



The Relationship between Facebook Use and Loneliness: A Comparison Between High-School Students and University Students

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Foreword and Acknowledgements

Submitted in partial fulfillment of the requirements of the BSc Psychology degree, Reykjavik University, this thesis is presented in the style of an article for submission to a peer-reviewed journal.

I wish to thank my friends and family for their support and patience during my study. My supervisor gets special thanks for excellent advices and support in completing this work.

Abstract - English

Many studies have investigated the relationship between Facebook use and loneliness but the results have been ambiguous. Former studies have focused on adults, neglecting other age groups. The aim of this study was to examine this relationship comparing secondary school students to University students. The study used two data sources. Data for the secondary school students included 2089 secondary school students at the age of 13-16 who participated by answering a questionnaire. Data for the University students included a total of 419 students from the Reykjavik University who answered an online survey. Questions used in this study came from the Icelandic Centre for Social Research and Analysis (ICSRA) and results were examined using multiple regression. Results showed that the more time students spent using Facebook, the lonelier they felt. In addition, results revealed that for University students compared to secondary school students, the association between Facebook use and loneliness was not as strong. Why Facebook use is a moderately strong factor in forecasting loneliness for secondary school students, but not University students, needs to be studied further.

Key words: loneliness, Facebook, well-being, students

Abstract – Icelandic

Margar rannsóknir hafa skoðað samband á milli notkunar á Fésbók (Facebook) og einmanaleika. Þær hafa flestar lagt áherslu á fullorðna einstaklinga, og hafa niðurstöður verið óljósar. Markmið þessarar rannsóknar var því að skoða þetta samband hjá grunnskólanemum samanborið við háskólanema. Þátttakendur í rannsókninni voru annarsvegar 2089 grunnskólanemar sem tóku þátt með því að svara spurningalista. Hins vegar voru þátttakendur 419 nemendur frá Háskólanum í Reykjavík sem svöruðu spurningakönnun á netinu. Allar spurningar í þessarri rannsókn komu úr spurningalistum frá stofnuninni. Rannsóknir og greining og voru gögnin skoðuð með aðhvarfsgreiningu. Niðurstöður sýndu að því meiri tíma sem nemendur vörðu á Fésbók, því meira einmana voru þeir. Að auki sýndu niðurstöður að tengslin á milli notkunar á Fésbók hjá háskólanemendum, samanborið við grunnskólanemendur, voru ekki eins sterk. Af hverju þessi tengsl eru sterkari hjá grunnskólanemendum og fara minnkandi þegar komið er í háskóla þarf að skoða betur.

Lykilorð: Einmanaleiki, Fésbók, vellíðan, nemendur

The Relationship Between Facebook Use and Loneliness: A Comparison Between High-School Students and University Students

What is it about Facebook that makes 700 million people all over the world so attached to it, making it the most popular social network site globally? Facebook makes it easy to find and connect with old and new friends. It is fun because you can play games with friends online, keep up with the latest gossip and follow people's lives through photos and postings. It may sound a bit strange, but Facebook is found to be very stalker friendly. Still people upload photos and personal information about themselves and share them with people they sometimes do not even know. If you have no one to turn to, have few friends or are shy, spending time on Facebook might make you feel surrounded by others even when no one is around. It can help you share your emotions with others without having to face them. Spending time on Facebook might help soothe the feeling of loneliness that individuals experience, but is that the case? Does spending time on Facebook ease the feeling of loneliness?

Loneliness

Human beings are social creatures and they all need love and affection, as well as face-to-face communication with others (Shaw & Gant, 2002). It has been suggested that people possess a need to belong and if these needs are not met it can affect their emotions and drive them to experience negative emotional feelings such as loneliness (Baumeister & Leary, 1995). Loneliness has been defined as an experience that occurs when a person's network of social relations is lacking in some important way, either qualitatively or quantitatively (Peplau & Perlman, 1982; Perlman & Peplau, 1981). It is a complex and unpleasant feeling that usually arises when individuals experience a disparity between current social relations and desired social relations (Peplau & Perlman, 1982; Perlman & Peplau, 1981). Loneliness is a universal, depressing and a draining condition that can have a great effect on individuals' lives. It has been reported that it can make individuals feel as

they are the only person in the world, and some go to the extreme and state that it can decrease individuals desire to live (Killeen, 1998).

