The Relationship Between Facebook and the Well-Being of Undergraduate College Students

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Abstract

We investigated how Facebook use and attitudes relate to self-esteem and college adjustment, and expected to find a positive relationship between Facebook and social adjustment, and a negative relationship between Facebook, self-esteem, and emotional adjustment. We examined these relationships in first-year and upper-class students and expected to find differences between the groups. Seventy undergraduate students completed Facebook measures (time, number of friends, emotional and social connection to Facebook), the Rosenberg Self-Esteem Scale, and the Student Adaptation to College Scale. First-year students had a stronger emotional connection to and spent more time on Facebook while they reported fewer friends than upper-class students did. The groups did not differ in the adjustment scores. The number of Facebook friends potentially hinders academic adjustment, and spending a lot of time on Facebook is related to low self-esteem. The number of Facebook friends was negatively associated with emotional and academic adjustment among first-year students but positively related to social adjustment and attachment to institution among upper-class students. The results suggest that the relationship becomes positive later in college life when students use Facebook effectively to connect socially with their peers. Lastly, the number of Facebook friends and not the time spent on Facebook predicted college adjustment, suggesting the value of studying further the notion of Facebook friends.

Introduction

In recent years, online social-networking sites have achieved notable popularity among college students. The creation of Facebook, in 2004, has revolutionized social behaviors and networking practices among college students. Facebook allows a user to create a profile, display personal information, upload pictures, access other users’ profiles, accumulate online friends, and interact with those friends through messages, gifts, and other applications. In the literature, the average amount of time spent on Facebook ranges from 30 minutes to over 2 hours daily. While it appears that Facebook is the preferred approach to networking among college students, there has been little research on its relationship with psychological well-being.

Past research has extensively examined the effects of general Internet use on social well-being. Initial studies concluded that greater Internet use led to a decline in family communication, and local and distant network size. Based on the results of the HomeNet project, participants who spent a significant amount of time on the Internet reported higher levels of loneliness and a greater number of daily stresses than people who did not use the Internet as much. Moreover, greater Internet use has been associated with a higher likelihood of depression. However, in a follow-up study, Kraut et al. reported that the negative effects dissipated, and the researchers pointed instead to the effects of personality traits. Introverted individuals using the Internet experienced decreased community involvement and increased loneliness, while extroverts using the Internet showed increased community involvement and decreased loneliness.

The relationship between Internet use and loneliness was examined by other researchers too. Moody reported that high levels of Internet use (i.e., time) were associated with low levels of social loneliness (i.e., more social networking) and higher levels of emotional loneliness (i.e., lack of intimate relationships), suggesting that online interactions fail to satisfy one’s need for emotional connections in social interactions. More recently, Ceyhan and Ceyhan reported that loneliness and depression predicted problematic use of the Internet, as measured by a scale designed by the authors. To explain the link between loneliness and Internet use, Caplan explored the mediating effect of social anxiety. Indeed, Caplan supported that social anxiety confounded the relationship between Internet use and loneliness and was directly related to negative effects from Internet use. Finally, another variable that seems to moderate the effects of the Internet is...
how the Internet is used. Non-communicative use of the Internet was shown to influence psychological well-being negatively (i.e., loneliness, depression) because it reduced social integration. Internet use driven by communicative use was positively correlated with psychological well-being because of increased community and social involvement.2,3

The results from the above studies investigating Internet use and its relation to well-being are somewhat contradictory. The studies indicating negative effects support the displacement hypothesis, according to which the Internet takes time away from social activity and thus displaces social ties. This in turn hinders well-being.4 Other studies indicate that the effects of the Internet vary according to personality and Internet-use functions. In fact, the Internet can even enhance the well-being of people who are extroverts or use Internet for communicative purposes. These results support the stimulation hypothesis, based on which the Internet enhances social interactions and thus contributes positively to well-being.10

More recently, there has been an increasing interest in studying the use and effects of Facebook. Ellison et al.3 found that Facebook use was related to bridging, bonding, and maintaining social capital, which refers to resources obtained through relationships such as emotional satisfaction and access to information. On average, college students had between 150 and 200 Facebook friends and generally used the Web site to communicate with others with whom they shared an offline connection. This indicated that students primarily used Facebook to maintain previously established social capital, rather than developing new networks through online networking. Most users named their high school in their profile and preserved ties with old friends and acquaintances, even as they moved into a new social setting.1

