Internet use and developmental tasks: Adolescents' point of view

Internet use and developmental tasks: Adolescents' point of view

Gabriella Borca[a,1] , Manuela Bina[a], Peggy Keller[b], Lauren Gilbert[b], Tatiana Begotti[a]

[a] *Department of Psychology, University of Torino, Italy*

[b] *Department of Psychology, University of Kentucky, Lexington, United States*

ABSTRACT

This study explored adolescents' opinions about how Internet use supports the achievement of their developmental tasks. Qualitative data were collected in focus groups interviews with 127 Italian Internet users (11-20) attending middle and high schools. Discussions were recorded, transcribed and analyzed using content analysis. Results showed that the Internet plays important functions in identity formation, personal autonomy, and relationships outside the family. It allows teens to develop their own interests, to identify with others and, at the same time, differentiate from others. The Internet is also an arena in which adolescents develop and practice autonomy. The Internet can be a source of conflict with parents, because of parents' concerns about Internet use. However, the Internet can also be a meeting ground with parents. Finally, participants indicated the Internet is used to form close relationships with peers. Gender and age differences are discussed. Although the study is cross-sectional and relies only on adolescent report, findings illustrate how the conceptual framework of developmental goals may be helpful for understanding how the Internet can affect adolescents' lives.

Keywords

Adolescence, Identity Formation, Close Relationships, Autonomy, Internet Usage

[1] Corresponding author. Present address: 4260, Desdemona Way, 40513 Lexington (KY), United States. Tel. +1 859 539 1847. Permanent address: Department of Psychology, University of Torino, Via Verdi 10, 10126 Torino, Italy. Tel. +39 011 6702986; fax: +39 011 6702790.
E-mail addresses: gabriella.borca@unito.it (G. Borca), manuela.bina@gmail.com (M. Bina), pske222@uky.edu (P. Keller), lrgilbert2@gmail.com (L. Gilbert), tatiana.begotti@unito.it (T. Begotti)

Internet use and developmental tasks: Adolescents' point of view

ABSTRACT

This study explored adolescents' opinions about how Internet use supports the achievement of their developmental tasks. Qualitative data were collected in focus groups interviews with 127 Italian Internet users (11-20) attending middle and high schools. Discussions were recorded, transcribed and analyzed using content analysis. Results showed that the Internet plays important functions in identity formation, personal autonomy, and relationships outside the family. It allows teens to develop their own interests, to identify with others and, at the same time, differentiate from others. The Internet is also an arena in which adolescents develop and practice autonomy. The Internet can be a source of conflict with parents, because of parents' concerns about Internet use. However, the Internet can also be a meeting ground with parents. Finally, participants indicated the Internet is used to form close relationships with peers. Gender and age differences are discussed. Although the study is cross-sectional and relies only on adolescent report, findings illustrate how the conceptual framework of developmental goals may be helpful for understanding how the Internet can affect adolescents' lives.

Keywords

Adolescence, Identity Formation, Close Relationships, Autonomy, Internet Usage

1. Introduction

Adolescence is a period of many biological, psychological and social changes. Adolescents have to learn to adjust to their changing bodies and emerging needs as well as their new skills, roles and responsibilities (Christie & Viner, 2005). They face developmental tasks mainly related to pubertal changes, identity construction and to the redefinition of relationships with adults and peers (Adams & Berzonsky, 2008). For modern adolescents, "online" environments are a significant space of experience in their growth process. Internet usage has considerably increased in adolescence over the past decade (Purcell, 2012). An estimated 95% of American teens ages 12-17 years and 89% of Italian teens between 15 and 19 years surf the Internet (Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013; Istat, 2013). The popularity of Internet in adolescence triggered a wide spectrum of research on the reasons for Internet use among adolescents. Boys and girls spend most of their online time in private communication (e.g., email, instant messaging) with persons they know in their offline lives (Gross, 2004; Tsitsika et al., 2014), seeking information and entertainment, and sometimes to avoid boredom (Lin & Yu, 2008). Adolescent girls spend more time on social networking sites (Rideout, Foehr, & Roberts, 2010) and use them to reinforce pre-existing friendships, whereas adolescent boys use them to flirt and make new friends (Lenhart & Madden, 2007) and to compensate for social anxiety and learning (Barker, 2009; Desjarlais & Willoughby, 2010).

Internet-related functions have become increasingly integrated into people's daily lives, and, with the rapid proliferation of users, evidence has begun to emerge suggesting that Internet use may fulfill different developmental needs. Teens use new forms of technology to develop close and meaningful relationships (McKenna, Green, & Gleason, 2002; Tzavela et al., 2015; Valkenburg & Peter, 2009b), explore their identity (Subrahmanyam, Smahel, & Greenfield, 2006; Israelashvili & Bukobza, 2012), sexuality (Suzuky & Calzo, 2004) and intimacy (Smahel & Subrahmanyam, 2007), and find information about developmentally sensitive issues (Valkenburg & Peter, 2009a). They can find academic support and learn (Chen & Fu, 2009), strengthen their online

communication skills and knowledge (Koutamanis, Vossen, Peter, & Valkenburg, 2013; Valkenburg & Peter, 2011), gain positive feelings of mastery and competence (Schmitt, Dayanim, & Matthias, 2008), learn from their peers about communication norms and cultures (Lusk, 2010), increase the feeling of connection (Utz, 2015), and the sense of community (Oeldorf-Hirsch & Sundar, 2015).

