Facebook Use Amongst Adolescents in Iceland: The Effects on Self-Esteem and Life Satisfaction

Katerina Inga Lionaraki

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Author: Katerina Inga Lionaraki
ID number: 0606913559
Supervisor: Þorlákur Karlsson

Department of Psychology
School of Business

Foreword

Submitted in partial fulfilment 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.

Abstract

Facebook, the most commonly used website in the world, is believed to effect it's users in both positive and negative psychological, social, and emotional ways. The aims of this study was to examine general Facebook use, self-esteem and life satisfaction measures between gender, age groups and schools, as well as to examine whether Facebook use would affect the participants self-esteem and life satisfaction levels. Participants of the study were around 400 randomly selected Icelandic adolescents aged 13 to 16 years. ANOVA and t-test analysis were conducted to examine the differences between groups and correlation and multiple regression was then used to find out to what extent predictor variables contributed to the prediction of self-esteem and life satisfaction. In depth interviews were conducted to help interpret the quantitative data, where subjects were four randomly selected students aged 14 to 16 years. The main results indicate that adolescents who spend more time on Facebook and receive negative reaction on their Facebook profile, are probable to experience declines in self-esteem and life satisfaction.

Keywords: Facebook, self-esteem, life satisfaction, Icelandic adolescents

Abstract - Icelandic

Facebook, algengasti netmiðill í heiminum, er talinn hafa bæði jákvæð og neikvæð áhrif á notendur sína hvort sem það séu sálfræðileg, félagsleg eða tilfinningaleg áhrif. Markmið þessarar rannsóknar voru að skoða almenna Facebook notkun, sjálfstraust og vellíðan á milli kynja, aldurs og skóla, sem og að greina frá því hvort að Facebook notkun gæti haft áhrif á sjálfstraust og vellíðan notenda. Þátttakendur voru valdir af handahófi, þar sem í kringum 400 íslenskir unglingar á aldrinum 13 til 16 ára, tóku þátt. ANOVA og t-prófs mælingar voru notaðir til að athuga mun á milli hópa og fylgni og fjölbreytuaðhvarfsgreining voru notuð til að athuga hversu mikið spábreytur spáðu fyrir um sjálfstraust og vellíðan. Djúpviðtöl voru notuð til aðstoðar við túlkun á megindlegum rannsóknargögnum. Fjórir þátttakendur voru valdir af handahófi og voru þeir á aldursbilinu 14 til16 ára. Aðalniðurstöður rannsóknarinnar benda til þess að unglingst sem eyða meiri tíma á Facebook og fá neikvæð viðbrögð á Facebook vegginn sinn, eru líklegri til þess að upplifa hnignun í sjálfstrausti og vellíðan.

Lykilhugtök: Facebook, sjálfstraust, vellíðan, íslenskir unglingar

Acknowledgements

Facebook Use Amongst Adolescents in Iceland: The Effects on Self-Esteem and Life

Satisfaction

The most commonly used web site today is Facebook (FB). Founded in the USA in the

year 2004, it has gained worldwide recognition as the most popular social networking site on

the internet, currently with over 1 billion monthly users (Makavy, 2013). On FB, users are

able to create their own profile where they present themselves to their FB friends and are able

to communicate with them either privately or publicly (Raacke & Bonds-Raacke, 2008;

Sheldon, 2008). Time spent on FB each day differs between users, but according to a recent

study, the average amount of time spent each day by a FB user is about 17 min (Wilson,

2014). Lenhart and Madden (2007) studied the major reasons why adolescents are using

social networking sites (SNS), suggesting that these sites give them the opportunity to be a

part of a group where users get instant feedback and affirmation through a website. As the

researcher phrased it: "Teens get to feel like they are a part of a group of like-minded friends,

and can visualize their network of relationship, displaying their popularity for others".

With constant technological expansion, adolescents are able to communicate with their

friends and family through the internet at home and through their mobile phones, with instant

accessibility (Lenhart, 2011). Because of these changes in day-to-day communication,

researchers wonder what effects they have on the user (Aboujaoude, 2010; Bazelon, 2013;

Huang & Leung, 2009; Junco & Cotton, 2012; Lenhart & Madden, 2007; Mehdizadeh, 2010;

Shapiro & Margolin, 2013). Steinfield, Ellison and Lampe (2008) suggested that FB use has

had enormous impact on the way individuals communicate, and other research proposed that

the effects could be a combination of psychological, emotional, and social factors

(Aboujaoude, 2010; Bazelon, 2013; Ellison, Steinfield, & Lampe, 2007; Huang & Leung,

2009; Junco & Cotton, 2012; Kirschner & Karpinski, 2010; Lenhart & Madden, 2007; Reich,

2010; Tokunaga, 2010). Because of these claims, it is important to examine the characteristics

of FB use further and the effects it has on individuals, especially to elucidate the general user on how their use might, or might not, affect them.

There is a lot of research that is similar to the study entailed in this thesis, where it is either suggested that there is positive effect on self-esteem and well-being, or negative. The studies focusing on the negative effects from FB use indicate that spending a lot of time on FB was a strong predictor for low levels of self-esteem and well-being (Denti et al., 2011; Kalpidou, Costin, & Morris, 2011; Valkenburg, Peter, & Schouten, 2006; Anderson, Fagan, Woodnutt, & Chamorro-Premuzic, 2012). Those who spent a lot of time on FB even perceived other people to be happier than they were themselves (Chou & Edge, 2012). Denti et al. (2011) conducted a research, asking Swedish FB users about their everyday FB use, their perceived self-esteem and well-being, through an online questionnaire. It was first reported that females spent more time on FB a day than males. Their results were in line with previously mentioned suggestions, where users who spent more time on FB and who frequently compared themselves to other users had lower levels of self-esteem. However, when controlling for demographic variables, they found that FB was not related to self-esteem. Valkenburg et al. (2006) suggested that the frequency and tone of reaction on SNS played a vital role in the effects on Dutch adolescents, where positive feedback on one's SNS profile was correlated with their self-esteem and well-being. In addition, users with more frequent reaction on SNS had higher levels of both self-esteem and well-being. However, these studies differ in sample size and analysis methods. Denti et al. (2011) had around one thousand participants and conducted a regression analysis to find out to what extent FB use would predict self-esteem and life satisfaction, whereas, Valkenburg et al. (2006) had only two hundred participants and used correlation analysis to detect the association between SNS use and psychological factors.