Other studies, too, have supported the notion that Facebook is used primarily for social connections.2,3,11 For example, Sheldon reported that students used Facebook to maintain relationships with people they already knew. However, participants also used Facebook out of boredom or in response to computer-mediated communication (e.g., a wall posting, message, bumper sticker, etc.) initiated by someone else. Only a small number of students used Facebook to meet new people.3 Pempek et al. confirmed the above findings and added that college students also used Facebook to communicate information about their identity such as their political and religious beliefs.11 Facebook has also been viewed as the “social glue” that assists students to become accustomed to college life.12 Finally, in a longitudinal study, Steinfield et al. found out that the intensity of Facebook use among college students predicted social capital a year later.13

It appears, therefore, that Facebook fulfills its role as it was intended by its creators: to support social networks. While the above studies provide strong support for the stimulation hypothesis, research also shows that the ability to use Facebook to build social connections is influenced by personality traits. For example, Sheldon found that socially anxious individuals tended to pass more time on Facebook but reported fewer Facebook friends.3 In contrast, extraverted individuals had more Facebook friends and initiated more relationships online than introverted participants did. In the same line of research, Orr et al. examined the effects of shyness on Facebook use among college students and confirmed Sheldon’s findings.7 Shy individuals spent more time on Facebook and expressed favorable attitudes toward Facebook but had few Facebook friends.14

While personality traits potentially influence how people use Facebook and consequently the social benefits they can reap from that use, it is still unclear how Facebook use and attitudes relate to psychological well-being. Ellison et al.1 found that students with low self-esteem and low life satisfaction benefited from Facebook use, as it allowed them to improve their social capital. Altogether the findings suggest that Facebook users may fulfill their social needs, but it is not clear whether they can fulfill their emotional needs. It is possible that while Facebook stimulates social interaction, it also displaces time from establishing emotionally gratifying relationships. These results somewhat parallel the results of the relationship between general Internet use and well-being.6–8

In this study, we investigated further the relationship between Facebook and psychological well-being. We focused on undergraduate college students because although Facebook is now available to other age groups, the current literature is primarily based on studies utilizing the undergraduate population. We aimed to generate findings that would bear relevance to and expand current knowledge. We examined how Facebook use and attitudes toward Facebook related not only to their self-esteem but to variables that measure social, emotional, and academic adjustment to college, as well attachment to the institution. Because people with low self-esteem seem to benefit from Facebook,3 we expected to find a negative correlation between Facebook use and self-esteem, thinking that these users have a greater motivation to use Facebook. If Facebook use, like Internet use, is not related positively to emotional fulfillment, then there should be a negative correlation between Facebook variables and emotional adjustment to college. Because there is strong evidence that Facebook supports social networks, we expected a positive correlation between social adjustment and Facebook variables. We did not make any prediction for the relationship between academic adjustment, attachment to institution, and Facebook variables. Finally, we explored whether these relationships differed among first-year and upper-class students. We expected to find differences among the groups because first-year students are in the process of developing a social network in their new environment, whereas upper-class students should have an established social network already. Based on the same rationale, we also expected that the groups would be different in Facebook use and attitudes. Exploring these differences would allow us to understand better how Facebook variables relate to well-being variables in each group. In sum, we formulated the following research hypotheses:

There is a relationship between Facebook and well-being variables that follows these trends:

H1a: There is a negative relationship between Facebook variables, self-esteem, and emotional adjustment to college.

H1b: There is a positive relationship between Facebook variables and social adjustment to college.

H1c: Facebook variables will predict different types of adjustment in each group.

H2: First-year and upper-class students differ in Facebook use and attitudes.
Method

Participants

Participants were 70 undergraduate college students ($M_{\text{age}} = 19.61$). A total of 35 were first-year ($M_{\text{age}} = 18.31$) and 35 ($M_{\text{age}} = 20.91$) were upper-class students (junior and senior students). The participants were recruited from multidiscipline introductory and upper-level classes at a small, Catholic, liberal arts institution in the Northeast. Most of the participants were female (67.0%). We collected data in the middle of the fall and spring semester, and excluded sophomores because spring-semester sophomores would be too close to fall-semester juniors, thereby decreasing the age gap between the groups.

