Investigating the Relationships between Facebook and Social Connectedness, Self-efficacy and Self-esteem.

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Brian Whelan
Abstract

The aim of the current study was to investigate the relationship between Facebook intensity and social connectedness, self-efficacy and self-esteem. Participants were asked to complete a questionnaire that was comprised of four different scales measuring Facebook intensity, social connectedness, self-efficacy and self-esteem. Seventy-one participants took part in the study, of which 19 were male and 52 were female. The predictor variable was the subject’s score in the Facebook intensity scale, and the criterion variables were social connectedness, self-efficacy and self-esteem scores. The results reported that there was a significant relationship between social connectedness scores and Facebook intensity. It was noticed that a correlation between participants’ self-efficacy and self-esteem scores existed also. The difference between genders was approaching significance in the self-esteem variable. It was concluded that Facebook intensity increased social connectedness, but not necessarily self-efficacy and self-esteem.
**Introduction**

*Background*

Social networking websites have become increasingly prominent with the growth of the world-wide-web after its birth in 1991. The earliest site of this type going as far back as 1995 in the shape of geocities.com, a website designed to allow users to create and customise their own personal web pages, (Arandilla, 2012). Since then most of the more popular social networking sites have found success by gradually tailoring their agenda towards the specific wants of their subject demographic at that time. For example, myspace.com began as a general networking site but gradually orientated itself towards music as it became apparent that a majority of its users were utilising the site to follow the profiles of popular bands, it also became a fashionable tool for smaller bands seeking to increase their fame. Linkedin.com is another example of a popular networking website, which orientates towards users with work related goals, allowing members to maintain contacts throughout the business world. The social network that will be examined in this research study, Facebook.com, originated as a Harvard University profiling website with the domain name thefacebook.com, launched with the aim of allowing students to identify their peers and see who was taking what classes during the semester. Before long it dropped its Harvard exclusivity and became available to all Ivy League colleges and by September 26th, 2006, (Abram, 2006, *para. 3*) its creator Mark Zuckerberg opened the network up to all members of the public aged 13 or over with an email address. From that point onwards the network grew and grew and as of March 2013 hosted over 1.1 billion active profiles, (Associated Press, 2013).
As Facebook rapidly gained popularity, it inevitably became the subject of much research, investigating both the positive and negative aspects of such a large and easily accessible social network. One of the more prominent facets of this body of research is the study of correlations between Facebook usage and its effects on the self, such as the existing research examining how Facebook can influence inherent traits such as productivity, work ethic, self-esteem and many more. This is an important area of research as it is relatively novel resulting in many aspects having not yet been examined, and also because of its popularity, more and more people of all age groups are spending increasing amounts of times using such websites, making it vital to uncover any possible negative, or positive, side effects. While it is easy to believe that a time consuming and primarily social website would negatively affect productivity and such self-evaluations, it is also possible that having an instantly available cyber community to consult can have many positive outcomes.

Theoretical and empirical evidence of late have shown that impression management and self-presentation are some of the largest motivators for participation and subsequent maintenance of online profiles on websites such as facebook.com, (Kramer & Winter, 2008). Impression management refers to the conscious activity of attempting to shape others’ opinion or views of a certain person, object of event, and self-presentation is defined as the process of ones own attempts to construct a particular impression of themselves for others around them, (Schlenker, 2006). It is easy to see how Facebook.com and other profile-centric networks can serve as an outlet for impression management and self-presentation as they allow users to regulate content. Previous studies such as the paper by Baumeister, (2006) have highlighted the link between self-presentation and self-esteem. In their study the participants received false feedback from others about themselves and they found that
subjects with higher self-esteem were adding more detail to their self descriptions in an attempt to compensate for negative remarks made about their personalities, than those with low self-esteem, who were more likely to accept the correspondent’s opinion about them as being true. Other studies have reported contradicting evidence suggesting that those who constantly attempt to maintain and evolve their ideal self-image, such as the users regularly tweaking their online profiles, may be doing so with the intention of defending or raising their self-esteem, an effort that is sometimes maladaptive and also may lead to mental health issues, (Greenberg, Pyszczynski & Solomon, 1986). However, the mental health issues mentioned in the study may not be a direct result of the lack of self-esteem, but rather the emotional stress one endures while being aware of the problem and in their attempts to solve the self-esteem issues. The current study will aim to give further insight into this area by measuring the intensity with which participants use Facebook and the effects that varying frequencies of use may have on their self-esteem. The social connectedness variable may also tie in with the aforementioned research about self-esteem and self-presentation, as a large aspect of impression management is the desire to maintain or improve the status of certain social connections.

