The mediating effect of relatedness on Facebook use and self-esteem

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Abstract

Facebook, a popular social networking site, can serve as a venue for the enhancement of self-esteem. Why this happens remains unclear. Drawing from Positive Psychology and Self-Determination Theory, the present study investigated the effect of Facebook use on self-esteem as mediated by relatedness. Employing a cross-sectional non-experimental design, the mediation hypothesis was tested among 467 college students who agreed to answer the questionnaires. From the results of multiple hierarchical regressions, it was found out that Facebook use did not have a direct effect on self-esteem, but exerted a positive direct effect on relatedness. Likewise, related was positively associated with self-esteem. The mediation effect of relatedness was examined using Sobel test, and the results supported the hypothesis. Implications were discussed with emphasis on how relatedness can serve as the mechanism of Facebook use and self-esteem. Implications for future research were also discussed.

Keywords: Facebook; self-esteem; relatedness; positive psychology; self-determination theory

The Mediating Effect of Relatedness on Facebook Use and Self-Esteem

1. Introduction

In this era of the World Wide Web, people use online technology as a platform for connecting with one another. Online communication has created a unique environment for people to disseminate information to a wide audience and interact with each other. Social networking sites, one form of online communication, has gained immense popularity over the last decade, with websites like Facebook becoming a major platform for social interaction (Ellison, Steinfield, & Lampe, 2007; Sheldon, Abad, & Hinsch, 2011; Subrahmanyam, Reich, Waechter, & Espinoza, 2008). It should come as no surprise that the impact of online communication on real-life relationships and well-being has been the subject of much discussion. Research indicates that social types of internet use are associated with enhanced self-esteem (Shaw & Gant, 2002), and are also found to support existing relationships (Shaw & Gant, 2002; Subrahmanyam et al., 2008). These reports are indicative of the personal benefits of online communication that people may feel when they go online to connect with each other. Through online communication, their active and stimulating interaction with each other allows them to go beyond their simple state of being, or homeostasis, and therefore make them feel good (Seligman & Csikszentmihalyi, 2000).

Expecting that people are happy when they are virtually connected with each other, it would be interesting to imagine how the use of social networking sites may bring about a sense of personal worth or value among them. Facebook is perhaps one of the more important areas to examine. Around 845 million people actively used Facebook at the end of December 2011 ("Fact Sheet – Facebook," n.d.). Many of these users are adolescents and young adults, and it is possible that their interactions on Facebook influence certain psychological outcomes, such as the users' self-esteem. For example, in an analysis of Dutch adolescents' use of social networking sites, it was found that frequency of use and tone of feedback received from one's online social network affected self-esteem (Valkenburg, Peter, & Schouten, 2006). However, it is not yet clear as to how people's engagement in social networking sites, particularly Facebook use, can affect their self-esteem, and if Facebook use affects self-esteem directly or through the enhancement of certain psychological processes that may serve as mechanisms that can explain why Facebook use is associated with self-esteem.

2. Literature Review

2.1 Facebook use and self-esteem

Early research on the psychosocial consequences of internet use indicated that internet use is detrimental to well-being and is associated with loneliness, depression and stress (Kraut, 1998). Later studies, however, showed that internet use has a positive impact on people's lives, particularly for those who are extraverted. Extraverted internet users had the tendency to experience decreased loneliness and negative affect and increased self-esteem, trust in people and community involvement. On the other hand, introverts who frequently use the internet appeared to experience negative outcomes such as increased loneliness, decreased self-esteem, and less community involvement (Kraut et al., 2002). However, these studies focused on internet use in general, and did not specifically distinguish between social (e.g. instant messaging, use of social networking sites) and non-social (e.g. downloading music, searching for information) types of internet use.

Succeeding studies began to set apart social and non-social types of internet use. Shaw and Gant (2002) determined the impact of chat room interaction on depression, loneliness, self-esteem and perceived social support of undergraduate students. Pre-test, mid-test and post-test measures of each variable were taken, and results showed that participants' depression and loneliness decreased while self-esteem and perceptions of social

support increased. It was believed that the anonymity afforded by chatting led to more self-disclosure by easing the burden of social norms for face-to-face interactions. This would explain the increases in self-esteem and perceived social support as an outcome of social internet use. The researchers noted, however, that unlike the three other variables, self-esteem increased only during the second half of the study. The decreases in depression and loneliness could have given rise to enhanced self-esteem. But it was also proposed that social types of internet use may influence self-esteem indirectly through mediating variables.