The majority of the participants (89.6%) reported being Caucasian/non-Hispanic (2.9% African-American, 5.8% Hispanic, 1.4% Other). When asked to describe their socioeconomic background (SES) by filling in a blank, 9.7% identified themselves as being low class, 69.4% as middle class, 16.1% as upper middle class, and 4.8% as upper class. Based on statistical analyses, the groups of first-year and upper-class students did not differ in any of the demographic characteristics of age, gender, ethnic background, and SES. Students might have been offered extra course credit for their participation.

Measures

Through self-reported measures, we assessed demographic information (age, gender, SES, ethnicity, year in college), Facebook usage and attitudes, and psychological well-being (i.e., self-esteem and adjustment to college).

Facebook measures. We used three measures of Facebook usage from Ellison et al. The Facebook Intensity Scale (FIS) measures time spent on Facebook ($10$ minutes, $2 = 10–30$ minutes, $3 = 31–60$ minutes, $4 = 1–2$ hours, $5 = 2–3$ hours, $6 = \text{more than 3 hours}$), number of Facebook friends ($1 = \text{10 or fewer}, 2 = 11–50$, $3 = 51–100$, $4 = 101–150$, $5 = 151–200$, $6 = 201–250$, $7 = 251–300$, $8 = 301–400$, $9 = \text{more than 400}$), and includes six statements that measure participants’ attitudes toward Facebook (e.g., “I am proud to tell people I am on Facebook”). These statements were rated on a 5-point scale (1 = “strongly disagree,” 5 = “strongly agree”). Ellison et al. standardized the first two items before averaging the scores to create a Facebook Intensity score. Because, we were interested in finding group differences in Facebook friends and time spent on Facebook, we treated these variables separately. However, we averaged the scores from the six attitudinal items that reflect an emotional connection to Facebook (e.g., “I am proud to tell people I am on Facebook”) and created the variable “emotional connection” ($z = 0.89$). The second measure we used from Ellison et al. is a 5-statement scale that accesses how Facebook is used to make new connections or to maintain existing offline connections (e.g., “I use Facebook to check out someone I have met socially”). The statements were rated on a 5-point scale (1 = “strongly disagree,” 5 = “strongly agree”). We averaged these items and created the variable “social connection” to Facebook ($z = 0.70$).

Finally, using Ellison et al.’s scale of Elements in Profile as a model, we created a list of available profile features and asked the participants to check all of the elements they used to create their profile. Ellison et al. used only the salient features such as relationship status. Because we were interested in differences between the groups and wanted to explore more areas in which we could find such differences, we used all available profile features. Unlike Ellison et al, we did not ask for the participants’ perceptions of who viewed their profile because we did not view this variable relevant to our study. Finally, as part of the Facebook measures, we asked how many friends the participants had offline and specifically on campus.

Rosenberg’s Self-Esteem Scale. We used the Rosenberg Self-Esteem Scale to measure self-esteem. This Likert-type scale consists of 10 items (e.g., “I feel that I am a person of worth, at least on an equal plane with others”). The items were rated on a 4-point scale. Rosenberg assigned the value of 0 as the lowest rating and then summed the scores. Because we used average scores in all of our measures, we needed to avoid 0 values and we therefore assigned the value of 1 as the lowest rating (i.e., $1 = \text{strongly disagree}, 2 = \text{disagree}, 3 = \text{agree}, 4 = \text{strongly agree}$). The ratings of five items were reversed so that higher scores reflected high self-esteem in all statements (e.g., “All in all, I am inclined to feel that I am a failure”). The Rosenberg scale has been used frequently in research, and has high reliability and test–retest correlations ranging from 0.82 to 0.88.14 The Cronbach’s alpha in this study was 0.80.