Research focusing on the positive effects of FB use, have suggested that general FB use leads to higher levels of self-esteem and life satisfaction (Ellison et al., 2007; Gonzales & Hancock, 2011; Steinfield et al, 2008). Gonzales and Hancock (2011) conducted experimental research, where participants were divided into three different groups: group A sat in front of a computer that was turned off, B in front of a computer that was turned on as well as having a mirror in front of them, and C in front of a computer where participants were instructed to go on their FB profile. Before and after participants used the computers, they answered a questionnaire with self-esteem and self-presentation questions. The results suggested that participants had higher reported self-esteem after they had been on their FB profile, while there was no difference in self-esteem levels for the other groups who did not go on their FB profile (Gonzales & Hancock, 2011). An important factor to note regarding their research is that participants who went on their FB profile only stayed there for three minutes, which is shorter than the average general time spent on FB (Wilson, 2014). Another study examining positive effects on self-esteem and life satisfaction from FB use, reported that FB use was a strong predictor for bridging social capital, and that bridging social capital was a strong predictor for self-esteem and well-being. Their results suggested that FB users, especially those with low self-esteem and life satisfaction levels, benefited from FB use in terms of more social and emotional support (Steinfield et al., 2008). Therefore, the prediction in their study was not as direct, as it was in Gonzales and Hancock's research. Furthermore, Ellison et al. (2007) suggested that individuals with communicational difficulties, with reported low self-esteem and well-being, could use FB as a tool to expand their current relationships as well as form new ones through nonverbal communication. In summary, it is clear that FB has an effect on individuals' self-esteem and well-being. However, inconsistent findings are most likely due to different samples and major study variables.

This study is meant to generate findings that would bear relevance to and expand current knowledge on the matter. Different to previous research, this study focuses on the FB use of Icelandic adolescents, which has never been done before. The focused age groups, 13-16 year olds, were chosen because of the unrestful times during adolescents (Institute of Medicine, 2010). According to Brown (2008) adolescents main concerns were "to stand out – develop an identity and pursue autonomy…and to fit in to find comfortable affiliations and gain acceptance from peers". Therefore, these psychological factors were considered to be at risk with adolescents FB users.

The first aim of the study conducted in this thesis, was to examine general FB use amongst adolescents in Iceland. The second aim was to examine self-esteem and life satisfaction scores between gender, age groups, and schools. The third aim was to examine whether adolescents FB use predics their perceived self-esteem and life satisfaction.

Method

Participants

Twenty randomly selected schools were asked to participate in the study and nine accepted. The schools that agreed on participation are widely spread around Iceland; schools A and B were located in the west part of Iceland, school C in the south-east, school D in the north, schools E and F in the capital region, schools G and H in the east, and school I in the south-west. Participants were 415 students, 208 males and 207 females, enrolled in 8th (13 and 14 years of age), 9th (14 and 15 years of age) and 10th (15 and 16 years of age) grade. To be eligible for participation, students had to be aged 13 to 16 years with an active FB account. Four randomly selected students who participated in the study also agreed to an interview with the researcher. A passive parental consent form was used based on the Icelandic guidelines for the protection of research subjects.

Design

A design of mixed methods was used for this study, a sequential explanatory strategy, where qualitative data was used to enhance and assist in explaining and interpreting the findings of the quantitative data (Creswell & Clark, 2007). A cross sectional study was conducted, where an internet survey design was used to gather quantitative data and in-depth interviews were used to gather the qualitative data. Three independent variables (average min on FB a day, tone of reaction received on FB, and gender) and two dependent variables (self-esteem and life satisfaction) were used.

Measures

Frequency of Facebook Activity. The frequency of FB use was assessed with a set of survey questions designed by Junco (2012). They were used to identify the frequency of FB use and activities engaged. Two different ways were used to measure the frequency of use: 1) Average time spent on FB per day and 2) Number of times FB is checked per day. FB activity was measured with a list of 14 FB activities that Junco (2012) found to be generally common amongst users. Respondents were asked the following question: "How frequently do you perform the following activities when you are on Facebook?" Activities mentioned were e.g.: playing games (Farmville, Candy Crush, Mafia Wars, etc.), posting status updates, sharing links and sending private messages. Responses were: very frequently, somewhat frequently, sometimes, rarely, and never (see Appendix A).

Facebook Reactions and Relationships Established. FB reactions and relationships established were assessed with three different questions designed by Valkenburg et al. (2006). The tone of the reactions to the profiles was measured with the following two questions: "The reactions that I receive on my profile are…" and "The reactions that I receive on what I tell about my friends are…" Response categories ranged from 1 (always negative) to 5 (always positive). Respondents were then asked how often they had established (a) a friendship and

(b) a romantic relationship through Facebook. Response options were: never, once, and more than once (see Appendix A).

Psychological Well-Being Measures. Self-esteem was assessed with the Rosenberg Self-esteem Scale (Rosenberg, 1965), composed of 10 items on a 5-point Likert scale that included five positive and five negative statements. In the original test the scale was 4-point, however, numerous research have modified it into a 5-point scale (Steinfield et al., 2008; Valkenbourgh et al., 2006). The scale scores ranged from 10 (very low self-esteem) to 50 (very high self-esteem). An item from this scale is: "On the whole, I am satisfied with myself". Response categories were: strongly agree, agree, neither agree nor disagree, disagree, and strongly disagree (see Appendix A).

Life satisfaction was assessed with the Satisfaction with life Scale (Diener, Emmons, Larsen, & Griffin, 1985), measuring an individual's perception regarding the quality of his or her life in general. The scale consists of five statements to which participants could agree or disagree with. An example of a statement is: "I am satisfied with my life". The responses were on a 5-point Likert scale, where the scores of the total scale ranged from 5 (very low life satisfaction) to 25 (very high life satisfaction; see Appendix A).