*Self-esteem*

In psychology, self-esteem refers to the amount of positive or negative feelings of self worth one attaches to themselves, a crucial aspect in defining a person’s well-being and general happiness, (Passer & Smith, 2007, p.453). Given how self-esteem can be affected by ones need for self-presentation, and the evidence showing how self-presentation is a common motivator for use of social networking sites, it is important
to investigate how the use of such networks affect the users self-esteem levels. A study by Mehdizadeh, (2010, p.357) examined how narcissism and self-esteem are manifested on facebook.com, gathering participants that used the website and were currently in University. Their analyses revealing that individuals higher in narcissism and lower in self-esteem were related to greater online activity as well as self-promotional content. Gender differences were also found to influence the type of self-promotional content presented by individual Facebook users. It is easily understood how higher levels of narcissism could lead to greater online activity, as the user would spend more time concentrating on shaping his or her own public image, but perhaps the most interesting result from this study is that the participants that spent more time on Facebook also had lower self-esteem, potentially hoping to present their self-image more carefully to compensate for their own perceived short-comings. This study looked exclusively at students in University, so there is ground for similar research to expand the study to those outside of third level education, of any age or profession, which could perhaps return further interesting results. An additional research study conducted by Kross, Verduyn, Leimeister, & Krcmar (2013) investigated whether or not Facebook usage affects two facets of subjective well-being; moment to moment happiness and general life satisfaction. The results of the study showed that an increase in time spent on Facebook had a negative affect over different periods on both variables, moment-to-moment happiness decreasing on a day-to-day basis and life satisfaction suffered when two weeks had elapsed. These results suggest that the perceived sense of community that one could expect to strengthen by use of Facebook may actually be undermined by the site, perhaps due to excessive maintenance of profiles and general use of the sight to enhance the cosmetic side of social relationships resulting in increased feelings of superficiality. Research by Gonzales &
Hancock, (2011) returned contrasting results to the previous work done on objective self-awareness when their conclusions asserted that becoming self-aware by observing one's own Facebook profile could enhance self-esteem rather than diminish it. However, this study focused more prominently on the participants that were repeatedly viewing and updating their own profiles rather than interacting with others, so perhaps the contrasting results are due to the difference in online activity between the studies while using Facebook. Another study by Valkenburg, Peter & Schouten, (2006) reported that their results from analysing adolescents' activity on a Dutch friend networking website showed that use of that particular social network had an indirect affect on both self-esteem and well-being in the teenagers. They found that use of the site increased the number of relationships between those taking part and also stimulated the frequency at which feedback was given by users to one another directly to their respective profiles, both negative and positive. They concluded that the profiles that were receiving positive feedback from their peers were showing both higher self-esteem and well-being and those who received negative feedback from the others involved reported lower self-esteem and well-being. These results again suggest that the content of the online experience is also a factor in determining how it affects the self, as well as the mere act of taking part. In this particular study, the vast majority of users received entirely positive feedback from their peers (78%) so perhaps circumstances in which a mixture of both positive and negative were given could slightly alter results. Further research by Steinfield, Ellison & Lampe, (2008) again reported results that contrast many other findings regarding self-esteem and social networking, they found that participants in their study with low self-esteem benefitted from Facebook usage much more than those with higher self-esteem as regards productivity when measuring social capital, suggesting that Facebook helped
to break down certain social borders that exist when working face to face. It is important to note though that in this study self-esteem was recorded prior to the usage of Facebook, so a number of the participants had initially reported low self-esteem and then found Facebook helpful in a number of social situations, perhaps as they were able to avoid any forms of social anxiety that may occur during face-to-face interaction. It would appear from the aforementioned studies that usage of online social networks does have a significant effect on self-esteem but there is room for further research in this area as contrasting results from such studies means there is yet to be a conclusive answer as to whether sites such as Facebook.com have a positive or negative effect on self-esteem. The current study aims to add to this body of literature, hopefully providing a more definitive answer by measuring self-esteem and the intensity of Facebook use and the value at which users hold the website, rather than just the participation, as is what was measured in many of the previous studies.

Self-efficacy

Another prominent aspect of self-evaluation is self-efficacy. In psychology, self-efficacy refers to the set of beliefs one has in their ability to perform adequately in any given situation, or to be able to follow through to complete tasks or reach goals, (Gerrig & Zimbardo, 2002). Self-efficacy has received increased recognition in psychology as studies emerged highlighting its importance in relation to many aspects of the self such as health behaviour change, (Strecher, De Vellis, Becker & Rosenstock, 1986) and work related performance, (Stajkovic & Luthans, 1998). Despite this, there have been limited amounts of research conducted to examine how Facebook or other online social networks may affect self-efficacy. For this reason, the
current study will include self-efficacy as one of its self-evaluation variables and investigate possible correlations between the intensity of Facebook use and self-efficacy. One previous study by Jongsung, (2013) looked at the relationship between Facebook and self-efficacy in collegiate athletes. Their results showed a statistically significant correlation between the number of Facebook friends the user had, and the level of reported self-efficacy, suggesting perhaps that a perceived larger group of friends of improved popularity may lead to increases in self-efficacy, something seen in a number of the self-esteem studies also. They also found a significant inverse relationship between the self-efficacy results and the frequency at which participants updated their status on their profiles, which could mean that those with lower self-efficacy were making more attempts to be active consistently in the online network than those with higher self-efficacy. Perhaps the latter result of this study could be due to students spending more time online because of the lack of motivation to act in a more productive manner which can occur from lowered levels of self-efficacy.