Student Adaptation to College Questionnaire. We used the Student Adaptation to College Questionnaire (SACQ) to measure adjustment to college.15 This is a 67-item inventory that is divided into four subscales: academic adjustment, social adjustment, personal-emotional adjustment, and institutional attachment. The academic adjustment subscale measures a student’s ability to cope with the educational demands of college (e.g., “I have been keeping up to date on my academic work”). The social adjustment subscale refers to one’s capacity to cope with societal demands (e.g., “I feel that I fit in well as part of the college environment”). The personal-emotional subscale quantifies a general sense of how a student feels physically and psychologically (e.g., “I have been feeling tense or nervous lately”). The attachment subscale refers to a student’s satisfaction with the institution attended (e.g., “I wish I were at another college or university”). The participants responded to each item on a 9-point scale, ranging from “applies very closely to me” to “does not apply to me at all.” There were 34 negatively focused items, with point values ranging from 1 to 9, and 33 positively focused items with point values ranging from 9 to 1. Scores were tallied comprehensively and by subscale, with higher scores indicating better levels of adjustment. The scale has been used in counseling as a diagnostic tool, as well as in basic research with high reliability and validity.15

Procedure

We collected data in the middle of the fall and spring semesters for a period of 2 weeks. Participants met in a quiet classroom at 7:00 PM and individually received the questionnaire packet. There were no more than 10 participants at a time in the room. Participants were given as much time as was necessary to complete all questions.
Results

Descriptive analyses indicated that the average user spent 60–120 minutes on Facebook every day and reported having 200–250 Facebook friends. Users tended to complete all of the available options to create a Facebook profile. The most popular features included items that describe users’ relationship status (first year [FY]: 82.9%; upper class [UC]: 82.9%), educational information (FY: 94.3%; UC: 82.9%), interests (FY: 71.4%; UC: 80%), favorite music (FY: 71.4%; UC: 62.9%), and activities (FY: 71.4%; UC: 80%), as well as personal pictures (FY: 91.4%; UC: 88.6%). Few participants reported their phone number (FY: 14.3%; UC: 20) or home address (FY: 5.7%; UC: 2.9%), or uploaded personal videos on Facebook (FY: 17.1%; UC: 11.4%). Other least favorable items were the ones that describe political (FY: 17.1%; UC: 28.6%) and religious views (FY: 20%; UC: 22.9%). The rest of the results are organized in relation to the research hypotheses.

Hypotheses 1a–c

We expected a relationship between Facebook variables (Facebook time, number of Facebook friends, emotional connection, and social connection) and well-being as measured by self-esteem and college adjustment variables. In order to address the research hypotheses, we conducted correlational analyses between the variables of interest. In support of H1a, we found a negative correlation between minutes spent on Facebook and self-esteem, \( r(70) = -0.26 \), \( p < 0.05 \), suggesting that spending a lot of time on Facebook is associated with low self-esteem (\( f^2 = 0.07 \)). There was also a negative correlation between number of Facebook friends and academic college adjustment, \( r(70) = -0.27, p < 0.05 \), indicating that those with many Facebook friends had low academic adjustment scores (\( f^2 = 0.11 \)). Finally, none of the correlations between emotional and social connection to Facebook and well-being variables were significant. We were not able to support H1b, according to which we expected a positive relationship between the Facebook variables and social adjustment in college.

Next, we conducted correlational analyses between Facebook and well-being variables in each age group beginning with the first-year group. As shown in Table 1, there were significant negative correlations between the number of Facebook friends and emotional, \( r(35) = -0.35, p < 0.05 \), \( f^2 = 0.14 \), and academic adjustment, \( r(35) = -0.36, p < 0.05 \), \( f^2 = 0.15 \), suggesting that first-year students with many Facebook friends did not fare well personally (H1a) and academically. The negative correlation between the number of Facebook friends and total college adjustment approached significance, \( r(35) = -0.32, p = 0.056 \). For the upper-class students, there were significant positive correlations between having many Facebook friends and social adjustment, \( r(35) = 0.52, p < 0.001, f^2 = 0.37 \), and attachment with the institution, \( r(35) = 0.37, p < 0.05, f^2 = 0.15 \). Upper-class students who reported having many friends on Facebook appeared to be well-adjusted socially (H1b) and strongly connected with their college. The negative correlation between self-esteem and time spent on Facebook approached significance, \( r(35) = -0.31, p = 0.07 \).

Interestingly, time spent on Facebook was not correlated with any of the well-being variables for first-year and upper-class students. To support further the predictive value of Facebook friends as compared to time spent on Facebook, we conducted stepwise multiple regression analyses with both of these variables as the independent factors. The dependent variables were the adjustment variables that correlated with the independent variables. As shown in Table 2 and 3, only Facebook Friends was a significant predictor. The number of Facebook friends explained 12% of the variance in emotional adjustment and 13% of the variance in academic adjustment of first-year students. Similarly, the number of Facebook friends predicted 14% of the variance in attachment to institution and 28.6% of the variance in social adjustment of the upper-class students. These results clearly demonstrate that Facebook predicts different types of adjustment in the two groups (H1c).

