CONSEQUENCES OF SOCIALLY INTERACTIVE TECHNOLOGIES ON ADOLESCENTS

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Consequences of Socially Interactive Technologies on Adolescents

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Abstract

Much research has been done on technology use over the last decade. Adolescents’ preference and ability to communicate face-to-face within personal relationships is changing due to the high amount of communication done online and use of other social interactive technologies (SIT) such as instant messaging, text messaging, and social networks. The effects of technology use when specifically used for communication by adolescents are explored in this paper. Considerable research still needs to be completed to address the consequences of this new form of communicating.
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Introduction

Technology and the Internet have become predominant factors in the lives of contemporary youth. Even in the short time that the technology has been available, the reasons for using it have changed. With the trend of the last decade leaning toward using the Internet for educational research, surfing, shopping, and games; the current trend is communication, as 93% of teens reported that their primary purpose for going online is for communication (Jones & Fox, 2009).

As technology and the Internet are increasingly used for communication, the use of socially interactive technologies (SIT) has then also significantly increased within the adolescent population. Ninety-three percent of all Americans between 12 and 17 years of age use the Internet and 75% of these adolescents use the Internet for instant messaging (Valkenburg & Peter, 2007). The other predominant means of technology utilized for communication purposes by youth are texting and social networking. Three-quarters of adult Internet users under the age of 25 have a profile on a social networking site with more than one-third checking their profile page daily, and the numbers increase with teens (Correa, Hinsley, & Zuniga, 2010). Instant messaging has been tied to social networking site use, as teens who have profiles are more likely to send and receive instant messages (Lenhart, Madden, Macgill, & Smith, 2007).
Review of Literature

Characteristics of Use

**Personality Traits.** Many adolescents are using technology on a daily basis raising the question of what kinds of people rely on these SIT for their interactions with others. Personality traits have been considered significant predictors of Internet use, specifically SIT. Prior research established that neurotic, isolated and depressed people were using SIT to create new friendships and social ties in order to replace face-to-face social interactions while extraverted individuals used them as tools for social extension (Leman & Lajunen, 2010). Recent research has found that SIT actually do not seem to provide alternative sources of social support but maintain and strengthen already existing social networks (Bryant, Sanders-Jackson, & Smallwood, 2006). Therefore, potential personality predictors of SIT would be extraversion and openness to experience. There appear to be slight gender differences with respect to personality characteristics as women with higher levels of extraversion and openness tended to use SIT more so than men (Leman & Lajunen, 2010).

While many adolescents are maintaining and strengthening their already existing friendships using support technologies, some adolescents are forming new close relationships with people they meet online. Adolescents with close online relationships with strangers were found to be highly troubled, to have high reported amounts of conflict with parents, to engage in low communication with parents, and to have engaged in high levels of delinquency (Wolak, Mitchell, & Finkelhor, 2003). The characteristic most strongly associated with boys and the use of SIT was having low communication with parents while for girls the strongest association was with having parent-child conflict (Wolak, Mitchell, & Finkelhor, 2003). Since girls place greater importance on relationships, it is not surprising that girls have more interest in developing new
online relationships with strangers (Wolak, Mitchell, & Finkelhor, 2003). Related to this group of adolescents, research has found that heavier use of technology, specifically text messaging and instant messaging, is related to earlier and heavier substance use during adolescence and this is more pronounced in adolescents with alcoholic parents (Ohannessian, 2009).

**Perceptions.** Personality characteristics seem to have a large impact on Internet use but the adolescents’ perceptions of Internet use also play a significant role. Although socially anxious adolescents were actually found to communicate less often online than non-socially anxious adolescents, they thought more strongly that online communication was more effective than face-to-face communication. Their perception then led them to use more online communication more often than other forms of communication (Valkenburg & Peter, 2007). In addition, adolescents who perceived online communication to be more effective then also experienced more closeness to their existing friends, which is consistent with the idea that online communication is used for maintaining friendships and not merely for creating them.

Research has had inconsistent conclusions when it comes to the effects of technology on internalizing problems. Some research has found that lonely, depressed, and anxious individuals reported using the Internet more for emotional support, to meet new people, and to interact with others (Smahel, Brown, Blinka, 2012). However, the social context in which Internet use occurs may mediate the effects of Internet use on internalizing problems (Selfhout, Branje, Delsing, ter Bogt, & Meeus, 2009). Youth using the Internet for the purpose of surfing (non-communication) and who already have a perceived low quality of friendship may develop more internalizing problems (e.g. depression) compared to youth using the Internet for the purpose of communication (Selfhout et al., 2009). Using instant messaging may give youth a sense of perceived social support and strengthen their social skills (Selfhout et al., 2009). Although these
adolescents may perceive social support from using instant messaging, they do not experience a reduction of their fear of ‘off-line’ social interactions (Campbell, Cummings, & Hughes, 2006).