The Interviews. The in depth face-to-face interviews were created with the questionnaire in mind to assist in interpreting the findings of the quantitative data. Participants were asked about their FB activity, what they did most on the site and how often they went onto FB and for how long each day. They were then asked about frequency of relationships established and the nature of those relationships. Questions about self-esteem and life satisfaction were also asked.

Demographic Information. The participants were asked questions regarding age, gender, and school. First the demographic information of the participants was assessed by composing three questions regarding age, gender and which school each one was enrolled in.

Procedure

The first step was to report the research to The Data Protection Authority to conduct the research and The Reykjavik University BSc Psychology Course Committee.

After the schools had agreed to participate, they received the introductory letter (in this case, based on passive consent) which they were to forward to the parents of participants three days before the scheduled date (see Appendix B). With the assistance of each school that participated, the students completed the online questionnaire under supervision of their teachers in the period of February through April in 2014. The morning before the scheduled date the principals received a link to the online questionnaire, as well as a link to a sample questionnaire. All eligible students who attended school on the scheduled day completed the questionnaire in a computer classroom at their school. All schools arranged for more than one day for their students to answer the questionnaire, due to a lack of computers. The participants were informed of their anonymity and their right to withdraw their participation at any time. They were also instructed not to leave any personal information that could identify them (*e.g.* name or social security number). Participants were encouraged to complete the entire questionnaire and to ask the supervisor for help or advise if they had any questions.

Before the questionnaires were administered, the researcher contacted two of the largest participating schools (both located in the Reykjavík area), and requested interviews with one female and one male from each of the schools, four students in total. When subjects had approved their participation interviews were scheduled and conducted at the school of participating student. The open interviews were conducted in November of 2013 and lasted for 40 to 60 min each. Upon arrival at the schools, the researcher was assigned a classroom where the separate interviews took place. The material used in the interview process was a telephone owned by the researcher that had an audio recording device that recorded all interviews. Before the interview started participants were informed that they would be

assigned a pseudonym to protect their anonymity and that the names of their schools would not be mentioned. If they would at any time during the interview mention something that could identify them (e.g. a name of a friend, family member or sports club), it would be deleted.

Data analysis

Quantitative. The online survey program *SurveyMonkey* was used to gather data. Descriptive statistics were calculated to provide information about participant's characteristics. To analyze the difference between groups and their use of FB, ANOVA and t-tests were conducted, where eta square was calculate to determine the effect size between groups and post hoc test's used to compare the means of all combinations of pairs within the groups. Correlation analysis was then used to see to what extent the variables were associated and a multiple regression indicated the contribution FB had to the prediction of self-esteem and life satisfaction. To examine whether females or males contributed greater to the prediction, a multiple regression was repeated where females and males were analyzed with FB use, and to what extent they predict self-esteem and life satisfaction.

Qualitative. A coding method was used to analyze the data from the interviews. According to Bogdan and Biklen's (1998) methods, to be able to code the data, memos from the interviews, questions asked, and research questions were used. Basic concepts were identified from the coded data, furthermore, these concepts where drawn together and categorized into themes.

Results

Sample Characteristics

The mean age of participants was 14 years, as can be seen in Figure 1, where the smallest age group being 16 years and the largest 14 years. Number of students differs somewhat between schools, however, it is in line with the population in the town of each school.
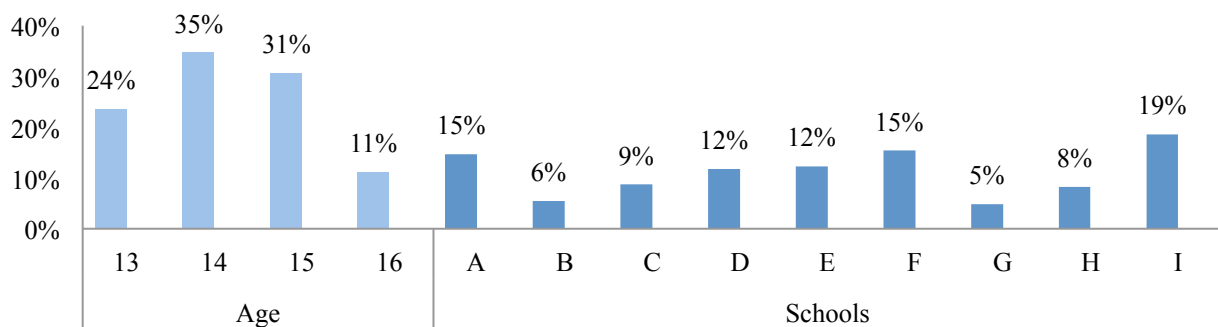

Figure 1. Proportion of the sample in age groups and schools.

Facebook Use

In Figure 2, the average minutes a day can be seen between gender groups, age groups, and schools. Females spent an average of 117 min a day on FB and males an average of 81 min. An independent-sample t-test indicated that there is a significant difference between males and females, $t(381) = -3.95$, $p < .001$, whereas the effects size between gender was relatively small, $\eta^2 = .04$.

Those aged 15 spent the most time on FB a day and the aged 13 the least amount, compared to the other age groups (Figure 2). According to ANOVA there was a significance difference between age groups on FB use, $F(3, 379) = 4.4$, $p = .005$, whereas, the effect size between age groups was relatively small ($\eta^2 = .03$). A Games-Howell post hoc test indicated that 13 year old students average min a day on FB differed significantly from ages 14 ($p = .007$), 15 ($p < .001$), and 16 ($p = .05$).