Although research has identified multiple ways in which adolescents use the Internet, these studies have some limitations. First, most studies focused on motives for Internet use by adolescents (Barker, 2009; Desjarlais & Willoughby, 2010; Lenhart & Madden, 2007), but only a few of them embed these motives in a developmental theoretical prospective. Moreover, it is not clear whether these findings are applicable to Italian adolescents. Second, researches have mainly stressed the role of social network sites (SNS) in two specific developmental tasks: building and maintaining relationships with peers and partners and identity construction (Valkenburg & Peter, 2011; García-Martín & García-Sánchez, 2015). However, several developmental tasks typical of adolescence are still little explored, such as the redefinition of parental relationships, the processes of identification and differentiation in order to achieve psychosocial autonomy (Steinberg, 2008). Furthermore, developmental tasks may be accomplished not only through SNS use, but also through other activities on the Internet (playing games, searching for information in order to cultivate own interests, etc.). Third, there is little theoretically driven research on adolescents' perspectives about the role of Internet in their lives. Tzavela et al. (2015), based on an adolescent-centered perspective, found that adolescents consistently connected specific online applications to adolescent-typical needs. However, their participants were adolescents reporting signs of Internet addictive behaviors and findings might be different in a normative sample. Fourth, to our knowledge, there is a lack of research that explores adolescents' opinion on how the Internet may be used to face developmental tasks in an Italian context. The current study addresses all these gaps. Our aim is to explore adolescents' opinions about how Internet use may support their achievement of goals identified as important in a developmental perspective. We use qualitative data obtained by focus-group

interviews in an Italian context to elucidate the developmental goal-related functions of adolescents' Internet use. This research takes into account gender and age differences in adolescent reasons for Internet use and online activities.

2. Literature review

2.1 Internet Use and Developmental Tasks

The concept of developmental tasks, introduced by Havighurst (1972) assumes that human development in modern societies is characterized by an increasingly difficult series of tasks that individuals must complete throughout their lives. They represent internalized links between individual needs and societal claims that gain high subjective relevance, guide motivation and behavior, and show context-specific differences between cultures and historical periods (Adams & Berzonsky, 2008). The major task for western modern adolescents is to create a stable identity and become complete and productive adults (Steinberg, 2008). They take on this major task adjusting to pubertal changes, achieving a new level of closeness and trust with peers, attaining independence from parents, developing of a sense of personal identity, and achieving autonomy in the larger world (Kirchler, Palmonari, & Pombeni, 1993; Bosma & Kunnen, 2001).

A lot of research on adolescent Internet use has focused primarily on its adverse effects on adolescent well-being; for example adolescent Internet use has been linked with social isolation (Sanders, Field, Diego, & Kaplan, 2000), poor school performance (Wainer et al., 2008), loneliness and depression (Morahan-Martin & Schumacher, 2003), ill-being (Rosen et al., 2014), cyberbullying and harassment (Raskauskas & Stolz, 2007; Fogel & Nehmad, 2009). However, the Internet can also be beneficial for youth and help them to attain relevant developmental tasks. Most prior research has focused on the effect of the Internet, in most cases in terms of SNS usage, on identity construction and peer and romantic relationships (Best, Manktelow, & Taylor, 2014).

Online identity exploration takes place within environments such as multi-user domains, virtual games, chat and instant messaging systems (Greenfield & Subrahmanyam, 2003). The

anonymity afforded to teens within virtual worlds allows adolescents more flexibility in exploring their identity (Calvert, 2002; Lancini & Turani, 2009). Online exploration of identity can take several forms, including the name or avatar assumed, and the types of information that are revealed. Online, adolescents can be whoever they choose to be and can slide in and out of various possible selves. This allows them to experience different aspects of their identity and learn to adjust to their maturing bodies. Adolescents, especially girls, may pretend to be someone older (Valkenburg, Schouten, & Peter, 2005). Identity is developed and defined partly in relation to other people (Bosma & Kunnen, 2001) and social media provide adolescents opportunities to compare themselves with others. Playing games is also a way to fulfill self-affirmation need, typical of adolescence (Hellström, Nilsson, Leppert, & Åslund, 2012). Observing other people and searching for their acceptance or validation in social networks are also important parts of developing individual and group identities and can influence adolescent well-being and self-esteem (Valkenburg, Peter, & Schouten, 2006; Jackson, von Eye, Fitzgerald, Zhao, & Witt, 2010).

At the same time, many adolescents use the Internet to connect with friends, reinforce existing relationships, support others and receive social support, cultivate emotional ties and form new relationships (Lenhart, Purcell, Smith, & Zickuhr, 2010). The Internet may be useful for adolescents who are still learning to negotiate interactions with members of the same sex and the opposite sex (Subrahmanyam & Smahel, 2011). This context allows users to interact with a much larger number of people than they can offline and to remain in frequent contact with friends (Reich, Subrahmanyam, & Espinoza, 2012; Livingstone, 2008). Thus, teens can experience inclusion and support on the web where they may not find it in the offline world (Frison & Eggermont, 2015). Online anonymity decreases self-consciousness and social anxiety, making it easier for teens to form relationships (Greenfield, Gross, Subrahmanyam, Suzuki, Tynes, & Kraut, 2006; Mesch & Talmud, 2006). This may be especially true for romantic relationships (Subrahmanyam, Greenfield, & Tynes, 2004; Wolak, Michell, & Finkelhor, 2003). Smahel and Subrahmanyam (2007), analyzing

over 12,000 utterances in chat rooms, found out that the search for partners is ubiquitous in adolescents' online haunts, just as it is in their offline lives, especially for older adolescents.

Research suggests that Internet use has large positive effects on teens' peer relationships (Valkenburg & Peter, 2009a). For example, Italian adolescents with a rich social life spent more time on the Internet, used the Internet to make or maintain friends, communicate feelings and emotions more than adolescents with a poorer social life (Baiocco, Laghi, Carotenuto, & Del Miglio, 2011). Similarly, social media involving direct interactions (such as instant messaging) increased adolescents' intimacy, trust and communication with their best friends one year later (Blais, Craig, Pepler, & Connoly, 2008). However, this same study also found that less social activities or use of anonymous platforms (such as chat rooms) were related with increased alienation and conflict and decreased intimacy over time in relationships with peers and romantic partners.