The work of Valkenburg, Peter, and Schouten (2006) on the relationship of social networking sites with adolescent self-esteem and well-being provides evidence of this indirect relationship through an online survey of Dutch adolescents who had profiles on CU2, a popular friend networking website in the Netherlands. Results showed that the frequent use of the website is beneficial to adolescents' social self-esteem and well-being, although its beneficial effect was indirect. In addition, website use increased the frequency of interactions with friends and the number of reactions to profiles. These reactions, or feedback, were mostly positively toned. Increased interaction with friends coupled with positive feedback enhanced social self-esteem and well-being. A few of the participants reported receiving mostly negative feedback, which decreased self-esteem and well-being. The results were suggestive of the users' sensitivity to the quality or valence of feedback they received from friends, which could hint at a satisfaction [or dissatisfaction] of relatedness with other people.

2.2 Facebook use and relatedness

Relatedness refers to a person's need for close connections with other people. In Self-Determination Theory (SDT), relatedness is one of the three basic needs that humans must satisfy for healthy development and optimal functioning to commence (Ryan & Deci, 2000). It appears that the satisfaction of the need for relatedness occurs regardless of the medium that facilitates social interaction. Face-to-face, telephone-mediated, and online social interactions can enhance the sense of social connectedness among people whose needs for relatedness, autonomy and competence are met through those interactions (Downie, Mageau, & Koestner, 2008). This means that even if the interaction is technology- or internet-mediated, people may still feel close to their friends. For instance, adolescents feel closer to their friends when communicating with them through instant messaging, chatting and social networking site use (Valkenburg & Peter, 2007). These social types of internet use are also valued when it comes to self-disclosure. Adolescents who find it awkward to disclose intimate topics in a face-to-face conversation with others may be able to talk about the matter through online communication. As a result, they experience good feelings for being able to disclose.

The satisfaction of the need for relatedness seems to occur strongly within the context of Facebook. Subrahmanyan and his colleagues (2008) examined the relationship between the online and offline (or face-to-face) social networks of young adults who were users of Facebook and other social networking sites. The researchers maintained that young adults use the internet to sustain offline relationships, and thus it is likely that they carry over offline issues to Facebook. The study confirmed that young adults' motives for the use of social networking sites are of a relational nature (e.g. keeping in touch with family and friends, making plans with friends, contacting people they do not see often). There was also an overlap between their online and offline social networks. They also used Facebook and other social networking sites to strengthen weak relationships from their offline social network.

In an attempt to further explore online social interactions and their ability to facilitate social connections, Sheldon, Abad, and Hinsch (2011) found a paradoxical relationship between Facebook use and the need for relatedness. The researchers conducted a series of tests to show that the need for relatedness functions as a motive and outcome in using Facebook, and that deprivation of Facebook use decreases relatedness need satisfaction and predict higher levels of usage. The researchers termed relatedness need satisfaction as "connection" and relatedness need dissatisfaction as "disconnection." Results showed that Facebook makes users feel socially connected and disconnected at the same time. In addition, users reported feelings of disconnection during the period where they were not able to access their accounts. Disconnection then predicted greater

Facebook use following the deprivation period. It is apparent that disconnection motivates users to compensate for the inability to address the lack of close connections with others by using Facebook. On the other hand, Facebook use satisfies the need for relatedness because of the tendency for users to have pleasant, positive experiences while interacting on Facebook. Hence, connection is directly associated with more frequent, greater, or more intense Facebook use, which users find rewarding and enjoyable. These findings led the researchers of the present study to consider relatedness as a possible mediator of the relationship between Facebook use and self-esteem.

2.3 Relatedness and self-esteem

The satisfaction of the need interpersonal needs contributes to positive human functioning, and one of its indicators is an enhanced self-esteem. When a person experiences a sense of belonging and connection with others, that person will have high self-esteem. Relatedness is associated with positive outcomes, such as positive affect, for activities that foster intimate social interactions (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Deci and Vansteenkiste (2004) cited the argument of Baumeister and Leary on relatedness as the people's inclination towards interacting with others whom they do not just feel connected to but whom they also care for. In relating with others, people enjoy social experiences that involve meaningful conversations with others, or reaching out and having fun with significant persons, and these experiences can increased their social relatedness. (e.g., Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). The feeling of being connected with significant people leads to a stronger sense of self, and this relationship can be viewed from the wider perspective of Positive Psychology. People draw their sense of self from their interpersonal strengths, such as valuing relationships with others and being sensitive to their thoughts and feelings (Seligman, Steen, Park, & Peterson, 2005). When Facebook users express their interpersonal strengths to each other through their online interaction, each of them experiences a stronger relatedness, and consequently feels a higher self-esteem.