Figure 2 demonstrates that FB usage differed between schools, where C, E, G, and I all spent more than 100 average min a day on FB. The other five schools ranged from an average of 75 to 95 min a day. There was not a statistical significant difference between the schools, $F(8, 374) = 1.84$, $p = .069$, although it was very close.
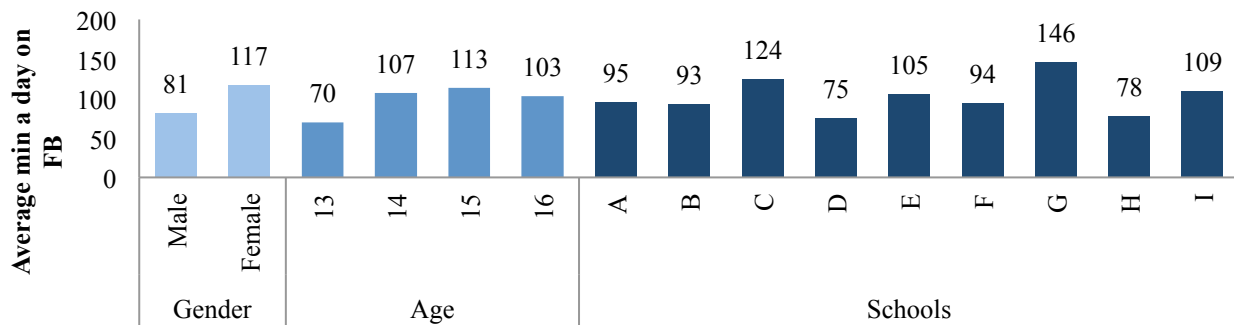

Figure 2. Average minutes a day spent on Facebook between gender groups, age groups, and schools.

Facebook Activities

The adolescents were asked what they did most frequently on FB. In Figure 3 we can see the activities and usage per day for females and males. Sending instant messages (IM) through FB was the most common activity with a mean of 4.2 per day for females and 3.6 for males. Sending private messages (PM) was a frequent activity, where females had the mean of 3.7 and males 3.1.
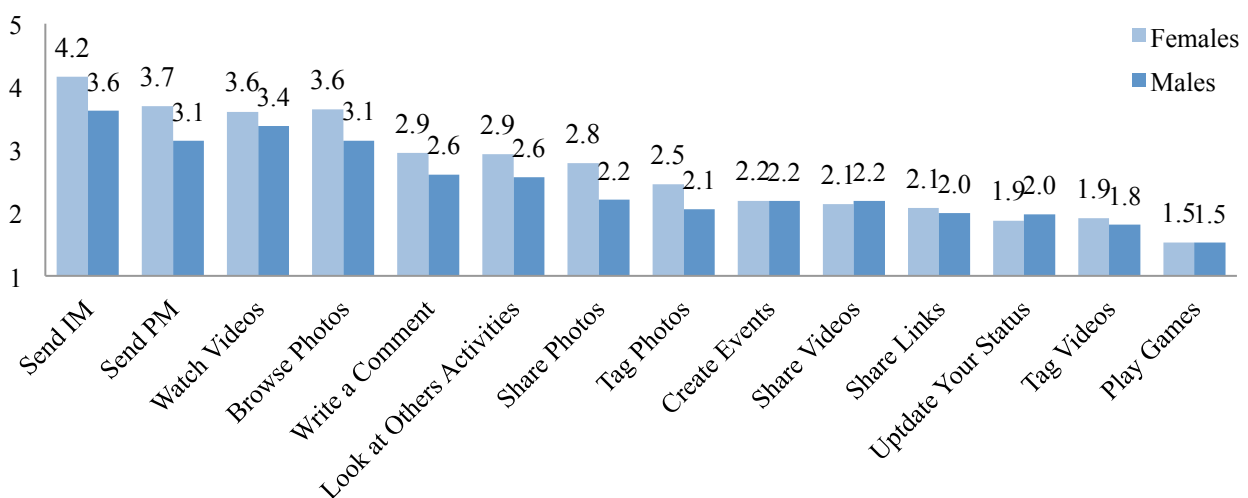

Figure 3. Average frequency a day of Facebook activities between gender, ranging from 1 (never) to 5 (very often).

Browsing photos and watching videos on FB were also done frequently, where females again are more active than males. However, playing games, tagging videos, updating statuses, and sharing links were reported to be less common than the other activities for both gender.

Self-Esteem and Life Satisfaction Scores between Groups

In Figure 4, the difference in life satisfaction scores (scale of 5-25) between gender can be seen, whereas difference in self-esteem scores (scale of 10-50) between gender groups can be seen in Figure 5. Females scored lower on both life satisfaction and self-esteem scales, than did males. An independent-sample t-test was conducted to determine whether the difference was significant on each scale. There was a significant difference in life satisfaction scores between males and females, $t(377) = 5.15$, $p = .001$. The eta squared statistic (.07) indicated a moderate effect size. There was also a significant difference in self-esteem scores between males and females, $t(360) = 5.98$, $p = .039$, where the eta squared statistic (.09) indicated a moderately large effect size.

Figure 4. Mean life satisfaction scores between gender.

Figure 5. Mean self-esteem scores between gender.

In Figure 6 and 7, we can see that 16 year old students had the lowest reported life satisfaction and self-esteem. Ages 13, 14, and 15 had the same mean life satisfaction scores, and are almost the same for mean self-esteem scores. There was a statistical significance difference in life satisfaction scores for ages, $F(3, 375) = 2.8$, $p = .04$, however, not in self-esteem scores, $F(3, 358) = 1.8$, $p = .14$. A Games-Howell post hoc test indicated no

significant difference in life satisfaction or self-esteem scores between age groups, although, there was a near significant difference in life satisfaction scores between ages 13 and 16 ($p = .07$).
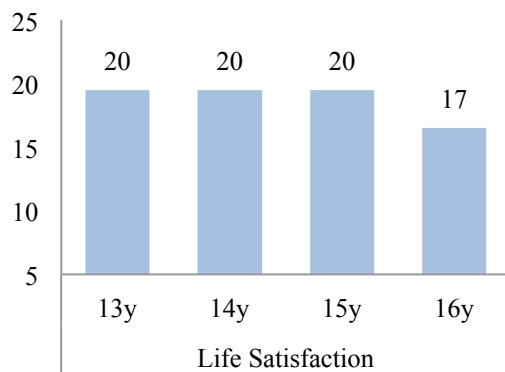

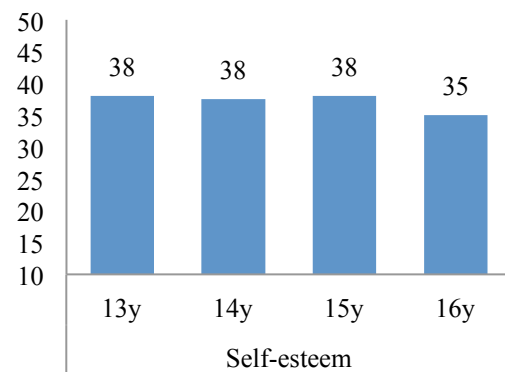*Figure 6.* Mean life satisfaction scores between age groups.