The Internet may also serve as a context in which the developmental process of separation-individuation and the renegotiation of parental relationships takes place. However, only a few studies have focused on this issue. While adolescents express their autonomy online by making their own choices about their activities and engaging in private communications with others, parents want to protect children from online dangers and excessive Internet use that can interfere with offline life (Rosen, Cheever, & Carrier, 2008; Sorbring, 2014; Turow & Nir, 2000). A study has shown that two-third of adolescents (12 to 19 years old) hide their online activities from their parents (Livingstone, 2009). Shared Internet experience and dropping in on the teenager when she or he is using the Internet have been recommended as strategies for decreasing teenagers' undesirable experiences (Cho & Cheon, 2005). Although almost half of parents allow their children to access the Internet in their bedrooms, only a quarter place limits on Internet use (Rosen et al., 2008). In a recent study Liu, Yin, and Huang (2013) clarified that excessive Facebook use weakens teens' relationships with parents. However, a combination of affection, support, and control is associated with less negative experiences on the Internet for teens (Rosen et al., 2008) and

decreased risk for adolescents' Internet addiction (Yang, Lu, Wang, & Zhao, 2014; Li, Dang, Zhang, Zhang, & Guo, 2014). Moreover, family communication, parental monitoring of teen behavior, and family cohesion have protective roles against Internet addiction (Park, Kim, & Cho, 2008; Lin, Lin, & Wu, 2009). Unfortunately, the bulk of research on this topic has examined parents' perspectives rather than adolescents' perspectives.

2.2 The research model

The present study starts from the theoretical framework that defines development as "action in context" (Silbereisen, Eyferth, & Rudinger, 1986). In this perspective, individual development is the result of adolescents' intentional and goal oriented behaviors, in a specific context that offers both limits and opportunities. The specific functions of behaviors are often focused on the different developmental tasks typical of each stage of human development (Bonino, Cattelino, & Ciairano, 2005). Achieving these tasks is critical for health and adaptation at each stage, and enables the individual to move on to new goals in the next stage. In this theoretical framework, we assume that the use of the Internet, such as other healthy or risky behaviors, may help adolescents to reach developmental tasks typical of this period of life. Most of the studies reviewed above have yielded valuable insight regarding how the Internet is used by adolescents and how it might primarily affect the development of their identity (self-concept clarity and self-esteem), intimacy (formation of friendships and quality of existing friendships) and sexuality (sexual self-exploration) (Valkenburg & Peter, 2011). Little is known about the adolescents' perspective on how the Internet use might be a support for the achievement of the most important developmental tasks, relationships with parents included. The main goal of this study is to explore adolescents' opinions about how Internet use may support them in the achievement of those developmental tasks identified as fundamental from a developmental perspective. In line with literature reviewed on this topic, we expect that the use of the Internet may have different functions that help adolescents to form identities and redefine relationships with adults and peers. The present study has three aims: (1) to identify the functions of

Internet use focused on developmental tasks from adolescents' perspectives (by a qualitative content analysis of focus group interviews); (2) to identify the most common and relevant ways by which Internet use may support the achievement of the developmental tasks (counting the sentences attributed to categories emerged with content analysis); (3) to evaluate possible gender or age differences (counting the sentences referred by girls and boys, and by middle and high school students, attributed to different categories).

3. Methods

3.1 Participants

Participants were 127 adolescents (65 boys and 62 girls), ranging between 12 to 20 years old (M = 14.67 SD = 1.97), attending middle schools (74 students of 8th grade, 58% of participants) and high schools (53 students of 10th and 12th grade, respectively 20% and 22% of participants) in the province of Turin (Northwest of Italy). In line with the aims of the study, rational sampling was used. The sample was non-random and non-representative, but balanced according to several properties considered relevant for the study of Internet use in adolescence: the gender, the grade and the type of school attended by the participants. Volunteers from each school participated in focus group interviews; when more than the necessary number of students volunteered, participants were selected at random. Subjects were selected to arrange focus groups similar in age (participants of the same grade) and gender composition (half boys and half girls).

3.2 Instruments development

Data were collected in13 focus groups composed of 6-11 mixed-gender middle or high school students from 5 schools in Northwestern Italy. Informed consent was obtained from parents and teens. Seven focus groups were conducted in seven classes of two different middle schools (8th grade) and six focus groups were conducted in six classes of three different high schools (lyceum, technical school and professional school; three with adolescents in 10thgrade, three with adolescents

in 12th grade). Prior to focus groups, participants completed a short questionnaire assessing demographic information, presence of a computer at home, and Internet use habits.

Semi-structured interview questions were designed to facilitate discussion and elicit contributions from each participant. The guideline for the interview was based on the questioning route method (Krueger & Casey, 2009), creating a logical sequence of questions for in-depth analysis of the following subjects: (1) activities that adolescents usually practice on the Internet; (2) reasons why adolescents surf the Internet; (3) risks linked to Internet use; (4) characteristics of adolescents who spend a lot of time on the Internet; (5) gender differences in Internet use; and (6) parental opinions and rules about the Internet use. This paper analyzed specifically the data relevant to the functions of adolescents' Internet use focused on the achievement of developmental tasks. These functions were identified by asking the participants the following questions: (1) In your opinion, why do adolescents surf the Internet? (2) In your opinion, do boys and girls make different use of the Internet? (3) What about your parents' opinions and rules concerning Internet use? We included textual responses to the latter question because they were relevant for the topic of our study.

Focus groups were conducted by trained researchers (one conductor and one observer for each group) in classrooms during school hours, in the absence of teachers. Focus groups lasted from1 to 1.5 hours, and were audio recorded. Before starting, the conductor briefly explained the purpose of the research and emphasized that there are no right or wrong answers to the questions. Teens were also told that the session would be audio recorded but participation was confidential, and that the observer was there to take additional notes.

3.3 Data Analysis

In order to identify Internet use functions linked to adolescents' developmental tasks, focus group recordings were fully transcribed and subjected to qualitative deductive content analysis. The parts of the text submitted to content analysis (defined as content units) are formed by participants'

answers to three questions of the focus groups interview: (1) reasons why adolescents surf the Internet; (2) gender differences in Internet use; and (3) parental opinions and rules about Internet use. Participants' sentences were used as units of analysis. The content analysis was performed using the five-stage framework approach (Krueger & Casey, 2009; Ritchie & Lewis, 2003).

