

Social Anxiety and Usage of Online Technological Communication Tools among Adolescents

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ABSTRACT

With the growing popularity of Internet communication among adolescents, the Internet, social media, instant messaging and cell phones have become important social tools in their life. This study examines teens' use of social interactive technologies and the role that social anxiety plays on how adolescents communicate with others (technology or face-to-face). A questionnaire was designed and distributed to selected sample in the cities of Afyonkarahisar, Manisa and Uşak in order to analyze the relationship between adolescents' social anxiety and their preference of communication tool. The data were gathered from 544 respondents among High School adolescents (ranged from 15-18; freshman, sophomore, junior and senior). Findings show that adolescents rarely use messenger sites and mail addresses. They generally send instant messages with their cell phones. They spend 1-2 hours for listening music and averagely 30 minutes for Facebook in a day. More than half of teens have hi-tech cell phones that enable to call, send message and access to Internet. The findings of the present study also reveal that females use text messaging more than males. However, males spend much more time than females to play games. In addition, females feel themselves more uncomfortable than males for face-to-face talking with others. And, on the contrary to males, females also prefer to some extent, to communicate with other on internet instead of face-to-face talking. Similarly, females prefer more than males to make new on internet.

KEYWORDS

Social Anxiety, Communication Tools, Technology, Adolescents

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Introduction

The use of socially interactive technologies, such as social media, text messaging or instant messaging rises among young people (Pierce, 2009). Among adolescents, the Internet has become indispensable for instrumental purposes such as school work information gathering as well as for communication purposes. The communication applications of Internet, such as e-mail, instant messaging (IM), blogs and chat rooms have entrenched themselves in the lives of adolescents and Internet has become an important social context in the lives of adolescents today. In fact, a national survey of adolescents (10-17 years of age) revealed that in the year before they were surveyed 25% of Internet users had formed casual online friendships (Wolak et al., 2002; Subrahmanyam and Lin, 2007).

Instant messaging is also an increasingly popular form of communication. A study by the Pew Internet and American Life Project found that 53 million Americans use IM, and 36% of these users reported using IM on a daily basis (Shiu and Lenhart, 2004). IM is a text based form of communication in which two or more people exchange text messages in real time using the Internet (Lenhart, 2005).

Some researches suggest that socially interactive technologies allow users to avoid or replace face-to-face communication (Nie and Erbring, 2000). If the person is shy (socially anxious) and feels uncomfortable with face-to-face interactions, these technologies may serve as a useful tool for avoiding such unpleasant situations and therefore may replace face-to-face communication (Pierce, 2009).

US, Canadian and Dutch studies have shown that the vast majority of adolescents spend several hours daily online. Further surveys show that adolescents consider the Internet a highly important medium in their everyday social life and use it to form and maintain social relationships (Selfhout et al., 2009).

Motivation

Today, social anxiety, social phobia and shyness are features that seen every individuals of all ages. Both adolescents and adults who have social anxiety against life and their environment scope, has led to more research on them. This study is related on teens

that high school level about 15-18. The beginning of puberty and the end of puberty is the reason why we selected this age range. Because, puberty is a vital phase for growing of young people and determine their personalities. This study is not been applied only Afyonkarahisar teens but also Uşak and Kütahya provinces are included. The purpose of this study is to research adolescents' use of social media, computers, text messaging, cell phones and instant messaging related to social anxiety effective's technological tools versus face-to-face communication. Because, especially 15-20 years-old-teens have been noticed to use on-line communication means having faster and interactive features rather than having face-to-face communication while talking to their friends or their parents. Consequently, in this study, the reason for this choice has a connection with whether social anxiety or gender will be researched.

Literature Overview

Internet Use among Teens

Use of Internet continues to increase worldwide. Colley and Maltby (2008) indicated that, 57% of households now have access, in comparison to 46% four years ago in the UK (National Statistics, 2006). The Digital Future Project in the US has found that 78.6% of Americans went online in 2005, with an accompanying increase in the amount of time spent per week on the Internet (Center for the Digital Future, 2005).