Loneliness is quite common and has therefore been the focus of numerous studies all over the world with the main aims of finding out what effects loneliness and how it can be prevented (Cecen, 2008; Girgin, 2009; Jin, 2013; Li-Jane Chen & Shi-Kai Chung, 2007; Nicpon et al, 2006; Oswald & Clark, 2003; Segrin, 1999; Spitzberg & Thomas, 1987; Thoits, 1995; Valås, 1999; Wheeler, Reis, & Nezlek, 1983). There are many things that can influence loneliness; such as personality (Cheek & Busch, 1981; Jackson, Soderlind, & Weiss, 2000), for example, introversion (Kraut et al., 1998, 2002), poor social skills (Baumeister & Leary, 1995; Chris Segrin, 1999; Spitzberg & Thomas, 1987), social support (Nicpon et al., 2006), and network of friends (Jin, 2013; Vaux, 1988). Those with better social skills are likely to have a larger network of friends making it easier for them to challenge feelings of loneliness (Segrin & Flora, 2000). However, though lonely people are found to have fewer friends (Jin, 2013; Vaux, 1988) the quantity of friends does not seem to matter, but the quality of the relationships (Wheeler et al., 1983), how the individual values the relationship and how intimate the time spent together is (Wheeler et al., 1983). Supporting Wheeler et al. (1983) findings, Ernst and Cacioppo (1999) suggest that having a few, but closer friends instead seems to be enough to satisfy people's need for communicating and keep them from being lonely (Ernst & Cacioppo, 1999). There are many other factors that can influence loneliness. Studies have shown that those with learning disabilities are more likely to experience feelings of loneliness (Margalit, 1991, 1998) often because of a negative peer acceptance (Valås, 1999). Lonely people also tend to be shy (Cheek & Busch, 1981) and some are even anxious about communicating with others (Chris Segrin & Kinney, 1995; Zakahi & Duran, 1985).

Most studies suggest that males experience higher degrees of loneliness than women (Dykstra & Fokkema, 2007; Li-Jane Chen & Shi-Kai Chung, 2007; Upmanyu, Upmanyu, &

Dhingra, 1992; Wiseman, Guttfreund, & Lurie, 1995) even revealing that males suffer more frequently than women from loneliness (Girgin, 2009). However, women report, and admit feelings of loneliness to a much higher extent than men which might be due to the fact that they are more willing to express their feelings, including loneliness (Borys & Perlman, 1985; Cramer & Neyedley, 1998).

First-year college students, who move away from home, are often exposed to various psychosocial problems including loneliness (Nicpon et al., 2006). These changes are often due to fading relationships with high-school best friends, including less closeness, commitment and satisfaction with the relationships (Jackson et al., 2000; Oswald & Clark, 2003). Maintaining high-school friendships is found to be a buffer for adolescents from social loneliness (Oswald & Clark, 2003), so maintaining long distance high-school friendships, with the help of the Internet for example could prove helpful. However, previous findings on Internet use and loneliness have been ambiguous (Kraut et al., 1998, 2002). In 1998, Kraut and partners studied general Internet use in connection with loneliness. They found that using the Internet was associated with declines in psychosocial well being, including loneliness (Kraut et al., 1998). However, in their revisited study from 2002 they did not report the same results. The negative effect they found in 1998 was only found for introverts while in contrast, Internet use was found to decrease feelings of loneliness in extraverts (Kraut et al., 2002).

Loneliness and Facebook

When thinking about social networking it seems impossible to think how different communications were only few years ago. Now everyone can be connected with each other through computer devices, anywhere in the world. This has helped groups, childhood friends, relatives and others to maintain relationships – even long distance ones (Lou, Yan, Nickerson, & McMorris, 2012). Being connected through social media sites also helps people to share their thoughts, interests and opinions with those whom they are connected

with, which is found to help with social support and self-esteem among young adults (Shaw & Gant, 2002). Even though many social network sites can be found on the Internet, Facebook appears to be the most popular. There are over a billion people using Facebook and over half of them use it daily (Kross et al., 2013). Many studies have therefore examined the relationship between Facebook use and individual characteristics, as well as between Facebook use and individual well-being, including loneliness. But, with ambiguous results (Kalpidou, Costin, & Morris, 2011; Kross et al., 2013; Lou et al., 2012; Manago, Taylor, & Greenfield, 2012; Oldmeadow, Quinn, & Kowert, 2013; Reich, Subrahmanyam, & Espinoza, 2012) it is still not clear if increased Facebook use correlates positively or negatively with increased loneliness. Though majority of research, however, report a negative relationship (Ellison, Steinfield, & Lampe, 2007; Kalpidou et al., 2011; Manago et al., 2012; Reich et al., 2012), it is limited in scope since most focus on adults (Ellison et al., 2007; Jin, 2013; Lou et al., 2012; Oldmeadow et al., 2013) and neglect other age groups such as secondary school students and seniors.