Next, we examined how the emotional and social connection to Facebook was related to well-being in each group. There was a negative correlation between emotional connection and self-esteem for the upper-class students, \( r(35) = -0.39, p < 0.05, f^2 = 0.18 \), indicating that those with a strong emotional connection to Facebook tended to report lower self-esteem (H1a). In addition, there was a significant positive correlation between the social connection to Facebook and emotional, \( r(35) = 0.42, p < 0.05, f^2 = 0.21 \), and total adjustment to college, \( r(33) = 0.34, p < 0.05, f^2 = 0.13 \). Upper-class students who used Facebook to connect socially with other people also had higher emotional adjustment scores, as well as total adjustment scores (Table 4). None of the relationships were significant in the first-year group.

Finally, we addressed whether the groups differed in adjustment scores, to rule out the possibility that the different relationship between Facebook and well-being variables in the groups was driven primarily by differences in adjustment

![Image](image.png)

Table 1. Correlations Between Facebook Use and Well-Being Variables (n_FY = 35, n_UC = 35)

<table>
<thead>
<tr>
<th>Variable</th>
<th>FY</th>
<th>UC</th>
<th>FY</th>
<th>UC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook friends</td>
<td>-0.29</td>
<td>-0.04</td>
<td>-0.09</td>
<td>-0.31</td>
</tr>
<tr>
<td>Facebook time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-esteem</td>
<td>-0.35*</td>
<td>0.03</td>
<td>-0.06</td>
<td>-0.02</td>
</tr>
<tr>
<td>Emotional adjustment</td>
<td>-0.36*</td>
<td>-0.15</td>
<td>-0.04</td>
<td>0.07</td>
</tr>
<tr>
<td>Academic adjustment</td>
<td>-0.19</td>
<td>0.52***</td>
<td>-0.10</td>
<td>0.24</td>
</tr>
<tr>
<td>Social adjustment</td>
<td>-0.15</td>
<td>0.37*</td>
<td>-0.17</td>
<td>0.17</td>
</tr>
<tr>
<td>Attachment of institution</td>
<td>-0.32</td>
<td>0.10</td>
<td>-0.11</td>
<td>0.08</td>
</tr>
<tr>
<td>Total adjustment</td>
<td></td>
<td></td>
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</tbody>
</table>

FY, first-year students; UC, upper-class students. *p < 0.05; **p < 0.001.

Table 2. Facebook Variables Predicting College Adjustment of First-Year Students (n = 35)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>( \beta )</th>
<th>Academic adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F_Y</td>
<td>S_E</td>
<td>F_Y</td>
<td>F_Y</td>
</tr>
<tr>
<td>Facebook friends</td>
<td>-0.172</td>
<td>0.08</td>
<td>-0.35*</td>
<td>-0.14</td>
</tr>
<tr>
<td>Facebook time</td>
<td>0.006</td>
<td>0.14</td>
<td>0.007</td>
<td>0.02</td>
</tr>
</tbody>
</table>

*p < 0.05.
scores. We therefore compared the groups in self-esteem and college adjustment variables using a multivariate analysis of variance, and although the overall test was significant, F(63, 6) = 2.60, p < 0.05, none of the univariate tests yielded significant results.