While the study concludes with the recommendation that coaches and administrators attend to the issue of Facebook usage in their athletes, this critique may imply a simplistic approach to the understanding of self-efficacy and social networking, by focusing on the negatives. The study’s initial findings about increased self-efficacy in users who felt they were part of a large circle of friends could be beneficial if those in charge of such athletes put effort into creating a greater sense of community instead of rationing use of Facebook. Another study conducted by Chyung, (2007) found that young students improved their self-efficacy when in an online learning environment. It was also noted that their improvement was significantly greater in comparison with older students who were seen to post more messages online and were generally more active. There was also a difference in gender as female students were seen to increase
self-efficacy significantly more than their male counterparts. The significant results reported in this study give ground for further investigation into online environments and their effects on self-efficacy, such as the topic presented in the current study, social networks. These studies comprise most of the literature available on self-efficacy in relation to social networking, so the present study will aim to expand on what could be an important emerging factor in modern day levels of self-efficacy; a valuable trait in achieving health goals, work-related performance, academic productivity and many other aspects of life, as previously mentioned.

Social Connectedness

A report on a number of self-appraisals including self-efficacy by Caprara, Alessandri & Eisenberg, (2012) showed that participants who reported as higher in self-efficacy were more likely to engage in prosocial behaviour and acted more agreeably in the test situations, possibly opening up further opportunities for increased social connectedness. Social connectedness refers to the relationships people have with one another, how they come together and interact. Research has shown that higher levels of perceived social connectedness may lead to increased blood pressure levels, greater immune responses, and decreased levels of stress hormones, each of which can be conducive to preventing chronic illness, (Uchino, Cacioppo & Kiecolt-Glaser, as cited by Ferris, 2012). Social connectedness has also been shown to have an indirect affect on health, as “bonding and bridging relationships between individuals can create healthy social norms, help people connect with local services, provide emotional support, and increase knowledge about health, or ‘health literacy’ within social networks”, (Kim, Subramanian & Kawachi, as cited by Ferris, 2012). These proven
benefits of the socially connected experience notwithstanding, there is importance in investigating ways in which people can help to increase their own levels of social connectedness. It is easy to conceptualise how online social networks may play a large role in perceived levels of social connectedness. On the one hand, having instant and easy access to large social groups could increase feelings of social connectedness, but as mentioned earlier, an integral motive for participation in sites such as Facebook is contingent on the users attempts at impression management, and failure to achieve the desired self-presentation could lead to decreases in levels of social connectedness, and both self-efficacy and self-esteem, all of which will be examined in the current study. Social connectedness has been viewed as an important factor in achieving various positive outcomes according to recent research on the topic, but the study of social connectedness in relation to online environments is relatively unchartered. One study by Grieve, Indian, Witteveen, Tolan & Marrington, (2012) investigated whether feelings of connectedness on Facebook should be viewed as a separate entity to social connectedness outside of online environments, and how those who did feel socially connected on Facebook scored on a number of self-reporting scales; anxiety, depression and subjective well-being. Their results showed that while Facebook connectedness was distinct from general social connectedness, Facebook connectedness was associated with lower levels of depression and anxiety, and increased satisfaction with life. This suggests, in compliance with some of the previously mentioned studies, that Facebook has increasingly been seen as a positive outlet under certain circumstances, this particular study asserting that Facebook may serve as a separate social medium in which users can develop relationships that positively affect a range of outcomes. Furthermore, a study by Kobler, Riedl, Vetter, Leimeister & Krcmar, (2013) suggested that the use of the status update system on
facebook.com generated increased feelings of social connectedness among their subjects. Their results showed that the more frequently users were updating their statuses, actively revealing information about themselves, the more connected they felt. A source of rationale for expansion of these results is that the author never investigated a potential cut-off point at which updating one’s status becomes excessive and the increase in connectedness wanes. Also, no information on the demographic of the participants was documented. The present study will take into account both age and gender when investigating social connectedness. A further study by Zwier, Araujo, Boukes & Willemsen, (2011) conducted a study about Facebook concerning both social connectedness and self-presentation. Their research asserted that having an increasingly higher amount of Facebook friends strengthened feeling of social connectedness among the participants, and aided in attaining their perception of the ‘hoped-for possible selves’. They also found though that there was a cut-off point as the amount of Facebook friends increased, that past a certain excessive amount of friends there became a negative correlation with social connectedness. This result suggests that Facebook increases social connectedness through interaction between real-life friends but when broadened to an unrealistic set of peers, social connectedness declines, possibly because users begin to feel that their online relationships are superficial in comparison to a user who is actively engaging with real-life friends online.
The present study