Studies have also focused on quantity of Facebook friends (Ellison et al., 2007; Manago et al., 2012), how people are using Facebook and why (Anderson, Fagan, Woodnutt, & Chamorro-Premuzic, 2012), instead of looking at time spent on Facebook in correlation with well-being, such as loneliness. Also, most studies have focused on well-being and though well-being includes loneliness, it is important to examine the direct relationship between Facebook use and loneliness, regarding how much effect loneliness can have on individual's lives.

The current study

Given the different methods of previous research and the shortage of research regarding loneliness and Facebook use with different age groups, the main aim of the present study was to examine the relationship between loneliness and Facebook use with secondary school students compared to University students.

Method

Sample and Procedures

The current study used two data sources. Data for the secondary school students came from the 2012 population based *Youth in Iceland* surveys. This sample included 2089 out of 10.897 (19%) randomly selected students from 8th, 9th, and 10th grade students, aged 13-16 years, who were enrolled in Icelandic secondary schools during February 2012 (Álfgeir Logi Kristjánsson, Hrefna Pálsdóttir, Inga Dóra Sigfúsdóttir, & Jón Sigfússon, 2012). In this sample about 48% (N=1006) were boys and 50% (N=1054) girls. A total of 1.4% (N=29) did not define their gender. The Icelandic Centre for Social Research and Analysis (ICSRA) supervised all aspects of data collection at Reykjavik University. The data collection was carried out with passive parental consent using procedures approved by the Icelandic authority overseeing the protection of human research subjects. Anonymous questionnaires were distributed by ICSRA to all secondary schools in Iceland along with envelopes for returning completed questionnaires. Teachers at individual schools supervised the student's participation. All students who attended school on the day the questionnaire was scheduled to be administered were supposed to complete the questionnaires. Strict instructions were given to the students that they should not write their names or any other identifying information on the questionnaire and when finished they were told to place their questionnaire in the sealed envelope and hand it to the supervising teachers who provided them.

Data for the University students was collected through an online survey sent to all students at Reykjavik University (N=3.222) A total of 419 students answered the questionnaire, the response rate being 13%. The sample included a total of 43% (N=223) males and 38% (N=196) females.

No one received any rewards for participation and the students were not required to sign a written consent. Every participant fully understood that they were taking part in a

survey and that the results would be anonymous. Also, every participant was informed that the participation was voluntary and that they were free to end participation at any time.

Measures

Questions in this study came from the Icelandic Centre for Social Research and Analysis (ICSRA) (2012).

Loneliness was assessed using a total of five questions from the ICSRA questionnaire. Participants were asked to rate how often (nearly never, seldom, sometimes or often) they had experienced the following for the last week: *You felt lonely*, *You were sad or had a little interest in doing things*, *You cried easily or wanted to cry*, *You felt down or sad*, and *You were not excited about doing anything* (see Appendix A). The scores were averaged to create a summary measure (Cronbach's $\alpha = .88$).

Learning disabilities were measured with four items. Participants rated how much (1=not at all to 6=very much) dyslexia, slow reading speed, other reading disabilities and dysgraphia had influenced their learning performance. The scores were averaged to create a summary measure (Cronbach's $\alpha = .82$).

Support from friends comprised five items. Participants were asked how easy or difficult they had receiving the following from friends: Care and warmth, conversation about personal matters, advice on their studies, advice on other matters (what they are doing), and assistance. The scores were averaged to create a summary measure (Cronbach's $\alpha = .88$).

Change of residence or schools was a dummy variable that comprised of having moved to another neighbourhood/municipality or changed schools (1) compared to not having moved or changed schools (0). Gender was coded 1 (males) and 0 (females) and school level was coded 1 (university students) and 0 (secondary school students).

Time spent on Facebook daily was measured with one question. The answers ranged from 1 (Nearly no time at all) to 8 (6 hours or more).

Data Analysis

Multiple regression was used to assess the association between the independent variables and loneliness. All of the assumptions for multiple regressions were met except the assumption for normality of the residual. Also, four residual outliers (0.16%) were found in the whole sample.

Results

Table 1 shows descriptive statistics for the total sample. The dependent variable concerned participant's self report of how much they had experienced loneliness for the last week. As seen in Table 1 most of the secondary school students reported little or no feelings of loneliness. The average for time spent on Facebook daily indicated that most secondary school students used Facebook for 2 hours or less daily. In addition, most secondary school students found it easy to receive support from friends while few reported having changes in residence or schools.