Figure 7. Mean self-esteem scores between age groups.

In Figure 8 and Figure 9, the life satisfaction and self-esteem scores between schools can be seen. School B had the lowest mean score in both life satisfaction and self-esteem, whereas school A had the highest mean score in life satisfaction and shares the highest self-esteem points with school E. Schools C, D, F, G, H, and I all have medium average points on both scales.
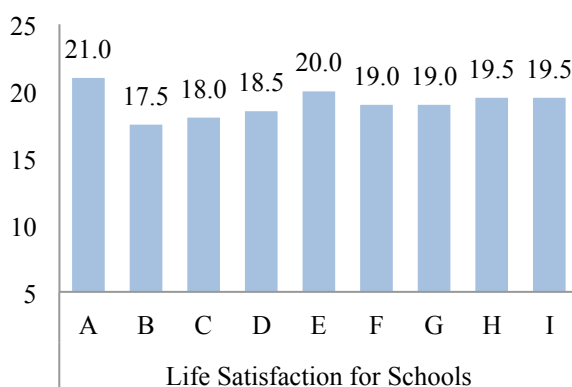

Figure 8. Mean life satisfaction scores between schools.
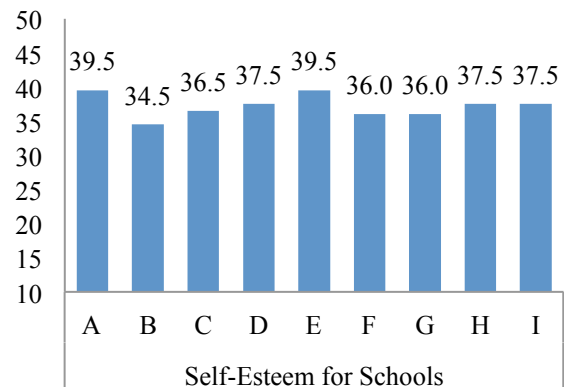

Figure 9. Mean self-esteem scores between schools.

There was a statistically significant difference in the life satisfaction scores for the schools, $F(8, 370) = 9.98$, $p = .049$, $\eta^2 = .04$, but not in the self-esteem scores, $F(8, 353) =$

1.28, p = .252, η^2 = .03. A post hoc test indicated that life satisfaction scores in school A

differed significantly from the life satisfaction scores in school B (p = .045), however, there

were no other schools that differed significantly.

Regression Analysis Testing Whether FB use Predicts Self-Esteem or Life Satisfaction

Scores

        Table 1 displays descriptive and correlation statistics for self-esteem, life satisfaction,

and measured FB usage. Participants reported high levels of average minutes a day and high

levels of tone of reactions received on FB (ranging from 2 to 10), indicating higher levels of

positive reaction than negative reaction being received on FB.

        Also in Table 1, it can be seen that lower levels of self-esteem were associated with

significantly more time spent on FB, whereas higher levels of life satisfaction were also

significantly associated with higher levels of average minutes a day on FB. Furthermore,

increased levels of positive reactions on FB were significantly associated with higher levels of

both self-esteem and life satisfaction.

Table 1

Mean and Standard Deviation for FB use and Correlation with Self-Esteem and Life Satisfaction

Variables	M	SD	1	2	3	4
1. Self-Esteem	37.46	8.14	-	,695*	-.253*	.288*
2. Life Satisfaction	19.26	4.32		-	-.177*	.267*
3. Average minutes a day on FB	99.62	90.62			-	-.014
4. Tone of reaction on FB	8.53	8.53				-

Note. The tone of reaction measures ranged from 2-10
* p < .001.

        Multiple regression analysis was employed to determine to what extent average

minutes on FB a day, tone of reaction on FB, and gender contributed to prediction of self-

esteem and life satisfaction. It is worth noting, that tolerance was greater than .900 in all

cases, indicating that multicollinearity was not an issue.

The results of the multiple regression analysis are shown in Table 2. Time on FB, tone

of reaction, and gender explained 23.6% of the variance in self-esteem ($R^2 = .236$), which is

significant, $F(3, 332) = 34.133$, $p < .001$. Average min a day, tone of reaction and gender,

accounted for 18.6% of the variance in life satisfaction ($R^2 = .186$), showing statistical

significance, $F(3, 348) = 26.446$, $p < .001$. Tone of reaction on FB and gender were the

strongest predictors for both self-esteem and life satisfaction.

Table 2

Multiple Regression Analysis for Self-Esteem and Life Satisfaction

	B	β	R^2	F
Self-esteem			.236***	34.13***
Average minutes a day on FB	-.02***	-.19		
Tone of reaction on FB	1.61***	.33		
Gender	-5.1***	-.31		
Life Satisfaction			.186***	26.45***
Average minutes a day on FB	-.01*	-.12		
Tone of reaction on FB	.80***	.32		
Gender	-2.59***	-.30		

*$p < .05$. **$p < .01$. ***$p < .001$.