The primary purpose of the present study is to shed further light on the effects of social network usage, Facebook in particular, on aspects of self-appraisal, with the hope of enlightening people to the optimum levels of such usage in order to gain positives and avoid negatives from such activity. Therefore, a multitude of factors will be examined: Facebook intensity, age, gender, self-esteem, self-efficacy and social connectedness. Through knowledge of such factors it is hoped that people can seek to improve their everyday lives by moderating their use of websites like facebook.com. These factors are vital to improving everyday life, as many studies have shown, such as research by Roberts, Gotlib & Kassel, (1996) that found depletions in levels of self-esteem led directly to an increase in depressive symptoms in their participants. It has also been found that self-efficacy can be a predictor of academic performance, (Brady-Amoon & Fuertes, 2011) suggesting that higher self-efficacy may lead to better academic results, with the negative also having seen to be true. Correspondingly, high levels of social connectedness have been found to predict lower levels of depression and anxiety, as shown in a study of secondary school students by Lester, Waters & Cross, (2013). Findings such as these clearly illustrate the need to ensure one is taking the necessary precautions if they are to have the best chance of improving their well-being and general life happiness. As well as the stated variables, this study will also take into account the age and gender of its participants, in order to discover any differences between results for certain demographics. With all of the reasons mentioned, the rationale for the current study is provided.
Hypotheses

Specifically, the following hypotheses were formulated for the current study:

1. There will be a significant relationship between Facebook intensity scores and social connectedness.
2. There will be a significant relationship between Facebook intensity scores and self-efficacy.
3. There will be a significant relationship between Facebook intensity scores and self-esteem.
4. There will be a significant difference in Facebook Intensity, social connectedness, self-efficacy and self-esteem scores between males and females.
Methods

Participants

Initially, the survey was emailed to an existing list of contacts with the request that they fill out the survey and then forward it on to further potential participants, but because of an unsatisfactory amount of replies the survey was shared using the social networking site twitter.com, with the same request of forwarding the survey once completed. This eventually resulted in a satisfactory number of responses, the final amount to take part in the survey finishing at 77 people, 0 male and 0 female. The sample had a mean age of 0, the minimum age being 0 and the maximum age being 0.

Design

This study employed a correlational design with a questionnaire, using a quantitative survey, with between subjects and within subjects design. The predictor variables were age and facebook intensity, with the criterion variables being social connectedness, self-efficacy and self-esteem. Each questionnaire was the same and were administered through the website kiwksurveys.com.

Materials

Participants were gathered for this study with an electronic copy of the survey distributed primarily via email and also using a snowball effect by requesting it to be sent on to further potential participants after completion, but due to an insufficient amount of replies the questionnaire was also shared on the social networking site
twitter.com. The questionnaire included demographic information, gender and age. A self-report measure study was employed using the four scales: The Facebook Intensity Scale, (Ellison, Steinfield & Lampe, 2007) to measure how frequently the subject used Facebook and the values at which they held the service. Social Connectedness: Concept and Measurement Scale, (van Bel, Smolders, Ijselsteijn & De Kort, 2009) which measures the feeling of social connectedness experienced among participants as regards their social circles. The General Self-efficacy Scale, (GSES) (Schwarzer & Jerusalem, 1993) to measure how each participant rated their abilities to achieve certain goals, and finally The Rosenberg Self-esteem Scale, (RSES) (Rosenberg, 1965) to measure the subject’s levels of self-esteem.

The Facebook Intensity Scale, (Ellison et al, 2007) was developed to measure Facebook usage, how many friends a person has, a persons’ attachment and dependency on Facebook. The Facebook Intensity Scale consists of 8 questions and employs a 5-point rating Likert scale in the first section to measure frequency of Facebook use, levels of attachment with Facebook and how the subject would feel if the site shut down. Response categories range from 1= strongly disagree to 5= strongly agree, these scores are then added to yield a final composite score that may range from 6 to 30. The second section asks of the amount of friends the participant has acquired on the social media site. Finally the third section inquires about how much time the user spends on Facebook per day. A copy of the Facebook Intensity Scale, (Ellison, 2007) will be enclosed in the appendix section of the study.

The Social Connectedness: Concepts and Measurements scale, (van Bel et al, 2009) was devised to measure feelings of social connectedness. It aims to document the experience of belonging and relatedness between people. The questionnaire is summarised by 6 sections, each consisting of a number of questions related to
different facets of social connectedness. Examples of these are ‘Satisfaction of contact quantity’ (Q3), ‘Relationship Salience’ (Q5), and ‘Shared Understandings’ (Q6). Each section employs a 5-point Likert rating scale system, with the response categories ranging from 1= strongly disagree, to 5= strongly agree. Scores are then summed up to generate the composite score. A copy of the Social Connectedness: Concepts and Measurements scale will be included in the appendix section.