Table 1.
Descriptive Statistics for the Total Sample

	Secondary School Students			University Students		
	M	SD	N	M	SD	N
Loneliness	1.70	.78	2045	1.81	.72	426
Gender	.49	.49	2060	.53	.49	419
Changes of residence or school	.13	.33	2041	.32	.46	427
Learning disabilities	1.75	1.00	2064	1.79	1.08	427
Support from friends	3.21	.69	2049	3.32	.61	427
Time spent on Facebook daily	3.36	1.83	2089	3.59	1.66	425

As can be seen in Table 1 most University students also reported little or no feelings of loneliness. However, University students reported slightly more loneliness than secondary school students. It is shown in Table 1 that time spent on Facebook increased slightly between the two school levels, though both group of students reported using Facebook for 2

hours or less daily. Additionally, University students reported slight more changes between residence or school compared to secondary school students. Like with secondary school students, most University students found it easy to seek support from friends.

As seen in Table 2 there was a positive association between the use of Facebook and loneliness. The more time students spent on Facebook, all other predictors held constant, the lonelier they felt, effects being medium in size, based on Cohen (1988, 1992). University students reported being lonelier than secondary school students, all other predictors held constant.

Table 2.
The Independent Variables' Relationship with Loneliness

Independent variables	<i>B</i> *	<i>Std. Error</i>	β	<i>t</i>
Constant	2.412	.090		26.843
Gender	-.471	.090	-.303	-15.227
School level	.421	.031	.210	4.752
Learning disabilities	.085	.015	.109	5.761
Support from friends	-.300	.023	-.261	-13.190
Changes in residence or school	.161	.041	.077	3.968
Time spent on Facebook	.096	.009	.224	10.760
Time spent on Facebook x school level	-.088	.022	-.178	-3.949

* $p < .001$

An interaction between Facebook use and school levels was negative, indicating that for University students compared to secondary school students the negative association between Facebook use and loneliness was not as strong. This study's model explained a total of 19.1% in the distribution of loneliness $F(7, 2276) = 76.77, p < .001$.

Discussion

The main aim of the present study was to examine the relationship between time spent on Facebook and loneliness. Also, to find out if there is an interaction between school

level and Facebook use when it comes to loneliness. The current study offers insight into the relationship between Facebook use and loneliness, in general, and also for secondary school students compared to university students.

The results showed that the more time students spent using Facebook, the lonelier they felt. In addition, results revealed that for University students compared to secondary school students, the association between Facebook use and loneliness was not as strong. In fact, when a regression was run only for the University students, there was no association between Facebook use and loneliness. These findings are not consistent with previous findings suggesting that Facebook use either correlates positively with loneliness (Kross et al., 2013), or negatively (Ellison et al., 2007).

This study's focus was on the effect of Facebook use on loneliness, but when data was examined for other factors possibly influencing loneliness, data revealed that a couple of other independent variables were significantly influencing loneliness ($p < .05$). One of these factors was change between residence or school. The results of the current study revealed that University students were likelier than secondary school students to have transferred between residence or schools. Previous studies suggested that being in contact with friends and family through the Internet, and especially Facebook, is important for those who have gone through these changes (Lou et al., 2012). They also suggest that it is very important for those students who move away from home to maintain their friendships with high-school friends (Jackson et al., 2000; Oswald & Clark, 2003). It might be very helpful for them to use Facebook to connect with all these people. That might explain in some part why the association between Facebook use and loneliness was not as strong for University students as for secondary school students. But, it does not explain why a negative association is lacking between the two measures for University students as some studies have found (Ellison, Steinfield, & Lampe, 2007; Jin, 2013; Lou et al., 2012). This might also explain why the decrease in loneliness by using Facebook is not found with secondary school students, but

they most often still live with their parents and siblings, and if not transferred between schools, they stay with the same group of students throughout the whole secondary school system. At school they are required to attend all classes so throughout most of the day they are surrounded by their peers. However, being surrounded by people does not mean that loneliness is not present (Park, 2009), though it might help. Because University students are often not required to attend classes, and therefore not as likely as secondary school students to be surrounded by peers throughout the day, it is a possibility that Facebook is helping them to connect with their peers and plan gatherings and events. In contrast, secondary school students have the possibility to connect with their peers at school time. These are all speculations, but why Facebook use is a moderately strong factor in forecasting loneliness for secondary school students needs to be studied further.