Hypothesis 2

We explored any differences between first-year and upper-class students in Facebook profiles, use, and attitudes toward Facebook. The two groups were very similar in the information they provided in their profiles. Analyses of variance showed that the groups were not different in the number of offline friends on campus, F(68, 1) = 0.54, p > 0.05, M_FY = 32, M_UC = 31, but first-year students reported having significantly more friends from home, F(68, 1) = 6.60, p < 0.05, M_FY = 41, M_UC = 23. Using a one-way analysis of variance, we then compared the groups in terms of Facebook behaviors. Results indicate that first-year students reported spending significantly more time on Facebook, F(68, 1) = 17.58, p < 0.001, f^2 = 0.25, M_FY = 4, M_UC = 2.7, than upper-class students did. On the other hand, upper-class students reported having significantly more friends on Facebook, F(68, 1) = 5.51, p < 0.05, f^2 = 0.08, than first-class students did, M_FY = 4.5, M_UC = 5.5. Finally, we compared the groups in terms of their emotional and social connection to Facebook using a MANOVA. The Wilks’s A test was significant, F(67, 2) = 10.12, p < 0.001. First-year students reported a stronger emotional connection to Facebook, M_FY = 3.69, than upper-class students did, M_UP = 2.8; F(69, 1) = 14.15, p < 0.001, f^2 = 0.25. The groups were not different in their scores of social connection to Facebook, M_FY = 3.5; M_UP = 3.28.

### Table 3. Facebook Variables Predicting College Adjustment of Upper-Class Students (n = 35)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Social adjustment</th>
<th>Attachment to Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Facebook friends</td>
<td>0.29</td>
<td>0.09</td>
</tr>
<tr>
<td>Facebook time</td>
<td>0.07</td>
<td>0.11</td>
</tr>
</tbody>
</table>

*p < 0.05.

Discussion

Our findings strongly support a relationship between Facebook variables and psychological well-being. This is true for each one of our groups, as well as for the whole sample. When the groups were combined, spending a lot of time on Facebook was negatively related to self-esteem, thus supporting our hypothesis. This finding is driven primarily by the correlation in the upper-class sample that reached significance (Table 1). Furthermore, upper-class students with an emotional connection to Facebook also reported low self-esteem. Ellison et al. found that students with low self-esteem benefit from using Facebook because they expand their social capital.1 Our findings indirectly support this interpretation. Our upper-class students whose emotional connection to Facebook was related to low self-esteem also reported that social connection to Facebook was positively associated with high scores of emotional and total adjustment in college. Future research engaging a greater sample and path analysis would shed light onto the directionality of these relationships.

The number of Facebook friends was also related to low academic adjustment in college when both groups were considered although this relationship was significant only in the first-year group alone. In addition, first-year students with many Facebook friends reported experiencing lower emotional adjustment in college, a finding that is consistent with the hypothesis that Facebook use, like Internet use, does not fulfill emotional needs. The construct of emotional adjustment reflects the student’s ability to balance stresses related to college life and maintaining a sense of doing well. It is possible that first-year students seek out friends on Facebook as a coping strategy to relieve the stress of college adjustment. Consistent with this explanation is our finding that first-year students reported a stronger emotional connection to Facebook than upper-class students did. Furthermore, difficulties with emotional adjustment seem to spill over to academic adjustment, as these constructs were highly correlated, r(35) = 0.57.* Again, a path analysis using a bigger sample would be more appropriate in determining the directionality of these relationships.

Having a lot of Facebook friends was positively related to both social adjustment and attachment with the institution for upper-class students, thus offering support to the hypothesis that Facebook strengthens social adjustment by improving social networks. Social adjustment refers to having a feeling of fitting in with the college community and being satisfied with established social connections and the social activities offered on campus. Our findings suggest that Facebook is a valuable venue not only for creating new and maintaining old relationships,* but also for being informed about social events that occur on campus. We also believe that the relationship between social college adjustment and Facebook underlines the relationship between Facebook and a general satisfaction with the institution. Our findings imply that colleges could use Facebook to their benefit by creating opportunities to connect their students with each other and with campus life activities.

The findings thus far reveal two trends. The first trend implied by our findings is that the relationship between

### Table 4. Correlations Between Emotional and Social Connection to Facebook and Well-Being (n_FY = 35, n_UC = 35)

<table>
<thead>
<tr>
<th></th>
<th>Emotional connection</th>
<th>Social connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FY</td>
<td>UC</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>0.09</td>
<td>−0.39*</td>
</tr>
<tr>
<td>Emotional adjustment</td>
<td>−0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>Academic adjustment</td>
<td>−0.06</td>
<td>−0.06</td>
</tr>
<tr>
<td>Social adjustment</td>
<td>0.03</td>
<td>0.10</td>
</tr>
<tr>
<td>Attachment of institution</td>
<td>−0.02</td>
<td>0.16</td>
</tr>
<tr>
<td>Total adjustment</td>
<td>0.01</td>
<td>0.08</td>
</tr>
</tbody>
</table>