The General Self-efficacy Scale, (Schwarzer & Jerusalem, 1993) was designed to assess the subject’s perceived sense of self-efficacy. It aims to measure the beliefs of the individual as to whether they feel they can reach certain tasks of attain specific goals. The result is determined by respondents evaluating themselves on each item using a 5-point scale, with the total being added together yielding a possible score between 10 and 50 points. The factors measured on the scale range from ‘I can always solve difficult problems if I try hard enough’ to ‘I can remain calm when facing difficulties because I can rely on my coping abilities’, with each segment catering towards the participant’s confidence in completing tasks. A copy of the General Self-efficacy Scale, (Schwarzer & Jerusalem, 1993) is enclosed in the appendix section.

The Rosenberg Self-esteem Scale, (Rosenberg, 1965) was devised as a measure of the general sense of perceived self-esteem in users. It was employed in the present study study as a 10-item scale using a 5 point Likert scale rating system, the response categories ranging from 1= strongly disagree, to 5= strongly agree. The respondents are asked to reflect on their current feelings, with segments including ‘I take a positive attitude towards myself’ (Q6), ‘I certainly feel useless at times’ (Q9) and ‘At times I think I am no good at all’ (Q10). A copy of the Rosenberg Self-esteem Scale, (Rosenberg, 1965) will be included in the appending section.
**Apparatus**

SPSS version 20.0 statistical software was used to analyse the data collected in this study. The data was collected using the website kwiksurveys.com, which was chosen due to its feature that allowed automatic transfer of the dataset from the website to the SPSS application.

**Procedure**

To obtain the sample used in this study, an email was sent to 14 contacts on a mailing list with the request that the email be forwarded upon completion of the survey. When this method returned a marginally insufficient number of respondents, the questionnaire was shared on the social network twitter.com in order to make up the final numbers required for the study. All subjects were briefed by a passage preceding the questionnaire reminding them of their anonymity and outlining the purpose of the study. The introductory passage also directed those who may have been affected by the questions asked in the survey to the final page, which included contact details for personal use. All of the online results were stored on a password-protected computer.
**Results**

Analysis of the collected data was performed using the statistics program SPSS (version 20.0) in order to determine whether the hypotheses were true.

1.1 *Demographics*

From the 71 respondents to the survey, 73.2% were female (N=52) and 26.8% were male (N=19) as displayed in Graph 1. As regards age of participants, frequencies indicated that 83.1% were aged between 18 and 24 (N=59), with 9.9% falling into the 25-29 year old category (N=7) and 7% were aged above 40 (N=5) which can be seen in Graph 2.
Graph 1 – Gender of Participants

Gender

Graph 2 – Age of Participants

Age Group
1.2 Psychological Measures

Descriptive statistics displayed the mean scores for responses to the Facebook Intensity Scale, the Social Connectedness: Concept and Measurement scale, The General Self-efficacy Scale and the Rosenberg Self-esteem Scale. These scores are displayed in Table 1.

Table 1 Descriptive Statistics of Psychological Measures

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook Intensity</td>
<td>28.32</td>
<td>4.76</td>
</tr>
<tr>
<td>Social Connectedness</td>
<td>68.21</td>
<td>9.25</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>33.66</td>
<td>4.55</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>36.20</td>
<td>6.13</td>
</tr>
</tbody>
</table>
Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Male M</th>
<th>Male SD</th>
<th>Female M</th>
<th>Female SD</th>
<th>t</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook Intensity</td>
<td>27.47</td>
<td>5.29</td>
<td>28.63</td>
<td>4.56</td>
<td>-0.909</td>
<td>P=.366</td>
</tr>
<tr>
<td>Social Connectedness</td>
<td>69.94</td>
<td>10.54</td>
<td>67.58</td>
<td>8.77</td>
<td>0.954</td>
<td>P=.343</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>38.37</td>
<td>4.19</td>
<td>36.04</td>
<td>4.56</td>
<td>1.946</td>
<td>P=.056</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>37.58</td>
<td>5.27</td>
<td>35.69</td>
<td>6.39</td>
<td>1.152</td>
<td>P=.253</td>
</tr>
</tbody>
</table>

Note p is significant at .05

An independent samples t-test was performed to compare male and female scores on the self-efficacy scale. It revealed that the difference between males (M=38.37, SD=4.19) and females (M=36.04, SD=4.56) on their responses to the self-efficacy section of the survey was approaching significance, (t(69)=1.946, p=.056).

Male and female Facebook intensity scores were compared using an independent sample t-test. This revealed that there was no significant difference in Facebook intensity between males (M=27.47, SD=5.29) and females (M=28.63, SD=4.56) (t(69)=-.909, p=.366), as can be seen in table 2.

Analysis also revealed that there was no significant difference in reported feelings of overall social connectedness between males (M=69.94, SD=10.54) and females (M=67.58, SD=8.77)(t(69)=.954, p=.343).

Finally, analyses also revealed no significant difference between genders in the self-esteem scores, with males (M=37.58, SD=5.27) and females (M=35.69, SD=6.39) scoring similarly.
2 Relationships between variables

A Pearson’s correlation coefficient was performed to determine if there was a significant correlation between Facebook intensity scores and overall social connectedness scores, as can be seen in table 3. The mean scores for Facebook intensity was 28.32 (SD=4.76) and for social connectedness was 68.21 (SD=9.26). The analysis showed that there was a positive significant relationship between Facebook Intensity and Social Connectedness (r(71)= 0.28, p = .018). Therefore, the null hypothesis is rejected.

