from 0 to 3) acquired through online games. For example, 47% of gaming respondents scored 3 or less on the 12-point index, and 76.5% scored 5 or less (see Figure 3, next page). While 53% of gaming respondents reported that they feel like they belong with other “gamers,” over half reported that they do not use game play as a time to catch-up with friends, do not feel comfortable discussing personal matters while playing, and do not seek advice unrelated to game play while playing.

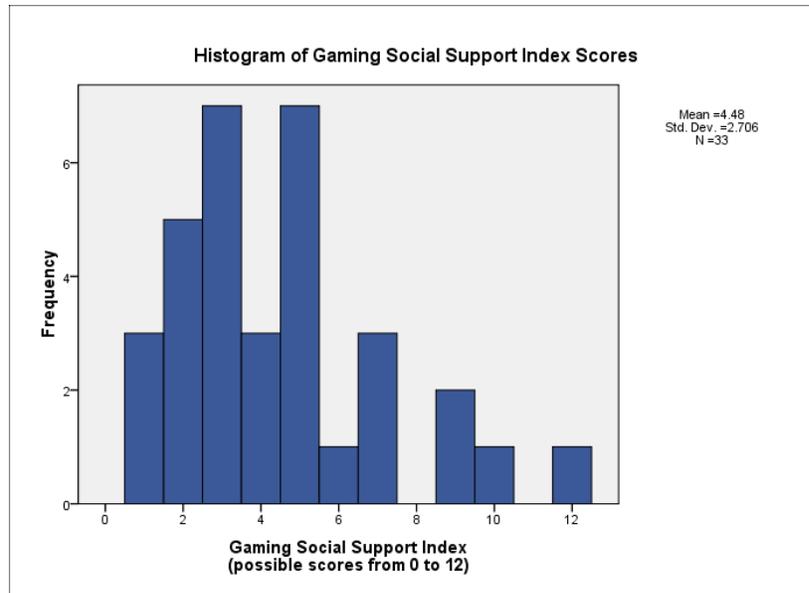


Figure 3

The majority of respondents were moderately avid Facebook users, based on the Facebook Avidity Index, which measured frequency and intensity of Facebook use. The index asks the number of hours respondents spent on Facebook the week prior to the survey and their level of agreement with the following statements: I check my Facebook daily; I lose track of time while Facebooking; and I keep my Facebook profile updated. The measures were each scored on a scale from 0 to 3, resulting in a possible total score of 12. A majority (57.1%) of respondents' scores fell in the range of 4 to 7 (see Figure 4, next page). In addition, 57.0% of respondents spent three hours or less on Facebook the week prior to the survey, and 22.6% spent one hour or less. Although the hours spent on Facebook varied greatly, 81.8% of students reported checking their Facebook daily, and 61.5% agreed that they keep their Facebook profile updated.

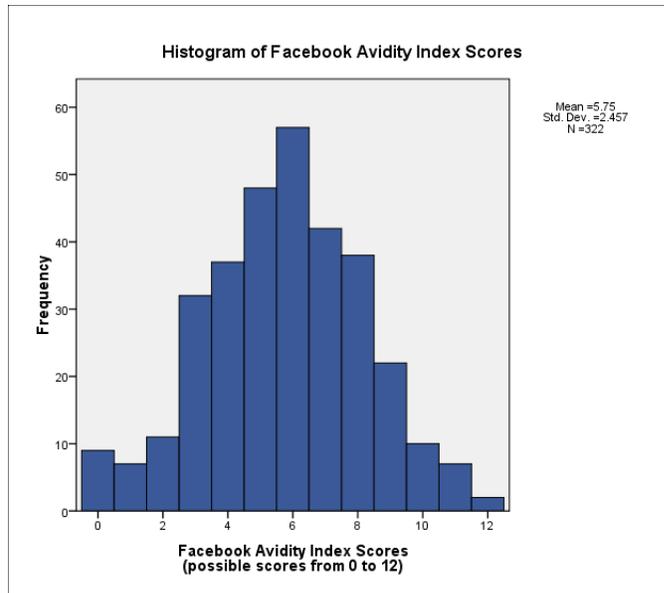


Figure 4

The first hypothesis, *offline social support is positively correlated with Facebook social support*, was not supported by our survey data. Using Spearman's Rho test for non-parametric variables, a correlation of only .074 ($p > .05$) was found. We used a Kruskal-Wallis test to determine if there was a relationship between any indicators of Facebook social support (*sense of belonging, seeking advice, low-level self-disclosure, high-level self-disclosure*) and offline social support, but found no significant relationships (see Table 1). Exemplifying our inability to reject the null hypothesis, *there is no relationship between levels of offline social support and Facebook social support*, students with extreme scores on both ends of the Offline Social Support Index exhibited similar levels of Facebook social support.