Gender was also one of the influencing factors. The results revealed that gender had the most effect on loneliness but men reported lower levels of loneliness than women which supports previous researches (Dykstra & Fokkema, 2007; Girgin, 2009; Li-Jane Chen & Shi-Kai Chung, 2007; Upmanyu et al., 1992; Wiseman et al., 1995). These results might support previous studies suggesting that women are more willing than males to admit their emotions (Borys & Perlman, 1985; Cramer & Neyedley, 1998).

Results of the current study were consistent with former findings showing that support from friends was correlated with decreases loneliness (Nicpon et al., 2006), but most University students and secondary school students reported little or no difficulties in receiving support from friends. In addition, results showed a minor but significant relationship between students with learning disabilities and loneliness which supports previous findings (Margalit, 1991, 1998). Previous studies suggested that it might be because of a negative peer acceptance (Valås, 1999) but it is also possible that those with learning disabilities might be insecure about their difficulties in school causing them to be more withdrawn than their peers. These are all guesses but if this is the case it might explain the

relationship between learning disabilities and loneliness given the fact that introversion (Kraut et al., 1998, 2002) and shyness (Cheek & Busch, 1981) is found to correlate with loneliness. This clearly needs to be studied further.

The current study is not without limitations. First, the data for secondary school students was collected early in 2012 while the data for University students was collected early in 2014, which leads to a two-year gap between the groups. More recent data for secondary school students was not available for this study and also, data for University students had not been collected before. However, this was not considered to affect the results.

Second, the total sample of University students came from one Icelandic University, Reykjavik University so it is unlikely that the sample represents all University students in Iceland. Also, the survey was sent to 3222 students at Reykjavik University, out of which 419 responded. A response rate of 13% is not that representative. However, the current study did not focus on how many people were using Facebook but the correlation between the use and loneliness. Therefore, the results give important clues of how this relationship for this age group is. In addition, the sample of secondary school students was quite big giving this study representative results for that particular age group.

Third, the measure of loneliness consisted of a five variables, some being very related to depression, which might have influenced the results. However, it might be very hard to measure loneliness without taking depression into count given that those two factors are very related. It is hard to imagine that a person can be very lonely without experiencing a hint of depression. Some studies even suggest that loneliness cannot be defined without including depression (Killeen, 1998). Depressed people might lack the motivation to participate in this sort of surveys. With a better response rate and more representative sample of participants for University students especially, the sample might include more depressed people. Given the relationship between depression and loneliness it is a possibility that the findings could

change from suggesting no relationship between Facebook use and loneliness to reporting a negative relationship. A bigger sample is suggested for further studies.

The assumptions for multiple regressions were not all met. The assumption for normality of the residual was not met and also a total of four outliers were existent from the total sample. However, regarding that the total sample consisted of 2508 participants, this was not considered an issue for the study. In addition, Facebook notifications, for example, alert many users on their phones, even when not using Facebook, which might lead users to open Facebook subsequently. Results of the current study revealed that most students, both secondary school students and University students, reported using Facebook for 2 hours or less daily. The results do not indicate whether this reported time includes the time students spend checking Facebook when they receive, for example, notifications or if the reported time includes only the time they spend only using Facebook. The students might be unaware of the actual time spent quickly checking Facebook. This speculation needs to be included in further studies. Also, the current study was a correlational study so it remains unclear if Facebook use causes loneliness or vice versa.

Though the current study gave some insight into the relationship between time spent on Facebook and loneliness, there are still many questions to be answered.

Recommendations for future research would be to investigate this relationship further, for example by using a bigger and more representative sample. It is also suggested to use a sample of high-school students to find out if spending time on Facebook helps with decreasing loneliness with that age group, like with those at the University. It is also important to find out why this is not relevant for those at secondary school.

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Appendix A

1. Ert þú strákur eða stelpa?

☐ Strákur ☐ Stelpa

9. Hversu mikið, ef nokkuð hafa eftirfarandi þættir áhrif á frammistöðu þína í námi?

(Merktu í EINN reit í HVERJUM lið)

	Alls ekkert	Mjög lítið	Frekar lítið	Nokkuð	Mikið	Mjög mikið
a) Lesblinda.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Lítil leshraði.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Aðrir lestrarörðugleikar.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Skrifblinda.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

23. Hversu auðvelt eða erfitt væri fyrir þig að fá eftirtalið hjá vinum þínum?

(Merktu í EINN reit í hverjum lið)

	Mjög erfitt	Frekar erfitt	Frekar auðvelt	Mjög auðvelt
a) Umhyggju og hlýju	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Samræður um persónuleg málefni	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Ráðleggingar varðandi námið	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Ráðleggingar varðandi önnur verk (viðfangsefni) þín	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Aðstoð við ýmis verk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