First, transcripts were read to become familiar with how participants expressed themselves and with the range of expressed reasons and functions of Internet use; all sentences concerning the functions of Internet use were identified independently by two researchers. Agreement between coders on sentence classification was higher than 75%. The disagreements were discussed and resolved with the collaboration of a third researcher. Finally selected sentences were 1313. Second, the two researchers created a list of categories by which all responses have been categorized. Each category identified a specific function of Internet use with reference to the achievement of developmental tasks. This resulted in 19 categories and 10 subcategories. Based on the literature concerning developmental tasks in adolescence, the 19 categories were grouped into three main categories that corresponded to different developmental tasks: (1) identity exploration; (2) development of autonomy; and (3) formation of close relationships with peers. Third, a coding manual was created and sentences representing each of the categories were coded by two independent coders (unaware of the aims of the study) using the manual. To validate the categories, inter-rater agreement between coders was calculated using Cohen's *k* index. The agreement for the main categories was high (k=.969) and all the values of agreement for categories and subcategories were higher than .77. A third judge resolved the disagreements. Fourth, data from each of the thirteen focus groups were converged. Fifth, developmental task categories were defined and clarified.

After the coding of the 1313 sentences, the number of sentences in each category (frequency), the number of people stating sentences in each category (extensiveness), and the number of focus groups with sentences coded in each category were computed (Krueger & Casey, 2009). This allowed us to better understand adolescents' opinions on the relevance of Internet use

for different developmental tasks. Moreover, extensiveness scores for each gender and school level were also computed and Chi-square analyses were performed in order to analyze possible gender and age differences.

4. Results

4.1 Description of the main characteristics of participants' Internet use

A pre-group questionnaire was used to assess the main characteristics of participants' Internet use. 95% of participants have a personal computer at home and 66% surf the Internet every day, 15% twice or three times a week, 5% once a week and 14% from less than once a month to once a month. High school students surfed the Internet more often than middle school students, $\chi^2(4, N = 119) = 15.36$, $p < .01$. There were no significant gender differences in frequency of Internet use, $\chi^2(5, N = 119) = 2.732$, $p = .741$. Only 11% of participants surfed the Internet for less than an hour each time, while 52% surfed the Internet for 1 or two hours each time, and 30% surfed from 3 to 6 or more hours each time. There were no significant differences in duration of Internet use based on school grade, χ^2 (4, N = 115) = 1.65, $p = .89$, or on gender, χ^2 (5, N = 115) = 8.794, $p = .115$.

4.2 Can the Internet be used to face developmental tasks?

Based on content analysis, in adolescents' opinions the Internet is used to face three major developmental tasks: (1) identity exploration; (2) development of autonomy; and (3) formation of close relationships with peers. Almost all adolescents (90%; 53% of statements) spoke of topics related to identity formation. The other statements fell in the area of the Autonomy (25% of statements) and Formation of close relationships with peers (21% of statements). There were no significant differences based on gender or school level. See Table 1.

Insert Table 1

4.3 The Internet and the Formation of Identity

Content analysis showed that in adolescents' opinions, the Internet supports the redefinition of their identity in different ways. Adolescents' statements about Identity Formation (k = .910) were categorized in 9 categories: (1) Developing Independent Thinking: Cultivating personal interests or staying informed; (2) Identification/Differentiation (k = .974): Identifying themselves with or differentiating themselves from people who have certain characteristics; could be based on gender, age, or others' ways of behaving or thinking; (3) Fun: Using the Internet for a feeling of enjoyment, fun, or pleasure; (4) Appearances/Disclosures: Revealing aspects or desired aspects of the self; (5) Autonomy: Making independent choices and deciding for themselves; (6) Identity Experimentation: Presenting and managing new or alternative identities; (7) Exploration and Sensation Seeking: Exploring new content and sensations; (8) Body Image: Changing physical appearance, removing perceived defects; (9) Coping: Attempts to reduce negative emotions, including boredom.

The number of statements in each subgroup of identity formation is presented in Tables 2 and 3. The largest number of statements fell into the subgroup Developing Independent Thinking. Such statements were made by the majority of participants and in all focus groups.

Insert Table 2

Insert Table 3

Statements focused on Developing Independent Thinking illustrated use of the Internet to explore interests and develop expertise in areas of interest. No significant differences based on school level or gender were observed. Example comments are provided below:

"For personal interest, when I'm curious about something I look it up on the Internet" (female, 12th grade, lyceum)

"I like to stay up to date on technology, like cell phones, videogames, so I like to look at the news stuff" (male, 10th grade, lyceum)

"I like to go on Wikipedia to know things about bands, music, cinema, movies and such" (female, 8th grade, middle school)

Statements related to Identification/Differentiation were also common. This issue emerged in all focus groups, with no significant differences in gender or level of school attended. Among the types of Identification/Differentiation, the most frequent type was gender identification/differentiation. Boys and girls indicated using the Internet to develop gender-specific interests. Although boys were more interested in playing games and following sports, the girls showed greater interest in fashion, make-up, celebrities (singers and actors), the modification of photos through special software, and communicating through chat. Statements referred to the behavior of teens of their own gender and the other gender. There were no significant differences in statements based on gender, but middle school teens made more of them than high school students (table 3). To a lesser extent, statements were also made about Identification/Differentiation based on age.

Below are some examples.