Many of the studies in this area have been conducted with university students, in part because of their widespread use of the Internet as a social tool; indeed such use among students is increasing. In addition, a number of studies have found a high prevalence of social anxiety among university students who may then turn to the Internet as a way of regulating, challenging or escaping their social fears (Shepherd and Edelman, 2005). Many university students commenting that they are shy in social situations, but are more open, easy going on the net, in chat rooms. They are shy about approaching people at a party or in large group, for example, but not about talking with people in chat rooms.

Cell Phone Use among Adolescents

Auter (2007) researched that some of them related to adolescents and young adults use the cell phone differently than their parents and other older users. They prefer to consider it their primary phone –traditional landline phone – for its. Some studies have found little or no difference in use based on gender (e.g., DeBaillon, 2003; DeBaillon and Rockwell, 2005). Other studies have found, however that boys tend to be more intrigued with technical aspects of the devices, while girls tend to prefer the interpersonal connectivity – and spend more time using their phones for voice calls (Henderson et al., 2002; Rakow and Navarro, 1993; Skog, 2002). In fact, while women in one study felt the phones resulted in more freedom, male teens found the additional connectivity a constraining inconvenience.

A recent Pew Internet research study found that approximately 33% of teens have a cell phone. Of the 33% of teens who reported owning a cell phone, approximately 64% said they had sent text messages. In addition, the Pew study found that of the young cell phone users, teenage girls tended to use text messaging much more than their male counterparts. Older teens (17 year olds) also reported sending more text messages on average than younger teens. Although cell phone use and text messaging have risen among U.S. teens, their popularity remains considerably less than European teens (Lenhart et al., 2005; Pierce, 2009).

Seventy-five percent of teenagers now own cell phones, and 25% use them for social media, 54% use them for texting, and 24% use them for instant messaging. Thus, a large part of this generation's social and emotional development is occurring while on the Internet and on cell phones (Hinduja and Patchin, 2007).

Instant Messaging

The two previously mentioned theoretical approaches might adhere to different types of Internet activities that may have differential effects on well-being. One type of activities surfing, which can be described as visiting web sites on the Internet for non-communication purposes. In contrast to surfing, Instant Messaging (IM-ing) consists of sending messages directly to others one has invited to the online conversation. Because of its dyadic, real-time, and private format, IM-ing has

been as an excellent 'training ground' for adolescents in terms of their social skills (Morgan and Cotten, 2003; Valkenburg and Peter, 2007). A survey study showed that among freshmen college students whereas increased time spent IM-ing was uniquely associated with less reported depression, increased time spent surfing was uniquely associated with more reported depression (Morgan and Cotten, 2003).

Social Anxiety and Gender Differences

Social anxiety has variously been referred to as both shyness and social phobia. Social phobia, (also known as social anxiety disorder) is at the more extreme end of the continuum of social anxiety and "includes a collation of symptoms which unlike shyness can vary in severity throughout one's life" these symptoms are only elicited in certain social situations (Leary, 1983). In contrast shyness while at the less severe end of the social anxiety continuum is more likely to be a life long characteristic of an individual's temperament which is experienced in every social occurrences (Lecrubier et al., 2000; Shepherd and Edelmann, 2005).

Individuals are often motivated by a need to feel a sense of belonging; however, those with social anxiety may find it difficult to fulfill this social need because of the Internet. For socially anxious individuals, the Internet and socially interactive technologies (text messaging) can have both positive and negative results. Kraut et al (1998) found that online interaction greatly reduced face-to-face social interaction.

Females usually have more negative attitudes toward computers and greater computer anxiety than males. Researches on computer self-efficacy in general also revealed that males on average have better computer self-efficacy than females (Hackett, 1985). Similarly, one might expect adolescent girls to be more worried than boys about peers' negative evaluations of them. Indeed, surveys have found that adolescent girls are more concerned than boys about others' judgments of their appearance and behavior. Moreover, rates of internalizing problems are higher among girls than boys and adult women are about twice as likely to be socially phobia as men (Schneier et al., 1992). Thus, adolescent girls may be more vulnerable than boys to feelings of social anxiety, and this may have implications for their social functioning (La Greca and Lopez, 1998).