**Interpersonal Relationships**

Adolescence is associated with a strong need for friendships and peer-group affiliations along with the need for person-to-person communication (Lee & Sun, 2009). The changing dynamics of communication within the adolescent population will have important implications for social relationships and communication in real life. It is thought that SIT, specifically IM, acts as a mediator between real and virtual communication, leading directly to the individual’s virtual interpersonal relationship (Lin, Sun, Lee, & Wu, 2007). With peer-based connectedness so important to adolescents, their interactions with others enhance their sense of belonging and help them understand their individual self and others (Boneva, Quinn, Kraut, Kieler, & Shklovski, 2006). Worldwide, adolescent lives have become so busy and full of activities that their time to interact with friends is becoming more limited (Lee & Sun, 2009). Since developmentally they still need face-to-face communication, they adapt these new technologies to continue improving and sustaining their relationships. By staying connected to their social groups, they are defining their self-identity (maintaining individual friendships) and their social-identity (belonging to peer groups) (Lee & Sun, 2009).

Existing research suggests that there is continuity in patterns of interpersonal communication and relationship quality over time and across social contexts (Mikami, Szwedo, Allem, Evens, & Hare, 2010). Since interpersonal communication and relationships are frequently happening over the Internet, it is believed that this continuity of social interaction may be extended into the online domain. According to Mikami and colleagues, the presence of higher positivity and lower negativity in a peer interaction in early adolescence each predicted a
greater number of friends on their social networks (2010). These findings also emphasized the importance of establishing positive peer relationships during adolescence because that sets the stage for the quality of relationships they have later at ages 20-22 years (Mikami et al., 2010). Since there is a continuity across social contexts, it was found that youths’ patterns of peer relationships, friendship quality, and behavioral adjustment at ages 13-14 years old predicted similar qualities of interaction and problem behavior on their own personal social network webpage at ages 20-22 (Mikami et al., 2010).

**Online Communication**

Technology is changing the way that people interact and communicate. Although there have been ways to avoid face-to-face communication, new technologies are providing more ways to communicate with others. There are inconsistent conclusions when it comes to quality and level of communication from using technology. One conclusion is that communication through technology is of poorer quality than face-to-face interactions. Communication is more than just words. Nonverbal cues and personalizing information are equally important when it comes to communicating (Wood, 2007). Since these nonverbal cues and personalizing information are limited online, Internet-based interactions may result in low quality relationships (Mikami et al., 2010). Also, it is believed that online communication does not substitute for intimate face-to-face interaction, but takes time away from this developmentally necessary experience. Technologies allow users to avoid or replace face-to-face communication (Pierce, 2009) especially if the person is already anxious or uncomfortable with social interactions. By communicating with these technologies, adolescents perceive more control over the social interaction and control the length of the conversation. Since women place greater importance on interpersonal relationships and often feel less comfortable in social situations, they then also tend
to feel more comfortable communicating online as opposed to in person (Pierce, 2009). Others argue that these technologies are just a new medium for youths to use and that their patterns of relationships and quality of communication remain the same as with other forms of communication, since they treat the online environment as just another place to interact with already existing friends (Lee & Sun, 2009).

**Risks and Attractions of Online Communication**

A consistent finding in developmental research is the overarching goal for adolescents to achieve psychosocial autonomy and an important factor in this goal consists of developing a sense of their self or identity (Valkenburg & Peter, 2011). The enhanced controllability incorporated with online communication gives adolescents a sense of security, specifically in regards to self-disclosure (revealing intimate aspects of one’s true self) and self-presentation (selectively presenting aspects of one’s self to others) (Walther, 2007). The greater sense of control they feel using online communication, the freer they feel having interpersonal interactions on the Internet than compared to face-to-face (Valkenburg & Peter, 2011). This provides them with the opportunity to overcome social anxieties they may have typically encounter in face-to-face interactions, especially for adolescents who are shy and self-conscious.

**Anonymity.** Several features of online communication encourage this enhanced controllability of self-presentation and self-disclosure. The ability for adolescents to be anonymous is very easy while communicating online and can be done in different ways. Not only can they disguise who and where they are as a specific individual (source anonymity) but can also chose to reduce or exclude nonverbal clues conveyed in online communication (audiovisual anonymity) (Valkenburg & Peter, 2011). Adolescents can easily control how much information they wish to convey and can decide whether they wish to present only verbal
information or enrich the communication with visual and/or audio cues (Valkenburg & Peter, 2011). This anonymity-induced control of self-presentation and self-disclosure can affect adolescents’ psychosocial development. Online anonymity can lead to less concern about their physical appearance which may facilitate more self-disclosure and self-presentation and, as a result, create opportunities for approval and social acceptance, but consequently, may also result in disinhibited, aggressive, and insulting comments, as well as cyberbullying and online harassment of peers (Walther, 2007).