After the gender variable had been divided into two separate variables (male and

female), the predictor variables explained 24.4% of the variance in males self-esteem, $F(2,$

$158) = 25.652$, $p < .001$, whereas tone of reaction was a significant strong predictor ($β = .50$, p

$< .001$). For females the predictors explained 12.5% of the variance self-esteem, $F(2, 172) =$

12.273, $p < .001$, where average min a day on FB and tone of reaction were both significant

predictors ($β = .27$, $p < .001$; $β = .18$, $p < .01$ respectively). The predictors explained 11.3% in

the variance in males life satisfaction, $F(2, 172) = 10.923$, $p < .001$, where only tone of

reaction was a significant predictor ($β = .32$, $p < .001$). The predictors explained 15.6% in the

variance in females life satisfaction, $F(2, 174) = 16.098$, $p < .001$, where both average min a day on FB and tone of reaction were significant predictors ($\beta = .19$, $p < .01$; $\beta = .32$, $p < .001$ respectively).

Interviews

   Time Spent on FB. When interviewees were asked about the amount of time spent on FB every day, male A said that he uses FB "every day, a lot in school, in class and such. And just after school and in the evenings as well (...)". Whereas, male B used FB for only a few minutes a couple of times a day. In addition, male participants stated that their female friends spent a lot more time on FB, compared to their male friends. Both females said that going on FB is a part of their daily routine, where they spend about 2 to 4 hours a day on FB.

   FB Activity. The interviewees agreed on that the most frequent activity they engaged in on FB was to talk to their friends, either using instant messages or personal messages, whereas, the females also commonly browsed their FB and looked at what other users were doing. Both females said that they found it much more comfortable to communicate with friends through FB. Female A found it in general very difficult to have face-to-face conversations with people, but on the internet she could say everything she wanted to say. Female B said: "I find it a lot easier to say the things I want to say through Facebook because there I can write and read over the text and fix what I want to". All stated that with FB, their friendships have changed, they don't meet their friends as often because they can communicate with them on FB.

   Self-Esteem, Life Satisfaction and FB. All participants said that they had high self-esteem and were overall satisfied with their lives. When asked to point out their main qualities, the males had no difficulty in naming theirs compared to the females, who had difficulties finding positive things to say about themselves.

When Male A was asked about the effects FB use could have on his self-esteem or life satisfaction he stated that he did not think other people's reactions would affect him. However, he said that it was important to look good on FB and that people have to be careful what they say and do. Male B said that people were very judgmental on FB and how you present yourself matters because other users evaluate themselves from others opinion peoples oppinion. Finally he said that FB could easily affect his self-esteem and the way he feels, but the effects could be either negative or positive, depending on the tone of reaction he receives from his friends.

The females agreed with the males, that it matters a lot how you present yourself on FB. They both said that FB use could definitely affect ones self-esteem and life satisfaction.

Discussion

The first aim of the study was to examine general FB use amongst adolescents in Iceland. When average minutes a day on FB were analyzed, female participants reported spending 36 more average min a day on FB than males. Supporting these findings, the interviews indicated the same results, where females spent from 2 to 4 hours at average on FB every day. Female A said: "Checking Facebook is the first thing I do every morning, and it's also the last thing I do before I go to sleep". These results are consistent with a recent Swedish study stating that females spend more time on FB than males (Denti et al., 2011). Comparing time on FB between age groups indicate that those aged 15 spend the most time on FB and those aged 13 spent the least time on FB. The differences between schools were very close to being significant, therefore, it was interesting to see that the three schools that spent the most average time on FB each day (C, G and I) are all located in towns where the population is less than 2000, whereas the school with the least average minutes on FB is located in the second most populous area in Iceland, Akureyri. Indicating a difference in use based on population size in each town (Hagstofa Íslands, 2014).

Participants' most frequent FB activity was sending messages, watching videos and browsing photos. The results from the interviews suggest the same, where talking to their friends on FB was the most common thing they did. The females even found it more comfortable to communicate with their friends through FB than face-to-face. Previous research has suggested that individuals with low self-esteem and life satisfaction feel more comfortable communicating with their friends and expressing themselves through FB (Ellison et al., 2007).

The second aim was to examine self-esteem and life satisfaction scores between gender, age groups, and schools. The female participants had lower self-esteem and life satisfaction scores, compared to the male participants. The interview participants all agreed on having high self-esteem and being satisfied with their lives. However, when they were asked to point out positive facts about themselves, the males easily named five facts each, whereas the females had difficulties naming theirs. Because of this fact it was deducted that the females had lower self-esteem than they were ready to admit. Numerous studies support these findings (Kling, Hyde, Showers, & Buswell, 1999; Murphy, 2014; Pliner, Chaiken, & Flett, 1990). Those aged 16 had the lowest life satisfaction scores compared to the other age groups, whereas, self-esteem scores did not differ significantly between groups. A recent study does not agree with these findings, where those aged 16 had the highest levels of self-esteem and life satisfaction, compared to those aged 12, 13, 14, and 15 (Steiger, Allemand, Robins, & Fend, 2014). When looking at different self-esteem and life satisfaction scores between schools, the largest difference in scores was between school A and B, whereas, the difference was significant in life satisfaction scores. These results were very interesting to notice, both of these schools are in small towns which are located next to each other, to be more accurate, it only takes ten minutes to travel from school A to school B. These results are very interesting and evoke questions concerning the difference between these small towns. Suggesting the

main reason being that school B is in a relativevely smaller town than school A and, therefore, has a smaller population and is more isolated (Hagstofa Íslands, 2014).

The third aim was to examine whether adolescents FB use effects their perceived self-esteem and life satisfaction. Results revealed that tone of reaction and average min a day on FB is significantly correlated with self-esteem and life satisfaction levels. This suggests that more time spent on FB is associated with lower levels of self-esteem and life satisfaction and negative reaction on FB would cause decreased levels of self-esteem and life satisfaction. Nevertheless, positive reaction on FB could also cause higher levels of self-esteem and life satisfaction. These results support previous studies (Anderson et al., 2012; Kalpidou et al., 2011; Valkenbourg et al., 2006).