2.4 The present study

The current literature focused on a variety of social types of internet use. The progress of research on Facebook use and its consequences now brings a question about the reasons why Facebook use affects people, particularly the adolescents. With basis on Positive Psychology that takes into account the things that are positive in people such as their values, strengths, beliefs, emotions and qualities (Kobau et al., 2011), and along with the earlier studies that tested the predictive relationship of Facebook use on specific criterion variables have now provided a basis for examining the possible mechanism that could directly point to the reason why Facebook use can positively affect self-esteem. The present study endorsed the SDT to explain the relationship between Facebook use and self-esteem. SDT emphasizes the natural propensity of human beings towards activity, growth, and integration where people are driven to satisfy the basic needs, including relatedness (Ryan & Deci, 2000). Relatedness is the need to feel close to and connected with other people (Sheldon, Abad, & Hinsch, 2011). People experience enhancement in well-being as a consequence of need satisfaction (Deci & Ryan, 2000; Leak & Cooney, 2001; Ryan & Deci, 2000). One important aspect of well-being is self-esteem, which is viewed not as a need, but as an outcome of need satisfaction (Ryan & Brown, 2003).

The present study thus hypothesized that Facebook use exerts a distal effect on self-esteem, and that this effect can only significantly account for changes in self-esteem when relatedness is achieved. Although social types of internet use are generally related to increases in self-esteem, the present study argued that this relationship of Facebook use and self-esteem is more distant, and requiring a satisfaction of relatedness. Facebook use increases the chances of being able to interact with others and satisfy relatedness (Valkenburg, Peter, & Schouten, 2006; Shaw & Gant, 2002), therefore it is not Facebook use itself that directly affects self-esteem, but its ability to strengthen the users' relatedness.

3. Methods

3.1 Participants

A total sample of 503 undergraduate university students in the Northern Mindanao Region of the Philippines was obtained for this study. However, 36 participants were excluded from the study due to either an obvious response bias or excessive missing data in their questionnaires. Only 467 participants were included in the final analysis, with 233 males (51.9%) and 216 females (48.1%). The participants' ages ranged from 15 to 30 years old (M=17.89, SD=1.81).

Measures

Self-esteem. The 40-item Self-Esteem Rating Scale (Nugent & Thomas, 1993) was used to measure self-esteem. Items explored areas of self-evaluation, including overall self-worth, social competence, problem-solving ability, intellectual ability, self-competence, and worth relative to other people. Participants answered on a seven-point Likert scale ranging from 1=Never to 7=Always. The reliability coefficient for the scale was α=.91.

Facebook use. Facebook use was assessed using the 8-item Facebook Intensity scale (Ellison, Steinfield & Lampe, 2007). It measured on a seven-point Likert scale (from 1=Never to 7=Always) the duration of participants' Facebook use and included items on emotional connectedness to Facebook and the integration of Facebook use into one's daily routine. The scale was divided into two sections: the first contained items 1 to 6 to which participants responded the second contained items 7 (approximately how many Facebook friends do you have?) and 8 (in the past week, on average, approximately how much time per day have you spent actively using Facebook?), which were open-ended questions that required participants to indicate their answers. The scale reliability was α=.86.

Relatedness. An 8-item relatedness subscale of the Intrinsic Motivation Inventory (IMI) ("Intrinsic Motivation Inventory," n.d.) was used to measure the mediator variable. The relatedness subscale is a recent addition to the IMI and has been used in studies involving interpersonal interactions. Some words on the items were modified to prime participants to think of their interpersonal interactions in the context of Facebook. Participants answered on a seven-point Likert scale (from 1=Not True At All to 7=Very True). Initial data analysis yielded a scale reliability coefficient of α=.61. With the removal of 4 items (i.e., items 1, 2, 5 & 6), the scale reliability increased to α=.79.