Specifically, within the social connectedness scale, the analysis displayed a significant relationship between Facebook intensity and how well participants felt they knew the feelings of others in their social network, (M=10.07, SD=2.13) (r(71)= .451, p < .01) and a significant relationship between Facebook intensity and relationship salience (M=12.24, SD=3.20) among participants (r(71)= .336, p < .01). Furthermore, it displayed a significant relationship between Facebook intensity and the respondent’s feelings of shared understandings with their social network, (M=9.65, SD=2.30) (r(71)= .267, p= 0.025). It also displayed that there was no significant relationship between Facebook intensity and the social connectedness subcategories ‘lack of relationships’ (M=13.11, SD=2.95) (r(71)= -.069, p =.569), ‘contact quantity’ (M=14.13, SD=2.45) (r(71)= .022, p=.855) and ‘contact quality’ (M=9.01, SD=2.63) (r(71)= .034, p= .779).

The mean scores for self-efficacy was M=36.66 (SD=4.55) and for self-esteem was M=36.20 (SD=6.13). Interestingly, analysis revealed that there was a statistically significant positive relationship between these two variables (r(70)= 0.419, p < .01).
Results from the Pearson’s correlation coefficient showed, as in table 3, that there was no significant correlation between the participant’s Facebook intensity and their scores on the self-efficacy scale ($r(71) = 0.18$, $p = .133$). Therefore, the null hypothesis cannot be rejected.

The Facebook intensity scores were also shown not to have a significant statistical relationship with self-esteem scores ($r(70) = -0.179$, $p = .139$). Therefore, the null hypothesis cannot be rejected. This is also shown table 3.

**Table 3 Correlation Statistics**

<table>
<thead>
<tr>
<th></th>
<th>FB Intensity</th>
<th>Connectedness</th>
<th>Self-efficacy</th>
<th>Self-esteem</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FBIntensity</strong></td>
<td>.280</td>
<td>.180</td>
<td>-.179</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.018</td>
<td>.133</td>
<td>.139</td>
<td></td>
</tr>
<tr>
<td><strong>Connectedness</strong></td>
<td>.280</td>
<td></td>
<td>.205</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.018</td>
<td>.056</td>
<td>.089</td>
<td></td>
</tr>
<tr>
<td><strong>Self-efficacy</strong></td>
<td>.180</td>
<td>.080</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.133</td>
<td>.506</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td><strong>Self-esteem</strong></td>
<td>-.179</td>
<td>.205</td>
<td>.419</td>
<td></td>
</tr>
<tr>
<td></td>
<td>.139</td>
<td>.089</td>
<td>.000</td>
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</tr>
</tbody>
</table>

*Note* $p$ is significant at .05
Discussion

The purpose of the current study was to investigate the relationship, if any, between Facebook usage and feelings of social connectedness, self-efficacy and self-esteem among participants. The intent was to examine a number of items; firstly, if the intensity of Facebook usage would have a relationship with the subject’s perceived levels of social connectedness. Social connectedness can be defined as “a short-term experience of belonging and relatedness, based on quantitative and qualitative social appraisals, and relationship salience”, (van Bel et al., 2009). Previous research has already tied higher perceived feelings of social connectedness to various positive outcomes such as the availability of emotional support and strengthened knowledge of health issues, (Ferris, 2012). Secondly the study aimed to examine any correlation that may exist between Facebook intensity and levels of self-efficacy in participants. Gerrig et al., (2002) define self-efficacy as the belief an individual has in their own ability to succeed in achieving certain goals and objectives. Self-efficacy has been shown through various studies to have an important role in positive behaviours including work related performance, (Stajkovic et al., 1998) and health behaviour change, (Strecher et al., 1986). The final variable investigated in this study in relation to Facebook intensity is self-esteem. Passer et al., (2007) explain self-esteem as the amount of positive or negative feelings of self-worth a person ties to themselves. Self-esteem studies is an area which is in no way novel, a large body of research has supported the claim that self-esteem is crucial in defining a person’s well-being and general happiness. Furthermore, the present study looked at the differences between genders in each of the above variables, in order to distinguish if any correlations existed there. It is of popular opinion today that men and women act and fare differently in almost all aspects of life, so the current study will discern whether or
not that theory applies to the previously mentioned variables too. It was also interesting to see if the use of Facebook served as a mediator in a number of subscales involving the different dimensions of social connectedness; the perception that one knows the others’ experiences, the dissatisfaction with contact quantity among an individual’s social group, the positive aspects of the quantity of people in their social group, satisfaction with contact quality, relationship salience and lastly, feelings of shared understandings between the individual and their peer group. These subscales comprise a total social connectedness score but when broken down into sections as it may give further insight as to the specific components of social connectedness that are affected most by the use of Facebook.