*Results available upon request.
Facebook and college adjustment becomes positive later in college life, although the cross-sectional nature of the study would limit such generalization. This trend is consistent with our hypothesis that Facebook variables would predict different adjustment variables in each group. The first-year students who had a lot of Facebook friends experienced lower academic and emotional adjustment, while upper-class students with many Facebook friends reported high social adjustment and attachment to the institution. This difference cannot be attributed to possible greater adjustment difficulty of the first-year group, as there were no differences in college adjustment scores between the two groups. The two groups were also not different in the types of information they provided in their profiles. We have evidence instead to believe that upper-class students use Facebook more effectively than first-year students do. We found positive correlations between the social connection with Facebook and emotional and total college adjustment. How exactly they use Facebook and the factors leading to more effective use of Facebook is a subject of future research. The findings currently support the value of examining age differences in Facebook effects on well-being.

Second, while the amount of time spent on Facebook did not correlate with any of the adjustment variables, the number of Facebook friends did. The participants in this study reported spending 60–120 minutes on Facebook every day. This is higher than the 10–30 minutes that Ellison et al. reported, but consistent with more recent studies. Although one would expect that investing time in Facebook limits the time one has to socialize and study, the current results suggest that it is what you do while on Facebook that really matters. Studies strongly support that the primary motive to use Facebook is to keep in touch with old friends and make new ones. We think that it is the notion of a Facebook friend that underlines the predictive value of number of Facebook friends when it comes to college adjustment.

A few studies have examined the relationship between number of Facebook friends and other psychological characteristics. Researchers agree that the meaning of a Facebook friend is uncertain. Parks estimated that people maintain about 10–20 close relationships using traditional communication means. This number is phenomemonally higher on virtual social networks. Our participants listed an average of 200 to 250 friends, but this number might have been even higher if participants reported the actual number of friends instead of choosing a range of number of friends. Tong et al. found a curvilinear relationship between number of friends and social attractiveness, with the greatest rating of social attractiveness reported when the profile owner listed 300 friends. More than 300 friends was related to low social attractiveness and high introversion of the profile owner. The same research team also reported that the physical attractiveness of Facebook friends boosted the profile owner’s physical attractiveness and social desirability. Finally, Buffardi and Campbell supported a link between narcissism and increased social activity on Facebook (e.g., number of friends, groups, and wall posts), whether narcissism was self-reported or was rated by profile viewers. In conclusion, there is tentative evidence to suggest that the personality characteristics of the profile owners may relate to the number of friends and mediate the relationship with college adjustment.

**Limitations and future research directions**

The interpretation of the findings warrants caution because of the small sample size and the uneven representation of gender. It is unknown how gender might have influenced the results. Similar to our findings, previous researchers have not reported gender differences in the use of Facebook. There is some evidence of gender differences in perceived physical attractiveness of the owner based on comments posted on profiles by friends. A bigger sample would allow advanced statistical analyses such as path analysis. However, the modest to good effect sizes we found for the major results adds confidence to our interpretation. Finally, the differences in the two groups might have been influenced by the history of exposure to Facebook. Although we did not ask participants to report the number of years that they have been Facebook users, we estimate that the groups had similar histories. Facebook was made available to first-year students when they were in high school, whereas our upper-class participants had access to Facebook in the first year in college.

Despite these shortcomings, the results make significant contributions. Spending a lot of time on Facebook relates to low self-esteem, a finding that parallels the relationship between Internet use and self-esteem. However, the increased number of friends may be a better predictor of well-being than time spent on Facebook, regardless of whether the relationship is positive or negative. Moreover, the relationship between Facebook and well-being appears to become positive over the college years, possibly because upper-class students use Facebook to connect socially with their peers and participate in college life. Future research should also examine developmental factors such as stronger self-concept and greater experience in personal relationships that could possibly lead to more effective use of Facebook of upper-class students. Another factor that is worth examining is how being a first-generation student influences Facebook use. It is possible that first-generation students with limited information about college life rely more on social-networking sites such as Facebook to help them adjust in college. Finally, future research should investigate the notion of Facebook friends, personality traits of profile owners, as well as the content of the profiles using path analyses to clarify further the effects of Facebook on college adjustment.

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**References**


*Results available upon request.*

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