> *"Usually the guys like to look at soccer videos, the girls like to put on make-up, for example" (female, 10th grade, lyceum) [identification-differentiation based on gender]*
>
> *"When I was fourteen I used mostly for playing, and now not so much, because I used it for other things than playing games" (male, 12th grade, technical school) [identification-differentiation based on age]*

Several statements were also made regarding the Fun aspect of Identity Formation. Fun allows adolescents to gauge themselves, test skills and have positive feelings. Statements were made by 50% of the sample and in almost all focus groups (12 out of 13). Boys referred to this dimension of Internet use more than girls (table 3). For example, one 8th grade boy stated *"I play a game in which we are warriors in medieval times …"*

Other subtopics related to Identity Formation were also observed, but statements were much less common than others. Some teens mentioned the way the Internet was used to present a desirable appearance, such as a 12th grade girl who said that girls "*compete in showing who shows more skin.*" Other teens mentioned that they used the Internet in ways that they can exercise their decision-making autonomy, such as a 10th grade boy who used the Internet to select a hotel for his

summer vacation. Some teens used the Internet to experiment with new identities, such as creating multiple profiles on social networks, creating an avatar with specific features, or showing a different identity compared to their own (39 sentences emerged, however, in almost all focus groups). Finally, a small number of statements referred to Internet use in order to explore and seek sensations, to define adolescents' body image, for example changing the description of themselves or posting untruthful photographs, and to cope with negative emotions, including boredom.

4.4 The Internet and the Development of Autonomy

Content analysis showed that, in adolescents' opinions, the Internet supports the development of their autonomy through the redefinition of the relationships with parents in different ways. Adolescents' statements about Development of Autonomy (k = .861) were categorized in 4 categories: (1) Conflict with parents (k = .770): Includes conflict related to parental worry about dangers of Internet, conflict related to transgression of Internet use rules, and conflict related to generation gaps; (2) Shared time (k = .961): Spending time with parents, including negotiation of Internet use rules and sharing activities or topics about the Internet with parents; (3) Internet as Own Space (k = .852): Includes total absence of parental control and parental permissiveness based on trust of the adolescent; (4) Differentiation from Parents: Differentiating ones identity from parents based on Internet use.

Overall, 25% of statements applied to the goal of developing autonomy, and such statements were made by 78% of participants and in all focus groups. Table 4 shows how these statements fell into the four subcategories of Development of Autonomy. No gender differences emerged (Table 5). There were few statements indicating that the Internet was a tool to differentiate oneself from parents, so this subtopic will not be discussed further.

Insert Table 4

The most common subgroup was Conflict with Parents. These conflicts centered around parental worry about risks associated with Internet use and transgressions of rules for Internet use.

Fewer statements about generational conflict were made, significantly more often among high school students. These were primarily focused on generational differences in beliefs about the value and purpose of Internet. Below there are some examples.

"But it bothers me that she doesn't trust me… I'm in my room, she has to barge in every ten minutes to see what I'm doing, so I just turn it off" (female, 10th grade, lyceum)

"Only thing is when (your mother or your father) they enter your room you change what you're doing to homework" (male, 10th grade, technical school)

"I usually get on when my mom isn't there so I can stay longer on, because according to my mom I can only stay on for 30 minutes" (female, 8th grade, middle school)

"They don't really like it because they say it wastes time" (male, 10th grade, technical school)

Insert Table 5

Several statements were also made about shared time on the Internet, primarily statements about jointly setting rules about Internet use. This may facilitate the development of more equal relationships with parents. For example, one 8th grade girl stated that "*Me and my parents set up an agreement because at one time I stayed on the computer for a very long time and I was going crazy and now I only stay for 2 hours."* Statements also supported shared use of the Internet. For example, one 10th grade boy said that *"Sometimes I stay with my dad on the computer to look at stuff together. So it's not just an individual thing, sometimes 'Oh dad, let's watch this video, let's look at this video together.'"*

Many statements referred to the Internet as a private space, not controlled by parents, in which teens can exercise their autonomy. In about half of cases, this space of autonomy was granted by parents that trust their children to be responsible in their Internet Use. For example, one 8th grade middle school girl stated that *"[My mother] leaves me alone and doesn't come ask me who's that? because she trusts me, she knows I wouldn't just talk to creeps."* In the other half of the cases, parents simply failed to exercise any control, perhaps because of a lack of knowledge about the

Internet, and so adolescents felt free to do what they want. As an example, one 8th grade male said "*I have no rules…."*

4.5 The Internet and Formation of Relationships with Peers

In line with the literature, content analysis showed that, in adolescents' opinions, the Internet supports the formation and maintenance of close relationships with peers in different ways. Adolescents' statements about Formation of Close Relationships with Peers (k = .845) were categorized in six categories: (1) Starting New Relationships: Meeting new people and making new friends; (2) Maintaining Relationships: Making plans with friends; (3) Communicating; (4) Maintaining Long Distance Relationships: Communicating with friends or relatives who are far away; (5) Establishing Romantic Relationships; (6) Peer Comparisons: Imitating or competing with peers.

Overall, 21% of the statements made in focus groups were relevant to the goal of forming and maintaining relationships with peers, 69% of participants made such statements, and statements were made in every focus group. No gender and school level differences were found. The number of statements made in each of the six subcategories for this goal is presented in Table 6. One of the more common subcategories was Starting New Relationships. One 8th grade male made a representative statement that some teens "*use Internet, MSN, Facebook only because they feel alone and they want to make friends" (male, 8th grade, middle school).* Other common subcategories were Maintaining Relationships and Communicating with friends. Consistent with hypotheses, many teens indicated that they use the Internet to chat with friends and plan activities. For example, one 10th grade boy indicated that "*We mostly use apps like messenger to talk to friends, to meet and find out what to do"* and an 8th grade girl said that she uses the Internet "*to keep in contact with classmates and friends"* Relatively few statements regarding maintaining long distance relationships, establishing romantic relationships, or peer comparisons were made.

Insert Table 6

5. Discussion and conclusion

The aim of this research was to explore adolescents' opinions about how the Internet can be used to achieve developmental tasks. Results suggest that half of the goal-related statements focused on identity formation. All focus groups also mentioned autonomy and formation of meaningful relationships with peers. We noted few significant differences based on adolescent gender or school level. Boys did use the Internet for fun more than girls, and high school students mentioned generation-related conflict with parents more than middle school students. However, given the large number of statistical comparisons, great caution should be taken in interpreting the observed differences.