Jackson et al. (2001) predicted that women would use e-mail more and men use the Web for information more, based on the greater interpersonal orientation of women

and greater task orientation of men. This prediction was supported in a large sample of Anglo-American undergraduates, even after computer self-efficacy, loneliness and depression were controlled for. Wasserman and Richmond-Abbott (2005) found that women use e-mail slightly but not significantly more than men but that men use chat rooms more. Shepherd and Edelman (2005) study social anxiety and Internet use to explore in relation to regulation of social fears. It is hypothesized that high social anxiety will be associated with low ego strength as well as greater scores on the Internet.

Methods

Purpose

It is very important to analyze of instant messaging, text messaging and other socially interactive technologies among teens due to significant popularity. Since social anxiety can affect one's type of social interaction, it is prominent to examine if social anxiety is influencing how adolescents communicate with others and which technology. The purpose of this study is to research adolescents' use of online social sites, cell phones, text messaging and instant messaging and if social anxiety influences technology versus face-to-face communication. So, the following hypotheses are proposed:

- H1: Females use socially interactive technology (text messages, cell phones, e-mail, and instant messages) more than males.
- H2a: There is a relationship between not feeling comfortable talking with others in person and feeling more comfortable talking with others online.
- H2b: There is a relationship between not feeling comfortable talking with others in person and feeling more comfortable messaging with others.
- H2c: There is a relationship between the amount of their families' monthly income and social anxiety.
- H3: Males are more social anxiety with face-to-face interactions than females.
- H4: Males are feeling more comfortable talking with others through a social interaction technology than females.

Participants and Data

The data was gathered from 544 students among High Schools in Afyonkarahisar, Kütahya and Uşak cities. The age of the participants ranged from 15 to 18. 32.4% were freshman, 24.1% were sophomore, 28.1% juniors and 15.4% were seniors. The sample consisted of 227 (41.7%) males and 317 (58.3%) females.

We first were contacted the principals and asked permission in order to survey some classes on school. After that, teacher was chosen to gain a sample of students from each school year. After obtaining permission from teachers, each student was warned about survey able to tell it their parents. The survey was applied in the students' classrooms and teachers were present during all testing. All students received the same instructions and their identity would remain secret. Each participant completed a report questionnaire.

Measures

The first two questions of the questionnaire consisted of primarily demographic questions such as age, sex, year in school, and general information. The next series ten questions included items of the students' comfort level in interacting with others face-to-face, online talking, cell phone or text messaging. Questions were prepared by using both nominal (yes or no) and 5 point likert-type scales. All hypotheses were developed by us to measure the relationship between social anxiety and usage of technological tools among teens. The reliability of tests confirms our measurement (Cronbach $\alpha=72.4$). This test can be acceptable according to rule of thumb for describing internal consistency $0.7 \leq \alpha \leq 0.8$

Results

3.7% stated the amount of children who separate from their families is not adequate for measuring the relationship between social anxiety and family situation. First of all, participants were asked about type of technological tools they had use.

- 88.9% reported having personal computer.
- 79.2% reported having Internet on their PC.
- 92.6% stated that having messenger address.
- 73% reported having e-mail accounts.
- 96.7% reported having cell phones.
- 72.2% reported having text messaging capabilities on their cell phones.
- 84.3% stated having social media sites and most of them are using Facebook (49.2%). Most of the other has more than one membership in social sites (twitter, MySpace, LinkedIn etc).

The following next questions asked how much time adolescents use each of their time on their technological tools on average day. Table 1 shows the results.

Table 1. Technological tools use

	9 h + (%)	7-8 h (%)	5-6 h (%)	3-4 h (%)	1-2 h (%)	30 min (%)	None (%)
Msn	0.4	0.4	0	0.6	4.3	13.6	80.7
Instant message	3.7	2.2	4.6	10.8	17.5	23.6	37.5
Cell phone	0.6	0.2	0.4	2.2	11.9	56.9	27.8
Social sites	0.7	1.7	1.5	8.0	29.0	33.3	25.8
Music	3.9	2.4	5.0	10.3	39.0	31.8	7.6
Game	0.7	0.9	1.3	4.3	17.7	24.0	51.0
Mail	0.9	0.2	0.2	1.1	3.9	12.8	80.9
Internet	1.1	0.4	1.1	6.7	26.8	40.1	23.8

As shown in Table 1, adolescents rarely use messenger sites and mail address. They generally send instant message with their cell phones. They spend 1-2 hours for listening music and averagely 30 minutes for Facebook in a day. More than half of teens have cell phones that enable to call, message and access to Internet. All following hypothesis were examined to 95% level of confidence.