The results of the statistical tests indicated that significant correlations existed between Facebook intensity and social connectedness, in particular the subscales that determined how well participants felt they knew the feelings of others in their social network, their relationship salience, and their perceived shared understanding with those in their social group. It was also reported that the difference between males and females in the self-efficacy variable was approaching significance, with males reporting notably higher scores than females. While running the Pearson’s correlation coefficient tests to investigate any relationships it was noted that a significant relationship existed between self-efficacy and self-esteem scores, which was an interesting finding, despite not being directly referred to in the hypotheses of the present study. No significant correlations were found between Facebook intensity and self-efficacy or Facebook intensity and self-esteem.

The first hypothesis presented in the current study, linking Facebook intensity with social connectedness, was reinforced by the results. However, the second and third hypotheses that examined Facebook intensity’s relationship with both self-efficacy
and self-esteem were not supported by the results. Strictly speaking, there was no significant difference between genders in the variables, as touched on in the final hypothesis, although gender differences between self-efficacy scores were approaching significance.

The correlation that was found between Facebook intensity and social connectedness falls in line with a number of previous studies, for example the research by Grieve et al., (2012) who found that Facebook often serves as a positive outlet for increasing connectedness within social groups. The current study supports these assertions, specifically noting correlations between the ‘relationship salience’ and ‘shared understandings’ subscales to fit in with the findings of this particular study. It is conceivable how increases in contact with one’s social group through Facebook would heighten their perception that they understand their peer’s feelings more thoroughly. The correlation found in the ‘relationship salience’ subscale can perhaps be attributed to this same ideology, in that users of the website may feel the prominence of particular relationships increase as they are more frequently involved virtually. Previous research by Kobler et al., (2013) suggested that the higher frequency with which users used the status update function, the more connected they felt within their social group, this result supports the finding of the present study, as the analysis in both sets of research showed the direct link between increases in time spent on Facebook and social connectedness. Further literature on social connectedness and Facebook by Zwier et al., (2011) suggested a high amount of friends on Facebook could increase social connectedness. This claim was also supported by the current study, but the present study was open to all ages, unlike the Zwier et al. study, which was limited to college students. This expansion may suggest that the findings of Zwier et al. can apply to further demographics than those
examine the variation in the age demographic in the current study, with fifty-nine of the seventy-one participants falling into the 18-24 age category.

The lack of a significant relationship between Facebook intensity and self-efficacy in the present study is contrary to a number of previous studies that investigated this area, particularly the research by Jongsung, (2013) which found a relationship between the use of Facebook and self-efficacy in collegiate athletes. Perhaps this contrast is due to the mindset of athletes reacting differently as regards self-efficacy, it is reasonable to suggest that athletes could have more flexibility when it comes to self-efficacy as they are already taking part in sport, which requires them to attempt to reach goals regularly, in comparison to non-athletes who may have more intermittent objectives, which could affect perceptions of self-efficacy. A study by Chyung, (2007) reported increases in self-efficacy when students operated in an online learning environment. The contrast of these results with the non-significant results reported in the present study may suggest that self-efficacy is best improved when online networks are employed for educational purposes rather than for social benefits.

The absence of a significant relationship between Facebook intensity and self-esteem in the present study also fails to support some of the previous studies conducted around these two variables. The study by Mehdizadeh, (2010) linked participants with low self-esteem to increased Facebook use, and while no such correlation was found in the current study, it must be noted that the study by Mehdizadeh also linked narcissism levels with the self-esteem scores when comparing Facebook use, so perhaps lack of further complimentary variables to partner with self-esteem may be the reason for the absence of this particular correlation in the present study. Research by Steinfield et al., reported, in contrast to the Mehdizadeh, (2010) study, that
participants with lower self-esteem scores benefitted greatly from the use of Facebook in comparison to those with high self-esteem, in terms of productivity while online, specifically social capital. These differing results, coupled with the lack of a significant result for these two variables in the current study may suggest that Facebook and self-esteem have a less important direct relationship than originally expected.

It should be noted that there were a number of shortcomings in the current study, primarily to do with the sample. Future studies of this area should acquire a larger sample size as the total participants of seventy-one may restrict the ability generalise the findings of the study, also with a smaller sample size some aspects of the demographics may become redundant, as with the age group 30-39 in the current study, as not a single participant belonged to this age group. Another drawback of the sample was the inequality between numbers of males and females. Because such a high percentage (72.3%) of the sample were female, the tests done to investigate differences in gender may have been skewed, with only nineteen male participants it is difficult to discern whether further significant results may have been found had the gender in the sample been more evenly spread.