To dig deeper in the association between these variables, the reseacher had to find out to what extend tone of reaction, average min a day on FB and gender contributed to the prediction of self-esteem and life satisfaction. These variables accounted for 23.6% of the variance in self-esteem and 18.6% in life satisfaction, whereas, where tone of reaction was the strongest predictor in both self-esteem and life satisfaction. The difference between gender revealed that tone of reaction and average min on FB a day predicted 24.4% of the variance in self-esteem and 11.3% in life satisfaction levels for males, whereas, tone of reaction was the strongest predictor. For females the tone of reaction and average min a day on FB predicted 12.5% of the variance in self-esteem and 15.6% in life satisfaction levels for females, whereas, both tone of reaction and average min a day on FB were strong predictors for females self-esteem and life satisfaction. In conclusion, a change in tone of reaction had the greatest relative effect on males' self-esteem and life satisfaction. However, change in average min a day on FB had the greatest relative effect on females' self-esteem, and change in tone of reaction had the greatest relative effect on females' life satisfaction.

All interviewees agreed with these findings, however, male A said that it is important to look good on FB but other people's reaction would not affect him. Male B stated that if he would not get a lot of reaction on his profile picture "I would not question the picture itself, but rather question myself! I would really ask myself if I was that ugly", he then said that FB use definitely affected his self-esteem and his life satisfaction, depending on the reaction he receives, whether it is positive or negative. The females agreed, stating that FB use could definitely affect their self-esteem and life satisfaction, and that it is very important to look good on FB. Female B then said that "females are classified by their beauty, and their beauty is classified from the number of *likes* they receive on their profile pictures. I feel like FB is such an advertisement, like you are trying to advertise yourself". Male B talked about the affects FB has had on his life satisfaction, changing the way he communicates with his friends and how he feels:

> When I was younger, it was much more fun to just be... You would rather go out with your friends! You went to his house to ask "hey do you want to go out on a trampoline?", or something like "do you want to play football?" so much fun! Then we were always outside, but now you just send a message through FB just like "want to see a movie?" I think that although we are older, and then naturally you get lazier, I wouldn't be as excited to go on a trampoline today, but I think that this is also because of the computers, that they have increased peoples laziness.

The combined results from the quantitative and qualitative data, indicate that females and males who spend more time on FB and receive negative reaction on their FB profile, are probable to experience declines in self-esteem and life satisfaction. The current findings are consistent with previous research (Denti et al., 2011; Forest & Wood, 2012; Kalpidou et al., 2011; Valkenburg et al., 2006; Valkenburg & Peter, 2008), however, they are not consistent

with findings suggesting a positive affect on FB users self-esteem and life satisfaction

(Ellison et al., 2007; Gonzales and Hancock, 2011; and Steinfield et al., 2008).

The strengths of this study were a relatively large sample size, where participants were

from 8 different towns located all around Iceland indicating an adequate distribution. Also,

interviews were used to enhance and help explain the interpretation of the findings, leading to

stronger results (Creswell & Clark, 2007). The limitations of the study were that participants

had to answer an online questionnaire, whereas previous research has implied that pencil and

paper questionnaires were more reliable than computerized questionnaires used in schools

(Yetter & Capaccioli, 2010). Due to time limitation and a cross sectional sample, a

computerized questionnaire had to be used.

For future research, a larger sample size is needed to be able to generalize the results

for adolescents all over Iceland. A larger sample size results in far more accurate description

of FB use. To get the most accurate analysis of FB use, coding should be used to analyze FB

profile of participants, this method also prevents biased answers from users. Furthermore, it

would be interesting to examine the difference between self-report questionnaires and FB

profile coding, to see whether there is a difference in the way a user percieves his own profile

and how a coder percieves it.

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Appendix A

The Questionnaire

Kæri þátttakandi!
Ég vil byrja á því að þakka þér fyrir þátttökuna á þessari könnun. Þátttaka þín skiptir máli.

Mikilvægt er að þú vitir að ekki er hægt að rekja svörin þín og því er allt sem þú skrái í þessari könnun trúnaðarmál. Annars hvet ég þig til að spyrja kennara þinn ef þú ert með einhverjar spurningar varðandi könnunina.

Til að könnunin gagnist sem mest er mikilvægt að vanda sig þegar svarað er spurningum. Þá er gott að hugsa vel áður en maður hoppar frá spurningu til annarar spurningu og fara yfir það sem maður hefur merkt við eða sagt. Þú mátt hinsvegar hætta að svara spurningunum hvenær sem er á meðan könnun stendur yfir.

Ég vona að þér muni ganga vel!
Takk fyrir að taka þátt.

1. Aldur?

2. Kyn?

3. Í hvaða skóla ert þú ?

Facebook notkun

4. Að Meðaltali, hversu miklum tíma eyðir þú á Facebook á dag?
(Til dæmis, ef þú eyðir 1 klukkutíma og 30 mínútum að meðaltali á dag, ættir þú að skrifa,,1" í efri reitinn og ,,30" í neðri reitinn)

5. Að meðaltali, hversu oft á dag ferðu á Facebook?

   a. Mjög oft á dag

   b. Nokkuð oft á dag

   c. Nokkrum sinnum á dag

   d. 1-3 sinnum á dag

   e. Sjaldnar en einu sinni á dag

   f. Aldrei

6. Hversu oft gerir þú eftirfarandi athafnir þegar þú ert á Facebook?

	Mjög oft	Oft	Stundum	Sjaldan	Aldrei
6.1 Spilar leiki	❑	❑	❑	❑	❑
6.2 Uppfærir stöðu þín	❑	❑	❑	❑	❑
6.3 Deilir hlekkjum	❑	❑	❑	❑	❑
6.4 Sendir einkaskilaboð	❑	❑	❑	❑	❑
6.5 Skrifar athugasemd	❑	❑	❑	❑	❑
6.6 Spjallar á Facebook spjallinu	❑	❑	❑	❑	❑
6.7 Skoðar hvað aðrir gera á Facebook	❑	❑	❑	❑	❑
6.8 Býrð til og skoðar viðburði	❑	❑	❑	❑	❑
6.9 Bætir við myndum	❑	❑	❑	❑	❑
6.10 Merkir myndir	❑	❑	❑	❑	❑
6.11 Soðar myndir	❑	❑	❑	❑	❑
6.12 Deilir myndböndum	❑	❑	❑	❑	❑
6.13 Merkir myndbönd	❑	❑	❑	❑	❑
6.14 Skoðar myndbönd	❑	❑	❑	❑	❑