3.2 Data Analysis

Descriptive indices were initially obtained in order to check for the normal distribution of the data. Multiple Hierarchical Regression analysis was undertaken for the test of the paths in the hypothesized mediation model. Finally, the Sobel test was conducted to verify the fit of the hypothesized model on whether the mediator carried over the influence of Facebook use on self-esteem.

4. Results

To determine whether relatedness mediated the effect of Facebook use on self-esteem, we began by obtaining the correlations among the three variables. The proponents expected relatedness to be the link between Facebook use and self-esteem as it was hypothesized that Facebook use does not predict self-esteem.

As shown in Table 1, the means and standard deviations of all the variables under study are within the normal range. Although not included in the table, skewness and kurtosis were found to be very close to 0. These indices were inspected in order to satisfy the normality assumption for multivariate analysis. In the same table, it can be seen that the correlation of self-esteem and Facebook use was not significant (r=.067), which hints at a

lack of association between each other. Relatedness was positively correlated with Facebook use (r=.503, p<.01) and with self-esteem (r=.143, p<.01), indicating an observable association between them.

Table 1

Scale, Descriptive Statistics and Correlation among Variables

Variables	No. of Items	Possible Range	Observed Range	M	SD	Cronbach α	1	2	3
Self-Esteem	40	1.00-7.00	2.00-7.00	4.75	.71	.92	–	.067	.143**
Facebook Use	8	1.00-7.00	1.17-6.08	3.42	1.19	.86		–	.503**
Relatedness	4	1.00-7.00	1.00-7.00	3.71	1.22	.79			–

Note. **p<.01

To test the hypothesized model of the mediating effect of relatedness on Facebook use and self-esteem, hierarchical regression analysis was first performed, and the results are shown in Table 2. In step 1, Facebook use was tested as a predictor of self-esteem, and results showed no significant direct effect. It indicated that Facebook use did not directly contribute to self-esteem. In step 2, Facebook use was tested as a predictor of relatedness, and results indicated a positive direct effect. In step 3, Facebook use and relatedness were both entered in the regression equation as predictors of self-esteem, and results showed that only relatedness significantly predicted self-esteem. These results were further examined in order to test the mediating role of relatedness in the effect of Facebook use on self-esteem. Sobel test was performed and the results showed a significant test statistic (4.476, p<.001), indicating that, indeed, it is true that the relationship of Facebook use and self-esteem is mediated by relatedness.

Table 2

Hierarchical Regression Analysis for Mediation

Variable	B	SEβ	t	p
Step 1				
Facebook Use on Self-esteem	.067	.046	1.458	.146
Step 2				
Facebook use on Relatedness	.247	.045	5.501	.000
Step 3				
Facebook use on Self-esteem	-.018	.045	-.411	.682
Relatedness use on Self-esteem	.348	.045	7.726	.000

Note. ** p<.01; *p<.05
Step 1: F(1, 465) = 2.125, ΔR2=.002, p=.146
Step 2: F(1, 465) = 30.257, ΔR2=.059, p<.001
Step 3: F(2, 464) = 31.040, ΔR2=.114, p<.001

To illustrate these results, Figure 1 shows how the variables in the model are related. Initially, no direct effect was already found on Facebook use with self-esteem (path *c*), but Facebook use had positive direct effect on relatedness (path *a*). Relatedness also exerted a positive direct effect on self-esteem (path *b*). With the inclusion of the mediator in the equation, only relatedness had a positive effect on self-esteem. This is the case of full or complete mediation wherein Facebook use exerts an impact on self-esteem via the satisfaction of relatedness.
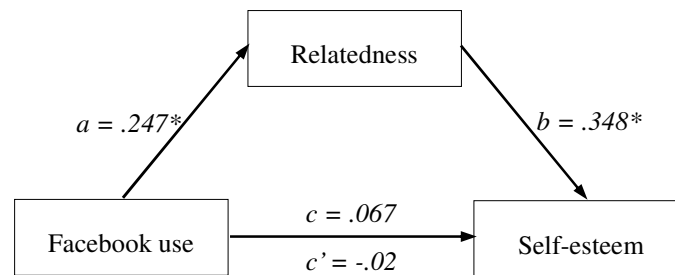
Figure 1. Mediation Model of Facebook use and self-esteem