Half of the goal-related statements focused on identity formation. The Internet may provide an important context for identity exploration in addition to other significant contexts, such as school, family and peer groups. Although many sentences pertained to identity formation, few of them referred to adolescents taking on alternative identities such as possible or ideal selves. This result is consistent with some studies (Gross, 2004) in which only a minority of teens reported motivations for pretending to be someone else as part of their identity exploration. Although some youth do pretend to be someone else online, they do not do so frequently (Valkenburg et al., 2005). Adolescents in our study indicated that they feel negatively about people who alter photos or lie about their appearance.

The role of the Internet in identity formation, according to our results, seems to be allowing teens to develop their own interests and obtain information. This result is in line with results of previous studies (Lin & Yu, 2008). As one example, some adolescent boys talked about the Internet as a place for them to follow sports. The Internet provides easy access to professional and amateur commentary on sports, videos of athletic events and interviews of coaches and athletes, and statistics about teams and athletes. Visiting websites that provide this content may help these boys become knowledgeable experts, and expertise can be an important part of identity. Because the

range of content available on the Internet is so wide, teens can pursue interests and expertise that otherwise would not be possible.

Further, teens' comments revealed that the Internet is a medium through which they can identify with others and, at the same time, differentiate from others. Although many studies suggest that Facebook or Twitter provide opportunities to identify with similar others (Pembek, Yermolayeva, & Calvert, 2009; Zhao, Grasmuck, & Martin, 2008), differentiation from dissimilar others has rarely been considered in adolescent Internet use. Teens reported stereotypical gender differences in their processes of identification and differentiation through Internet use. Several comments indicated that boys spend more time focusing on sports, while females spend their time on the Internet in social interaction and investigating topics like fashion and makeup. This result is particularly interesting because it is inconsistent with some national and international studies (Istat, 2013; Gross, 2004) that do not show significant gender differences in Internet use. Perhaps, the reason for the discrepant findings is that the current study focused on adolescent perceptions about Internet use rather than an empirical description of how Italian teens are in fact using the Internet and stereotypical gender roles are particularly pronounced in Italian culture.

Although previous studies have found boredom evasion or "empty time" as prevalent personal motive of going online, voicing an adolescent-typical need to maintain continuous excitement-action (Tzavela et al., 2015; Lee & Sun, 2009), in our focus groups only few adolescents indicated that function. Perhaps, this opposing result is due to the features of participants included in the research. Using Internet to escape boredom or to cope with negative feelings is more common among addicted users.

In line with previous findings (Tzavela et al. 2015; Valkenburg & Peter, 2009a), the majority of participants and all focus groups made comments about the role of the Internet for formation of close relationships with peers. Adolescents reported that they used the Internet to interact with friends, acquaintances and strangers alike, to communicate about everyday issues,

such as friends and gossip, and to make plans with friends. In support of the social compensation hypothesis (Shneider & Amichai-Hamburger, 2009; Laghi et al., 2013; Wang, Jackson & Zhang, 2011), some teens reported that online communication is particularly useful for shy and socially anxious adolescents. At the same time, they also reported that online communication is very widespread among teens and it helps them to be more confident in their social skills in offline relationships. This finding is in line with the rich-get-richer hypothesis that suggests that extroverted individuals, comfortable in face-to-face social situations, use the computer and Internet to further their social opportunities (Shneider & Amichai-Hamburger, 2009), and establish close friendships (Koutamanis et al., 2013; Lee, 2009). Although other studies have emphasized that teens search for partners more freely and frequently in a virtual environment than it is possible in the "real" world (Smahel & Subrahmanyam, 2007), only a small percentage of the participants in our study mentioned this function of the Internet. Thus, Italian teens may see the Internet more as a way to maintain relationships or creating new friendships rather than searching for romantic partners. As previously suggested, adolescents satisfy belonging and intimacy needs online (Davis, 2012) and reduce "friendsickness" (Lee & Sun, 2009), when physical distance and limited time hindered communication (e.g. Ellison, Steinfield, & Lampe, 2007).

Most participants' sentences in all focus groups referred to ways that Internet use promoted autonomy. In the focus groups, teens reported a wide range of ways in which their Internet use affects their relationships with their parents, an issue that has rarely been explored in research. In many cases, adolescents reported conflicts with parents about the use of the Internet. There were two primary reasons for these disagreements. First, there are parents' concerns, not shared by their children, about the risks associated with Internet use. These concerns included the danger of meetings with unknown people, exposure to dangerous websites or inappropriate content, and spending so much time online that it adversely affects well-being. These concerns are common in

parents (Sorbring, 2014). In response to these concerns, teens reported that parents engaged in behavior they perceived as intrusive. For example, teens might say that their parents would check on them "every five minutes," ask "too many" questions, and even covertly monitor what the teen is doing online. It is clear from these comments that teens see their Internet use as private and as an autonomous behavior.

Disagreements are also due to parental rules on Internet use, and teens breaking those rules. Two thirds of parents and two thirds of teenagers aged 12 to 17 years say that teenagers do things on the Internet that they do not want their parents to know about (Lenhart, 2005). Similarly, 65% of European adolescents aged 12 to 19 years reported that they had tried to hide their Internet activities from their parents (Livingstone & Bober, 2005). Many of the participants of this study have reported transgressions of parental rules for Internet use, including time limits. They evade rules by surfing the Internet in the absence of parents, having books on their desk to make it easy to disguise their Internet use, and minimizing windows open on their computer when parents enter their rooms. These transgressions may serve to assert or test the limits of their autonomy (Bonino et al., 2005).