Regression analysis was made to see the relationship between feeling anxiety and family income with technological tools usage among adolescents; T-test, Chi-square test and one way ANOVA test was performed in the study to see gender differences with technology use, face-to-face interaction, talking online, making friends online and playing games.

Table 2. Regression estimates and correlation

Variables		Full sample (n:544)			
Dependent	Independent	Coefficient	Standart deviation	Significant (p)	Correlation coefficient (r)
Gender (technology use)	Males	1.52	2.31	0.019	
	Females	1.08	1.90		
Gender (face-to-face interaction)	Males	1.86	0.99	0.003	
	Females	2.12	0.92		
Gender (talking online)	Males	3.48	1.05	0.009	
	Females	3.71	0.96		
Gender (making friends online)	Males	3.62	1.19	0.000	
	Females	4.14	1.04		
Game	Males	0.30	0.75	0.000	
	Females	1.06	1.66		
Feeling anxiety	Instant message	0.069	0.054	0.201	0.449
	Social sites	0.139	0.052	0.008	
	Msn	-0.005	0.025	0.851	
	Cell phone	0.308	0.045	0.000	
Income (monthly)	Instant message	173,737	119,286	0.146	0.125
	Social sites	-270,341	115,816	0.020	
	Msn	-8,104	55,636	0.884	
	Cell phone	-38,099	99,021	0.701	

After T-test was made for hypothesis 1, table 2 shown that females (M: 1.08, SD: 1.9) reported that they are using text messaging more than males and significant relationship between text messaging and interactive technology (M: 1.52, SD: 2.31, p: 0.019). In addition, males (M: 0, 3, SD: 0.75) spend much more time than females to play games and there is a gender differences between playing games on computer and social technology using (M: 1.06, SD: 1.66, p: 0.000). There are not gender differences in use of instant messaging, e-mail, social network sites and chat rooms.

When someone have to talk face-to-face, feeling anxiety was positively correlated with feeling comfortable with others through cell phones and social media sites (r:0.449, p: 0.000). There isn't a relationship between social anxiety of face-to-face interaction and feeling comfortable with others via messaging (p: 0.204). The regression analysis showed, there isn't a relationship between the amount of families' monthly income with social interaction technologies (p: 0.230, r: 0.125).

According to the results of Chi-square test, significance was not found for hypothesis 3. However, a female feels more uncomfortable than males for face-to-face talking than males (Levene's test $p: 0.017$). There is just significant differences feeling comfortable by talking with social media sites with gender ($p: 0.003$), that is; females (M: 2.12, SD: 0.92) are more uncomfortable than do males (M: 1.86, SD: 0.99, $p: 0.000$).

There is significant difference for hypothesis 4, after One-way Anova test was made, teens prefer talk with someone on computer instead of talking and make new friends with someone on computer. Females (M: 3.71, SD: 0.96) prefer talking with some on computer instead of talking face-to-face than males (M: 3.48, SD: 1.05, $p: 0.009$). Similarly, females (M: 4.14, SD: 1.04) prefer making new friends with someone on computer more than males (M: 3.62, SD: 1.19, $p: 0.000$).

Conclusion

In Turkey, cell phone, text messaging, instant message and social sites membership are recognized as the most important medium of communications among adolescents. Internet access via PCs and mobile phones plays very significant role Turkey adolescents. Technology tools effect teens' social emotions against their families and friends. This study demonstrated that teens are using socially interactive technology to communicate with others and it serves social anxiety and decreasing face-to face communication.

The findings of the current study found that females are using text messaging more than males. However, males are playing games for a long time than females. In addition, females are feeling more uncomfortable talking with others face-to-face than males. And, females also prefer talking with some on computer instead of talking face-to-face than males. Similarly, females prefer making new friends with someone on computer more than males.

Beyond the results of this study, we examined something very important situation related to adolescents' today currents. While the age of participants were increasing, the time spend in social media is decreasing. The reason for such conclusion revealed that, senior students have to work more for university exams during education session. So, they can't spend much more time on social media sites.