Table 1

Kruskal-Wallis Test between Indicators of Facebook Social Support and the Offline Social Support Index				
	Sense of Belonging	High Level Self-Disclosure	Low Level Self-Disclosure	Advice Seeking
Chi-Square	6.760	2.645	3.926	2.639
Asymp. Sig.	.080	.450	.270	.451

For our second hypothesis, *students with higher levels of offline social support will have lower levels of social support from online game use*, we again used a Spearman's Rho test for non-parametric variables, comparing our Gaming Social Support Index results to our Offline

Support Index results. The correlation coefficient of 0.200 was not statistically significant ($p > 0.05$). We also performed a set of Kruskal-Wallis tests to see if there was a relationship between the indicators of social support acquired through online game play (*sense of belonging, seeking advice, low-level self-disclosure, high-level self-disclosure*) and level of offline social support, but again we found no significant relationships (see Table 2). Thus, we cannot reject the null hypothesis: *there is no relationship between levels of offline social support and online gaming social support.*

Table 2

Kruskal-Wallis Test between Indicators of Gaming Social Support and the Offline Social Support Index				
	Sense of Belonging	High Level Self-Disclosure	Low Level Self-Disclosure	Advice Seeking
Chi-Square	4.353	.553	1.192	.543
Asymp. Sig.	.226	.907	.755	.909

Our third hypothesis, *Facebook avidity is positively correlated with Facebook social support*, was supported. The Facebook Avidity Index results were normally distributed, but the Facebook Social Support Index results were non-normally distributed, which meant that a non-parametric test was necessary. We used a Spearman's Rho test to find the correlation between the Facebook Avidity Index results and the Facebook Social Support Index results. The correlation coefficient was 0.525 ($p < 0.01$), indicating a statistically significant, positive correlation between respondents' Facebook avidity and their level of perceived Facebook social support.

In the study, gender and class year were both found to be related to the Facebook Avidity Index scores. An Independent Samples T-Test showed that we can be 95% confident ($p < 0.05$) that the actual mean difference between female and male respondents on the Facebook Avidity Index is between -1.549 and -.423, with females possessing the higher scores. If there really were no difference between male and female respondents, we would arrive at a mean difference of -0.986 or more less than 5% of the time.

We used a one-way ANOVA to compare the mean scores on the Facebook Avidity Index for students in different class years (*first year, sophomore, junior, senior, other*). Class year was found to be a statistically significant indicator ($F(3, 306)=2.770, p < .05$). We used Tukey's HSD to investigate the nature of the differences between class years and found only one statistically significant difference, which was between first years and juniors; the mean difference between these groups was 0.09-2.22, with first year students scoring higher ($p < 0.05$).

Discussion

Our first hypothesis, *offline social support is positively correlated with Facebook social support*, was not supported. There may be no correlation between offline social support and Facebook social support. The strong negative skew of the Offline Social Support Index may have made a correlation difficult because there were so few low and mid-level scores of offline social support recorded. Another possible explanation concerns the social stigma attached to self-disclosure on Facebook. Popular media outlets have emphasized the potential risks of disclosing information online, which may have caused some respondents to rate their Facebook self-disclosure levels lower than they actually are. Our finding is also distinct from past research that has suggested that those with higher levels of offline social support may acquire more social support through internet use (Kraut et al. 2002).

Our gaming hypothesis was not supported, which means there may be no association between St. Olaf students' levels of offline social support and the level of social support acquired through online game play. There are a number of possible reasons our gaming hypothesis was not supported. Besides the strong skew in the Offline Social Support Index results, another potential issue was that less than 10% of our sample population (only 33 people) played online games, which made it difficult to acquire statistically significant results. Also, there appeared to be two different kinds of gamers in our sample. About 94% played online games for eight hours or less in the past week, while the remaining 6% (2 people) played more than 23 hours in the past week. Based on focus group discussions, these differences in playing time probably relate to two different types of games and gamers: casual gamers who may play computer or Xbox games, and avid gamers who may play more involved games like World of Warcraft. Thus, a larger sample population that contained more avid gamers may have provided more evidence to support our gaming hypothesis. Because our sample size was limited to 33 responses and our results were not significant, it is difficult to compare our results to those of previous studies and to generalize to a larger population.

The third hypothesis was supported, meaning that we can be 95% confident that St. Olaf students who use Facebook more avidly (more frequently and intensely based on our index) will acquire more social support from their use. This relationship is logical due to the need to spend time and energy to acquire social support. Those who spend little time on Facebook are unlikely to receive social support from the site; those who spend more time on Facebook are more likely to receive social support from the platform. It is likely a self-reinforcing pattern, and those who receive what they consider a valuable amount of social support consequently reinvest by spending more time on Facebook, and those who feel a lack of social support returns via Facebook would react by reducing the amount of time they spend on the social networking site.