The implications of this research is that social connectedness is clearly affected by Facebook use. This could prove useful in any number of group situations in which there is a perceived lack of togetherness, for example if a sports coach was looking to increase relations between the members of a team, Facebook may be useful in order to increase feelings of connectedness. It also may apply to a situation in which one or more people are feeling left out of a group, the use of Facebook may play a role in alleviating the feeling of being an outsider in certain situations, with increased contact heightening social connectedness.
For future research in this area, a larger sample would be recommended, as the smaller size involved in the present study may have led to shortcomings, as previously mentioned. As well as this, future research may look at possible correlations between such variables as those used in this study and a different social networking site, for example Twitter, which has become increasingly popular in the last two years. Depending on the research, any number of variables could be added to this study, for example testing neuroticism or narcissism against the use of social networking sites.

It is concluded from this research that there are a couple of interesting results. The first hypothesis is proved to be correct when results showed that a significant relationship existed between Facebook intensity and social connectedness. It was also found that there was a significant difference between scores in self-efficacy when viewed across gender, with men reporting higher scores. Despite some of the results proving to be insignificant, the present study expands on the knowledge of a currently popular area examining social networking, while also providing the basis for further research on this topic.
References


Appendices

Demographics Page

1. Gender:
   Male       Female

2. What group do you belong to
   18-24   25-29   30-39   40+

Facebook Intensity Scale

1. Facebook is part of my everyday activity
2. I am proud to tell people I’m on Facebook
3. Facebook has become part of my daily routine
4. I feel out of touch when I haven’t logged onto Facebook for a while
5. I feel I am part of the Facebook community
6. I would be sorry if Facebook shut down
7. Approximately how many TOTAL Facebook friends do you have?
8. In the past week, on average, approximately how much time PER DAY have you spent actively using Facebook?

Response categories range from 1 = strongly disagree to 5 = strongly agree, unless otherwise noted.
Social Connectedness: Concept and Measurement Scale

1. Knowing the others’ experiences
I often know what people in my social network think.
I often know what people in my social network feel.
I am often aware of my relationships with people in my social network.

2. Dissatisfaction with contact quantity
I would like to have a larger circle of friends (R).
I feel a lack of company (R).
I would like to have a close relationship with more people (R).
I feel a lack of contact with people in my social network (R).
I feel a lack of social relationships (R).

3. Satisfaction with contact quantity
How satisfied are you with the number of people with whom you have social contact? How satisfied are you with the number of contacts with the people in your social network?
How satisfied are you with the number of people in your social network?
How satisfied are you with the total amount of time that you have contact with people in your social network?

4. Dissatisfaction with contact quality
The social contacts with people in my social network feel superficial (R).
My relationships with people in my social network feel superficial (R).
I derive little satisfaction from my social contacts (R).
5. Relationship salience

Even when we are not in each others' company, I often feel "together" with people in my social network somehow.

Aside from our contact, I often feel "together" with people in my social network somehow.

I feel that people in my social network often think of me.

I often think of people in my social network.

6. Shared understandings

I feel I have a lot in common with people in my social network.

I feel on the same wavelength with people in my social network.

I feel that people in my social network share my interests and ideas.
Rosenberg Self-esteem Scale (RSES)

1. I feel that I am a person of worth, at least on an equal plane with others.
2. I feel that I have a number of good qualities.
3. All in all, I am inclined to feel that I am a failure.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I take a positive attitude toward myself.
7. On the whole, I am satisfied with myself.
8. I wish I could have more respect for myself.
9. I certainly feel useless at times.
10. At times I think I am no good at all.

Response categories range from 1-5 ‘strongly disagree’ to ‘strongly agree’
General Self-Efficacy (GSE) Scale

1. I can always manage to solve difficult problems if I try hard enough.

2. If someone opposes me, I can find the means and ways to get what I want.

3. It is easy for me to stick to my aims and accomplish my goals.

4. I am confident that I could deal efficiently with unexpected events.

5. Thanks to my resourcefulness, I know how to handle unforeseen situations.

6. I can solve most problems if I invest the necessary effort.

7. I can remain calm when facing difficulties because I can rely on my coping abilities.

8. When I am confronted with a problem, I can usually find several solutions.

9. If I am in trouble, I can usually think of a solution.

10. I can usually handle whatever comes my way.

1 = Not at all true  2 = Hardly true  3 = Neutral 4 = Moderately true  5 = Exactly true
Informed Consent

The following page was included at the beginning of the survey:

My name is Brian Whelan, I am conducting a research survey with the aim of investigating the effects of Facebook on a number of individual traits. This research is being conducted as part of my studies and will be submitted for examination.

You are invited to take part in this study and participation involves completing and returning the attached anonymous survey. While the survey asks some questions that might cause some minor negative feelings, it has been used widely in research. If any of the questions do raise difficult feelings for you, contact information will be supplied on the final page.

Participation is voluntary, there is no obligation to take part.

Participation is anonymous and confidential. Thus responses cannot be attributed to any one participant. For this reason, it will not be possible to withdraw from participation after the questionnaire has been collected.

The questionnaires will be securely stored and data from the questionnaires will be transferred from the paper record to electronic format and stored on a password protected computer.

It is important that you understand that by completing and submitting the questionnaire that you are consenting to participate in the study.

Thank you for taking the time to participate in this survey.