Many studies in this area is conducted for university students. The use of Internet as a social tool is more common among at this age adolescents. But this study is related to high school level for students and we examined the relationship between social anxiety and the use of Internet, cell phone as a technological tool. Further studies may apply for university students.

Finally, adolescents who may be shy, have social phobia, and feel anxiety about talking with someone, various and different technologies provide reliable opportunity for them to contact with them. It is possible to reproduce the contributions of technology for our world. Although this technology facilities the lives of people, it sometimes breaks the peace. Technology has changed the way we live today and also changing our communication skills with high costs. Only time will tell what is going on in the future. Parents and teachers have great responsibilities for this subject.

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Appendix 1

The purpose of this questionnaire is to research 15-20 year old adolescents' use of online social sites, cell phones, text messaging and instant messaging and if social anxiety influences technology versus face-to-face communication.

	<i>Assoc. Prof. Ali Eleren</i>	<i>Asst. Prof. Sinan Yörük</i>	<i>Reserch</i>	<i>Assist.</i>
Bilal Şişman				
1. What is your sex?	-----Male-----Female			
2. What is your year in school? (select only one)	-----			
	(9)	(10)	(11)	(12)
3. What is your families' total income?	-----TL			
4. Does your mother and father live together?		---Yes		---No
5. Do you have a daily computer?		---Yes		---No
6. Do you have a Internet access on your computer?		---Yes		---No
7. Is your Internet connection wireless?		---Yes		---No
8. Do you have a instant messaging address?		---Yes		---No
9. Do you have e-mail address use actively?		---Yes		---No
10. Do you have a cell phone?		---Yes		---No
11. Do you have access to the Internet on your cell phone?		---Yes		---No
12. Do you have a social networking account? (Twitter, Facebook, MySpace etc)		---Yes		---No
13. If yes on 12, which of the following social networking do you have?				
	-----Facebook	-----Twitter	-----Linkedin	-----Youtube
	-----Other (please specify)-----			-----Classmates

14. **On an average day**, how much time do you spend with each of the following?

9+	7-8	5-6	3-4	1-2	30 min-	None
hours/	hours/	hours/	hours/	hours/	utes/	
daily	daily	daily	daily	daily	daily	

- Instant messaging
- Text messaging with cell phone
- Talking with cell phone
- Social networking
- Listening music
- Playing game
- E-mail
- Online (surfing on the Internet)

15. How comfortable are you talking with friends, family and teachers face-to-face?
---Very comfortable ---Comfortable ---Normal ---Uncomfortable ---Very uncomfortable
16. Do you find yourself getting anxious when you have to talk with someone face-to-face?
---Always ---Frequently ---Sometimes ---Rarely (very few) ---Never
17. How comfortable are you talking with others using text messaging?
---Very comfortable ---Comfortable ---Normal ---Uncomfortable ---Very uncomfortable
18. (If yes on 12) How comfortable are you talking with others on your social networking sites?
---Very comfortable ---Comfortable ---Normal ---Uncomfortable ---Very uncomfortable
19. How comfortable are you talking with others on your instant messaging?
---Very comfortable ---Comfortable ---Normal ---Uncomfortable ---Very uncomfortable
20. How comfortable are you talking with others on your cell phone (talking)?
---Very comfortable ---Comfortable ---Normal ---Uncomfortable ---Very uncomfortable
21. How often dou you text message someone instead of talking to them face-to-face?
---Always ---Frequently ---Sometimes ---Rarely (very few) ---Never
22. How often do you talk with someone on the computer instead of talking to them in person?
---Always ---Frequently ---Sometimes ---Rarely (very few) ---Never
23. How often dou you text message someone instead of talking with them on the cell phone?
---Always ---Frequently ---Sometimes ---Rarely (very few) ---Never
24. How often dou you make new friends with someone on the computer?
---Always ---Frequently ---Sometimes ---Rarely (very few) ---Never
25. When confronted with a difficult suation with another person, which of the following would you typically use to talk with other person?
-----Text messaging with cell phone -----Talking with cell phone
-----E-mail -----Instant messaging
-----Social networking sites -----Face-to-face communication