The level of “editability” with online communication is higher than face-to-face communication, where it can only be adjusted afterward, rather than before it is communicated (Valkenburg & Peter, 2011). This “editability” appears beneficial for adolescents who are shy or self-conscious or feel physically unattractive during face-to-face interactions but has also been shown to allow adolescents to carefully think about and edit information to a point where it may become particularly painful for a target or online victim (Valkenburg & Peter, 2011). The easy accessibility of the Internet also creates an easy access to an unlimited number of people and lets adolescents interact with peers whom they may not have seen for a long time or whom they cannot meet easily in their lives (Subrahmanyam, Smahel, & Greenfield, 2006).

**Self-Esteem.** There is a universal desire among human beings to maintain, protect, and enhance their self-esteem. Two important predictors of self-esteem are the control over one’s environment and the approval and acceptance from others (Gross, 2009). Online communication may provide adolescents with both as it enables adolescents to control what they want others to know about them (Valkenburg & Peter, 2011). As adolescents can create or modify the presentations of themselves and choose the depth of self-disclosure, they can optimize the reactions and feedback from their peers and thus enhance their self-esteem (Valkenburg & Peter,
2011). According to Valkenburg and colleagues (2006), they found that the more often adolescents used social network sites, the more often they received reactions; the more reactions they received, the more positive these reactions became and eventually these positive reactions led to a higher self-esteem. However, among 7% of the adolescents, the reactions on their profile were mostly negative and their online self-presentation decreased their self-esteem (Valkenburg, Peter, Schouten, 2006).

**Sexual Self-Exploration.** The Internet brings ample opportunities for adolescents to research and grow in their sexual development. Research exploring emotional connectedness online has supported the notion that online interactions can support emotional intimacy (Reich, Subrahmanyam, & Espinoza, 2012). Because of the possibility of anonymous communication on the Internet, adolescents can address sensitive sexual issues more easily and less threateningly than ever before in face-to-face communication (Subrahmanyam, Smahel, & Greenfield, 2006). Adolescents frequently use the Internet to obtain advice about sexual health issues and to discuss moral, emotional, and social issues related to teenage sex (Subrahmanyam, Smahel, & Greenfield, 2006). Online communication is a relatively safe means of exploring sensitive issues especially for the gay and lesbian youth (Hillier & Harrison, 2007). Because of the discrimination so rampant against the gay and lesbian populations, they use the Internet for discussing problems surrounding their sexual orientation, to come out, and to practice the public acknowledgement of their sexual orientation (Hillier & Harrison, 2007).

Although there is great advantage to youth using the Internet as a tool to communicate about sexual issues, there is a serious risk of unwanted sexual online solicitation and harassment (Valkenburg & Peter, 2011). Although it is on the decline, 4% of adolescents still report aggressive sexual solicitation and the adolescents who are most at risk for unwanted sexual
solicitation are boys who are gay, those who are uncertain about their sexual orientation, who have been sexually or physically abused, those have engaged in other risky offline or online behavior, and youth who frequently visit chat rooms and talk online with strangers about sex (Mitchell, Wolak, & Finkelhor, 2007).

**Cyberbullying.** An important risk of online communication is the increasing number of cyberbullying incidents among adolescents, with victimization rates being as high as 53% (Valkenburg & Peter, 2011). Cyberbullying is the willful and repeated harm inflicted through the use of computers, cell phones, and other electronic devices (Patchin & Hinduja, 2010). Cyberbullying is an aggressive and deliberate behavior repeated over time that is carried out by an individual or group using electronic devices towards a victim (Calvete, Orue, Esteves, Villardon & Padilla, 2010). Unfortunately, cyberbullying is enhanced by several of the factors that make online communication attractive to adolescents; anonymity and accessibility (Valkenburg & Peter, 2011). Being a victim of cyberbullying is associated with many psychosocial attributes, such as increased social anxiety, psychological distress, and symptoms of depression (Pierce, 2009).

**Internet Addiction.** The expanding use of the Internet to communicate with peers has prompted concern that it could become an addictive behavior for some adolescents (Smahel, Brown, Blinka, 2012). Although there is not consistent research on the exact definition of Internet addiction, several components have been identified and used to create addictions scales for adolescents, such as the Internet Addiction Test (IAT), developed by Dr. Kimberly Young (See Appendix A). The IAT is a reliable and valid measure of addictive use of Internet and consists of 20 items that measures mild, moderate and severe level of Internet Addiction (Young, 1995). Internet addiction operates on triggers or cues which lead to "net binges" (Young, 1995).
The more that adolescents engage in friendship seeking or peer communication online, the more time they are spending online, and the more opportunity they could have to develop Internet addiction behavior patterns (Smahel, Brown, Blinka, 2012).