Two possible confounders, gender and class year, were related to the relationship between respondents' Facebook avidity levels and the social support they received from Facebook use. However, while these variables were not found to be correlates of social support received from Facebook use ($p > 0.05$), and thus are not confounding variables in the relationship between Facebook avidity levels and social support received from Facebook.

While these two variables are not confounding in the previously mentioned relationship, they were both found to be related to Facebook avidity. The fact that a statistically significant difference was found between female and male St. Olaf students' level of Facebook avidity means that female St. Olaf students can generally be expected to use Facebook more frequently and with more intensity (i.e. update their profiles more frequently) than do male students. Prior studies we found did not specifically address reasons for differences between male and female internet use, but one possible explanation is that female students use Facebook to communicate more with individuals off-campus (family, high school friends, and students studying abroad) than male students. However, this hypothesis is based on our own qualitative, personal observations and would require further quantitative investigation. Similarly, the difference in Facebook avidity between first years and juniors is statistically significant, with first years being the more avid users. Again, past literature has not addressed this difference, leading us to speculate that first year students' higher avidity is due to efforts to maintain contact with friends from high school, while the comparative lack of avidity seen in the junior class is due to the loss of contact with high school friends and not yet having lost college friends to graduation, which would likely increase avidity.

Conclusion

While investigating the relationship between social support acquired offline and social support acquired through online means, our research did not support a relationship between

levels of offline social support and levels of social support acquired through Facebook or online gaming. However, the research does suggest that St. Olaf students who use Facebook more frequently and with more intensity acquire more social support from Facebook use. Outside of hypothesis testing, our research also uncovered interesting details concerning respondents' feelings towards social support acquired on-campus and through online means. For example, although over half of respondents had the highest score of 12 on the Offline Social Support Index, over half of respondents also scored in the bottom half of the Facebook Social Support and Gaming Social Support Indexes.

Our study's support of our third hypothesis, *Facebook avidity is positively correlated with Facebook social support*, helps fill previous gaps in research about the nature of Facebook use and its relationship to acquiring social support. In addition, the Facebook Social Support, Gaming Social Support, and Facebook Avidity Indexes we created may provide a tool that has been missing in past research. Although the Facebook and gaming indexes may have contributed to the non-significant results in this study, our indicators provide a base upon which to build future indexes to measure social support.

The increased levels of social support achieved through more avid Facebook use found in our study have potential implications for administrators aiming to increase social support within their campus community. College is a transitional period in young adults' lives, where new friends are made and old friends, such as high school friends, may slowly be lost. While we did not find relationships between offline social support and Facebook and gaming social support, it is clear that St. Olaf students who are more avid Facebook users acquire more social support from Facebook use. Therefore, at St. Olaf at least, it may be beneficial for administrators to consider supporting Facebook as one possible tool to provide support during students' college years.

As mentioned, one weakness of this study was the indexes that were used. The strong negative skew of the Offline Social Support Index suggests that the scale should be modified to capture all areas of social support available at colleges like St. Olaf. Due to space constraints in our survey, we were limited in the number of indicators for each index. Given more space, we would have liked to consider more tangible dimensions of social support, both online and offline, and create indexes that take into account all types of social support that can be acquired in these separate realms. Future research can more thoroughly encapsulate online and offline social support by creating more comprehensive indexes which consider the inherent differences between the two worlds.

In regards to our investigation of the gaming community at St. Olaf, a larger sample is needed to fully describe the social support present in online games. With only 33 gamers in our sample population, we could not achieve statistically significant results, and we gained limited knowledge from our univariate results. In addition, individuals with low levels of offline support may have refrained from taking the survey, leading to the negatively skewed Offline Social Support Index results. Future research, therefore, should consider not only the possible varieties of gamers, specifically those who play casually in physical-co-presence with friends and those who devote large amounts of time to games in order to achieve ongoing in-game objectives, but also try to ensure that individuals with all levels of social support are surveyed.

Besides addressing the limitations in our current study, future research should also address the variables we found to be correlates of Facebook avidity, gender and class year. Although we have suggested possible reasons why female students were found to be more avid Facebook users than males, and first years more than juniors, further investigation into these differences in Facebook use will help create a clearer image of Facebook's social role in a variety of college students' lives. In doing so, researchers may consider a longitudinal study of college users to determine the changing nature of Facebook use. If the relationship between Facebook avidity and social support holds true not just for St. Olaf students, but for other Facebook users as well, researchers must continually ask if these online platforms are an adequate replacement for, or valuable accompaniment to, traditional face-to-face support.

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