However, teens also reported that the Internet is a meeting ground with their parents. This topic has rarely been studied. Many teens report negotiating rules about Internet use with their parents. The ability to negotiate rules marks a major transition in the parent-child relationship and is key to the development of autonomy. Teens also reported that they spend time with their parents on the Internet, surfing the Internet together, sharing activities or information, organizing trips or buying tickets for activities to do together (for a soccer game or a performance of a play). Something unique about the Internet is that it can be a context for role reversal: teens help parents use the Internet. For example, one teen reported helping parents buy tickets online for the theater or the cinema. With the Internet, teens can show their parents their skills, be helpful, take

responsibility, and feel competent. This can elevate the status of the adolescent in the family, gaining them autonomy.

Overall, these findings underline that the Internet has implied qualitative changes in family functioning, creating new interaction scenarios and rearranging current family relational patterns (Carvalho, Francisco, & Relvas, 2015).

Findings should be interpreted in light of study limitations. As is the case with all focus group research, there was a relatively small sample size from one geographic area. Further, interpretation is limited to adolescent opinions. Additional research is needed to determine whether adolescents who make use of the Internet in goal-related ways demonstrate success in achieving their developmental goals. Finally, this study was cross-sectional, and it is not possible to interpret findings in terms of causation. Only a longitudinal design can fully establish the impact of the teens' online activities on the resolution of developmental tasks, whether the impact of Internet use changes across child age, and establish the processes underlying the impact of Internet use on adolescent development.

This study has theoretical and practical implications. First, it suggests that different features of the Internet can be used by adolescents to address offline developmental tasks. For this reason, when investigating the relationship between adolescents' Internet use and developmental tasks, research must go beyond access rates to examine social conditions, cultural practices and personal meanings. Researchers should consider that adolescents' uses of the Internet reflect their developmental needs. These findings highlight the importance of the Internet as an integral part of the social context and the necessity for developmental researchers to systematically include the Internet as a contextual factor when studying adolescents' developmental tasks.

Furthermore, this study points out that adolescents' use of the Internet is often a matter of parent-adolescent conflict. It would be interesting find out how parental knowledge of the Internet may affect the quality of relationships with teens and, at the same time, explore parent-child conflict about Internet use. Are they different from or similar to other conflicts in other areas of adolescents'

lives? More research is necessary to answer these questions. Moreover, it would be interesting to investigate in future research the connection between key aspects of parent-teen relationships emerging from this qualitative study, such as parents' concerns about the Internet, communication and sharing, parental control, and different ways of using the Internet (eg. "safer" or "riskier" use). Such studies might improve understanding of which characteristics of parent-teen relationships may protect against the risks otherwise related to Internet use. From a methodological point of view, future research should collect data from parents and children.

Our results are also relevant to parents, teachers, and others who are concerned about the well-being of adolescents. In line with other studies, we found that teenagers are more likely to help their parents with computers than parents are to help their children, and some have hypothesized that the equality in online communications among computer users of all ages tends to destroy authority structures (Subrahmanyam, Kraut, Greenfield, & Gross, 2000). To avoid that, parents and educators should be open to the many possibilities that social media and online networking can open up to teens. The importance of information and communication technologies for the construction of a knowledgeable society has recently been underlined (Lytras & Ordonez de Pablos, 2011). The technological revolution widely impacted not only in different spheres of society, but also on individual life (Zhao & Ordonez de Pablos, 2011). Teens can experiment with new types of creativity on content sharing, learn how to problem solve and deal with conflicting situations in virtual worlds, understand new and changing methods of communicating, and explore aspects of themselves and their lives that the offline world might not allow (Lusk, 2010). Parents and educators have to be involved in teaching youth conscientious Internet use, and, at the same time, to maintain a respectful presence online to avoid any harm to their future.

In conclusion, to our knowledge, this is the first qualitative study focused on adolescents' opinions about how the Internet may affect the achievement of developmental tasks. Findings indicated that teen Internet use occurs in ways that are relevant to the goals of adolescence, and that the conceptual framework of developmental goals may be helpful for understanding how the

Internet can affect the lives of adolescents. Family relationships may benefit from this new medium of communication in so far as parents recognize adolescents' needs of growth and development, and use the Internet as a place in which they can spend time with their children. This study suggests a close complementarity across social contexts, in line with the notion that adolescents' online and offline networks overlap, and adolescents use online spaces to satisfy developmental needs.

References

Adams, G. R., & Berzonsky, M. (Eds.). (2008). *Blackwell handbook of adolescence* (Vol. 8). John Wiley & Sons.

Baiocco, R., Laghi, F., Carotenuto, M., & Del Miglio, C. (2011). Amicizia on-line: Disimpegno o stimolazione? *Psicologia clinica dello sviluppo*, *5*(29), 335-352.

Barker, V. (2009). Older adolescents' motivations for social network site use: The influence of gender, group identity, and collective self-esteem. *CyberPsychology & Behavior*, *12* (2), 209-213.

Best, P., Manktelow, R., & Taylor, B. (2014). Online communication, social media and adolescent wellbeing: a systematic narrative review. *Children and Youth Services Review*, *41*, 27-36.

Blais, J., Craig, W., Pepler, D., & Connoly, J. (2008). Adolescents online: The importance of Internet activity choices to salient relationships. *Journal of Youth and Adolescence*, *37*, 522-536.

Bonino, S., Cattelino, E., & Ciairano, S., (2005). *Adolescents and risk. Behaviors, functions and protective factors*. Berlin, New York: Springer-Verlag.

Bosma, H. A., & Kunnen, E. S. (2001). Determinants and mechanisms in ego identity development: A review and synthesis. *Developmental Review*, *21*(1), 39-66.

Calvert, S. L. (2002). Identity construction on the Internet. In S. L. Calvert, A. B. Jordan, & R. R. Cocking (Eds.), *Children in the digital age: Influences of electronic media on development* (pp. 57–70). Westport: Praeger Publishers/Greenwood Publishing Group.

Carvalho, J., Francisco, R., & Relvas, A.P. (2015). Family functioning and information and communication technologies: How do they relate? A literature review. *Computers in Human Behavior*, *45*, 99-108.