5. Discussion

In the present study, we proposed that the effect of Facebook use on self-esteem occurs via relatedness need satisfaction. Our results supported our proposition that people manifest high regard for themselves when they use Facebook because they feel close and socially connected to other people as a result of their online interaction. Individuals gain self-worth from their interaction with other people in the social network. These results represent what Positive Psychology asserts that people feel good when they engage in activities that allow them to go beyond their homeostasis. Their interaction with each other in social networking sites like Facebook gives them the opportunity to engage in meaningful exchanges of thoughts and feelings. Interacting with others through connecting with their Facebook friends can enhance a sense of personal value or worth given that their intrinsic motive to establish meaningful relationships is met. In effect, the process sustains their interpersonal strength.

Within the mediation model, it was expected that self-esteem can be an outcome of relatedness. This expectation was based on the argument that social activities that are perceived to be enjoyable and pleasant are related to increases in the emotional well-being. In the present study, it is believed that this argument applies to Facebook use as well. Relatedness needs are met through activities on Facebook that not only foster intimate social interactions, but are enjoyed by users as well. It is likely, however, that not all activities on Facebook affect self-esteem. The use of certain Facebook components (e.g., commenting on a person's status or photos) may have more impact on self-esteem than others.

The absence of direct relationship between Facebook use and self-esteem was confirmed in the current study, and evidence from the mediation model pointed directly to the important role of relatedness in allowing self-esteem to benefit from Facebook use. Facebook has a variety of functionality, and its users may also have varied motivations for using it. The findings of the study did not intend to generalize all Facebook usage across all its functionalities. The results may be used to forward an argument that only when Facebook users choose to use the social network for socially enhancing activities where they make an active engagement in the social processes and build relationships with others can it become beneficial to the their self-esteem.

The relationship between Facebook use and self-esteem is distant, but this distal relationship is established through a more proximal psychological process involving our need to be connected to other people. Self-esteem is an outcome that does not occur overnight, but rather takes a long time to develop. Thus, the effects of Facebook use on self-esteem also occur in gradual increments, not on a sudden, large scale. It is possible that Facebook use explains why some people are more comfortable with online communication over face-to-face communication. In a study of preference for email and face-to-face communication among internet users, Joinson (2004) contended that unlike face-to-face communication, online communication allows for more regulation of self-presentation, self-disclosure, the pace of interaction, and behavioral reactions such as nervousness. These factors are also considered to explain why online communication appeals to the youth to a

great extent (Valkenburg & Peter, 2011). It is believed that the same practical implications apply in the case of Facebook. Since relatedness is a source of self-esteem, and Facebook use can meet these relatedness needs, Facebook offers people opportunities to engage in social interactions sans the interferences that characterize face-to-face communication.

Likewise, the online interactions of individuals who find themselves in an awkward position when they are engaged in actual face-to-face social situations may actually be meaningful and beneficial for them. Socially anxious persons or those with low self-esteem can benefit greatly from Facebook use. With Facebook, they have control over who they interact with, how they present themselves, and what information to disclose. Thus, Facebook becomes a safe space for facilitating the satisfaction of relatedness. Since they can choose how to present themselves online, they may feel that they do not have to worry about other people's reaction to them. It would be a favorable experience for them if their online self-presentations are accepted by those who they relate with. This experience may elicit positive feelings, thereby increasing self-esteem. If the experience is repeated overtime, self-esteem may not be the only thing that would be enhanced, but also their well-being.

Finally, the study has shown that Facebook use elicits opportunities for close, supportive interactions that satisfy relatedness, which then enhances self-esteem of its users. There is reason to believe that Facebook use is advantageous especially for persons who find face-to-face communication difficult. However, the interpretation of the results of this study warrants a little caution for the following reasons. First, hierarchical regression provided a series of separate analysis of the relationships of the variables, not a test of an overall model fit. Also, hierarchical regression cannot test for causality. Second, it is possible that there are other psychological processes that can act as mediators of the Facebook use and self-esteem relationship. Future research may consider testing the same model with a stricter model testing method, such as the use of Structural Equation Modeling, and testing other possible mediators of Facebook use (or even other social types of internet use) on self-esteem. Personality variables such as extraversion and agreeableness, or motivational variables may be included in the mediation model in order to increase our understanding of the psychological processes that play important roles in linking social types of internet use with people's sense of self.

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