7. Hversu oft færð þú viðbrögð á Facebook síðu þína? (athugasemdir á t.d. myndir, stöðu uppfærslur, því sem þú deilir og setur inn á síðuna)

   a. Mjög oft

   b. Oft

    c. Stundum

    d. Sjaldan

    e. Aldrei

8. Tónninn á viðbrögðum sem þú færð á:

	Alltaf neikvæð	Stundum neikvæð	Hvorki neikvæð né jákvæð	Stundum jákvæð	Alltaf jákvæð
8.1 Prófílinn þinn eru:	❏	❏	❏	❏	❏
8.2 á það sem þú deilir eða skrifar um á vegg hjá öðrum en þér:	❏	❏	❏	❏	❏

9. Hversu oft hefur þú:

	Aldrei	Einu sinni	Einu sinni eða oftar
9.1 Myndað ný vinasambönd í gegnum Facebook	❏	❏	❏
9.2 Myndað rómantísk sambönd í gegnum Facebook	❏	❏	❏

Spurningar um sjálfstraust

10. Mér finnst ég vera að minnsta kosti jafn mikils virði og aðrir.

    a. Mjög sammála

    b. Sammála

    c. Hvorki sammála né ósammála

    d. Ósammála

    e. Mjög ósammala

11. Ég hef marga góða eiginleika

    a. Mjög sammála

    b. Sammála

    c. Hvorki sammála né ósammála

    d. Ósammála

    e. Mjög ósammala

12. Mér líður oft eins og ég sé misheppnuð/misheppnaður

    a. Mjög sammála

    b. Sammála

    c. Hvorki sammála né ósammála

    d. Ósammála

    e. Mjög ósammala

13. Ég get gert margt jafn vel og aðrir

    a. Mjög sammála

    b. Sammála

    c. Hvorki sammála né ósammála

    d. Ósammála

    e. Mjög ósammala

14. Mér finnst ég ekki geta verið stolt(ur) af mörgu

    a. Mjög sammála

    b. Sammála

    c. Hvorki sammála né ósammála

    d. Ósammála

    e. Mjög ósammala

15. Ég er með jákvætt viðhorf gagnvart sjálfri/sjálfum mér

    a. Mjög sammála

   b. Sammála

   c. Hvorki sammála né ósammála

   d. Ósammála

   e. Mjög ósammala

16. Yfir höfuð, er ég ánægð(ur) með sjálfa(n) mig

   a. Mjög sammála

   b. Sammála

   c. Hvorki sammála né ósammála

   d. Ósammála

   e. Mjög ósammala

17. Ég vildi óska þess að ég bæri meiri virðingu fyrir sjálfri/sjálfum mér

   a. Mjög sammála

   b. Sammála

   c. Hvorki sammála né ósammála

   d. Ósammála

   e. Mjög ósammala

18. Stundum finnst mér ég vera gagnlaus

   a. Mjög sammála

   b. Sammála

   c. Hvorki sammála né ósammála

   d. Ósammála

   e. Mjög ósammala

19. Stundum finnst mér ég ekki nógu góð(ur)

   a. Mjög sammála

   b. Sammála

  c. Hvorki sammála né ósammála

  d. Ósammála

  e. Mjög ósammala

Spurningar um vellíðan

20. Á flesta vegu er líf mitt nálægt því að vera eins og ég vil hafa það

  a. Mjög sammála

  b. Sammála

  c. Hvorki sammála né ósammála

  d. Ósammála

  e. Mjög ósammala

21. Lífsgæðin í mínu lífi eru frábært

  a. Mjög sammála

  b. Sammála

  c. Hvorki sammála né ósammála

  d. Ósammála

  e. Mjög ósammala

22. Ég er ánægð með líf mitt.

  a. Mjög sammála

  b. Sammála

  c. Hvorki sammála né ósammála

  d. Ósammála

  e. Mjög ósammala

23. Hingað til hef ég fengið mikilvægustu hlutina sem ég vil í lífinu

  a. Mjög sammála

  b. Sammála

    c. Hvorki sammála né ósammála

    d. Ósammála

    e. Mjög ósammala

24. Ef ég gæti byrjað lífið mitt upp á nýtt, myndi ég breyta mjög litlu.

    a. Mjög sammála

    b. Sammála

    c. Hvorki sammála né ósammála

    d. Ósammála

    e. Mjög ósammala

Appendix B

Passive Consent Letter

„Hefur Facebook notkun áhrif á sjálstraust unglinga og vellíðan þeirra? "

Til þeirra sem málið varðar.
Kæri foreldri/forráðamaður,

Ég heiti Katerina Inga og ég er að ljúka BSc námi í sálfræði frá Háskólanum í Reykjavík í júní n.k. Í lokaritgerð minni er ég að skoða áhrifin sem Facebook notkun hefur á sjálfstraust og vellíðan.

Ég hef sent skólastjórnendum erindi vegna þessarar rannsóknar en um er að ræða könnun í 8., 9. og 10. bekk barn þitt er því í þessu úrtaki og af þeim sökum sendi ég þetta bréf.

Rannsókn þessi hefur verið tilkynnt til Persónuverndar og þar sem þátttakendur eru ekki orðnir sjálfráða ber mér sú skylda að láta ykkur vita um efni hennar.

Vinsamlegast látið skólastjórnanda vita ef að þið viljið ekki að barnið ykkar taki þátt í þessari rannsókn.

Með von um gott samstarf og jákvæðar undirtektir,

Katerina Inga Antonsdóttir
 3. árs nemi í Sálfræði BSc
Háskólinn í Reykjavík

Fyrir frekari upplýsingar er hægt að hafa sambandi við mig, Katerinu Ingu, í síma: 845-1845 eða netfangi: katerina10@ru.is

Leiðbeinandi: Dr. Þorlákur Karlsson, sérfræðingur í aðferðarfræði og dósent við Viðskiptadeild Háskólans í Reykjavík.