With the transition from adolescence to adulthood, young people’s face-to-face interactions with peers decrease and time alone increases, leaving them vulnerable to using the Internet to compensate for lost or weakened relationships with peers (Smahel, Brown, Blinka, 2012). Without supervision, an adolescent can become excessively involved in online activity (Yen, Yen, Chen, Chen, & Ko, 2007). Some adolescents’ dependence on the Internet for their social interactions could make them more vulnerable to Internet addiction (Smahel, Brown, Blinka, 2012). Youth who prefer online friendships probably have more conflicts between their online and offline worlds, which may cause them to neglect their offline friends and increase their tendency to overuse the Internet (Smahel, Brown, Blinka, 2012). Since adolescence is a crucial time for the formation of lifestyles, misuse of the Internet at this time of development can be more harmful than in later periods (Smahel, Brown, Blinka, 2012).
Conclusion

The current shift of using the Internet and other SIT for communication has provided many opportunities for adolescents to explore their identity, find support and information about sensitive issues, develop new relationships and maintain current friendships. (Valkenburg & Peter, 2011). Overall, research strongly supports that the use of technology for communicative purposes is on the rise and although research is inconsistent on the impact, noteworthy consequences for adolescents have been found. While several opportunities of online communication, such as enhancement of self-esteem, increased opportunities for formation of friendships, enhanced quality of existing friendships, and enhanced opportunities for sexual self-exploration, are supported by research, it has also clearly revealed some risks including cyberbullying, sexual online solicitation, and Internet addiction. Although the effect of online communication on psychosocial development depends on technological, situational, and personal factors, the research suggests that an important challenge is to understand how to enhance the opportunities of online communication while managing its risks (Smahel, Brown, Blinka, 2012).

Adolescents have never had such a chance to explore their identities with such a variety of means and without the traditional supervision of parents and schools (Patchin & Hinduja, 2010). It raises questions about the future role of parents and schools in the psychosocial development of adolescents. It will be important to design future research that will help us determine which teens will benefit from online communication and which may be harmed. Only when we can understand individual differences in the use and effects of online communication will we be able to design interventions that target different subgroups of adolescents. (Valkenburg & Peter, 2011). Still lacking in research are actions to prevent and reverse any negative consequences that online communication and other SIT are having on adolescents.
References


CONSEQUENCES OF SIT ON ADOLESCENTS


Appendix A

Internet Addiction Test (IAT)

Answer the following questions by using this scale:

1 = Rarely
2 = Occasionally
3 = Frequently
4 = Often
5 = Always
0 = Does not apply

1. How often do you find that you stay on-line longer than you intended?
2. How often do you neglect household chores to spend more time on-line?
3. How often do you prefer the excitement of the Internet to intimacy with your partner?
4. How often do you form new relationships with fellow on-line users?
5. How often do others in your life complain to you about the amount of time you spend on-line?
6. How often do your grades or school work suffer because of the amount of time you spend on-line?
7. How often do you check your email before something else that you need to do?
8. How often does your job performance or productivity suffer because of the Internet?
9. How often do you become defensive or secretive when anyone asks you what you do on-line?
10. How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?
11. How often do you find yourself anticipating when you will go on-line again?
12. How often do you fear that life without the Internet would be boring, empty, and joyless?
13. How often do you snap, yell, or act annoyed if someone bothers you while you are on-line?
14. How often do you lose sleep due to late-night log-ins?
15. How often do you feel preoccupied with the Internet when off-line, or fantasize about being on-line?
16. How often do you find yourself saying “just a few more minutes” when on-line?
17. How often do you try to cut down the amount of time you spend on-line and fail?
18. How often do you try to hide how long you’ve been on-line?
19. How often do you choose to spend more time on-line over going out with others?
20. How often do you feel depressed, moody or nervous when you are off-line, which goes away once you are back on-line?

Total up the scores for each item. The higher your score, the greater level of addiction is.

20 – 49 points:
You are an average on-line user. You may surf the Web a bit too long at times, but you have control over your usage.

50 – 79 points:

You are experiencing occasional or frequent problems because of the Internet. You should consider their full impact on your life.

80 – 100 points:

Your Internet usage is causing significant problems in your life. You should elevate the impact of the Internet on your life and address the problems directly caused by you Internet usage.

(Young, 1995)