Chen, S. Y., & Fu, Y. C. (2009). Internet use and academic achievement: Gender differences in early adolescence. *Adolescence, 44*(176), 797-812.

Cho, C-H., & Cheon, H. J. (2005). Children's exposure to negative Internet contact: Effects of family context. *Journal of Broadcasting & Electronic Media*, *49*, 488-510.

Christie, D., & Viner, R. (2005). ABC of adolescence: Adolescence development. *British Medical Journal*, *330*, 301-304.

Davis, K. (2012). Friendship 2.0: Adolescents experiences of belonging and self-disclosure online. *Journal of Adolescence*, *36*(6), 1527-1536.

Desjarlais, M., & Willoughby, T. (2010). A longitudinal study of the relation between adolescent boys and girls' computer use with friends and friendship quality: Support for the social compensation or the rich-get-richer hypothesis? *Computers in Human Behavior, 26(5)*, 896-905.

Ellison, N.B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook "friends": social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, *12*(4), 1143-1168.

Fogel, J., & Nehmad, E. (2009). Internet social network communities: Risk taking, trust, and privacy concerns. *Computers in Human Behaviour*, *25*(1), 153-160.

Frison, E., & Eggermont, S. (2015). The impact of daily stress on adolescents' depressed mood: The role of social support seeking through Facebook. *Computers in Human Behavior*, *44*, 315-325.

García-Martín, J., & García-Sánchez, J. N. (2015). Use of Facebook, Tuenti, Twitter and Myspace among young Spanish people. *Behaviour & Information Technology*, (ahead-of-print), 1-19.

Greenfield, P. M., & Subrahmanyam, K. (2003). Online discourse in a teen chatroom: New codes and new modes of coherence in a visual medium. *Journal of Applied Developmental Psychology*, *24*, 713–738.

Greenfield, P. M., Gross, E. F., Subrahmanyam, K., Suzuki, L. K., Tynes, B., & Kraut, R. (2006). Teens on the Internet: Interpersonal connection, identity, and information. *Information technology at home*, 185-200.

Gross, E. F. (2004). Adolescent Internet use: What we expect, what teens report. *Journal of Developmental Psychology*, *25*(6), 633–649.

Havighurst, R. J. (1972). *Developmental tasks and education*. (3rd Ed.). NewYork: David Mckay Company.

Hellström, C., Nilsson, K.W., Leppert, J. & Åslund, C. (2012). Influences of motives to play and time spent gaming on the negative consequences of adolescent online computer gaming. *Computers in Human Behavior*, *28*(4), 1379–1387.

Israelashvili, M.K., & Bukobza, , G. (2012). Adolescents' over-use of the cyber world-Internet addiction or identity exploration? *Journal of Adolescence*, *35*(2), 417-424.

Istat (2013). Report Cittadini e nuove tecnologie. Retrieved from the Istat website: http://www.istat.it/it/archivio/108009.

Jackson, L.A., von Eye, A., Fitzgerald, H.E., Zhao, Y., & Witt, E.A. (2010). Self-concept, self-esteem, gender, race and information technology use. *Computers in Human Behavior*, *26*(3), 323–328.

Kirchler, E., Palmonari, A., & Pombeni, M. L. (1993). Developmental tasks and adolescents' relationships with their peers and their family. In S. Jackson & H. Rodriguez-Tomé (Ed.), *Adolescence and its social words* (pp.145-167). Hove, UK: Lawrence Erlbaum.

Koutamanis, M., Vossen, H.G.M., Peter, J., & Valkenburg, P. (2013). Practice makes perfect: The longitudinal effect of adolescents' instant messaging on their ability to initiate offline friendships. *Computers in Human Behavior, 29*, 2265-2272.

Krueger, R. A., & Casey, M. A. (2009). *Focus groups: A practical guide for applied research* (4th Ed.). Thousand Oaks: Sage Publications.

Laghi, F., Schneider, B. H., Vitoroulis, I., Coplan, R. J., Baiocco, R., Amichai-Hamburger, Y., ... & Flament, M. (2013). Knowing when not to use the Internet: Shyness and adolescents' on-line and off-line interactions with friends. *Computers in Human Behavior*, *29* (1), 51-57.

Lancini, M., & Turani, L. (2009). *Sempre in contatto*. Milano: Franco Angeli.

Lee, S.J. (2009). Online communication and adolescent social ties: Who benefits more from Internet use? *Journal of Computer-Mediated Communication*, *14*, 509-531.

Lee, Y., & Sun, Y. (2009). Using instant messaging to enhance the interpersonal relationships of Taiwanese adolescents: Evidence from quantile regression analysis. *Adolescence, 44*(173), 199-208.

Lenhart, A. (2005). *Protecting teens online.* Retrieved from the Pew Internet & American Life Project website: http://www.pewInternet.org/files/oldmedia/Files/Reports/2005/PIP_Filters_Report.pdf.pdf

Lenhart, A., & Madden, M. (2007). Social networking websites and teens: An overview. Retrieved from the Pew Internet & American Life Project website: http://www.pewInternet.org/2007/01/07/social-networking-websites-and-teens/.

Lenhart, A., Purcell, K., Smith, A., & Zickuhr, K. (2010). Social media & mobile Internet use among teens and young adults. Retrieved from the Pew Internet & American Life Project website: http://www.pewInternet.org/2010/02/03/social-media-and-young-adults/.

Li, C., Dang, J., Zhang, X., Zhang, Q., & Guo, J. (2014). Internet addiction among Chinese adolescents: The effect of parental behavior and self-control. *Computers in Human Behavior*, *41*, 1-7.

Lin, C. H., Lin, S. L., & Wu, C.P. (2009). The effects of parental monitoring and leisure boredom on adolescents' Internet addiction. *Adolescence*, *44*(176), 993-1004.

Lin, C.H., & Yu, S.F. (2008). Adolescent Internet usage in Taiwan: Exploring gender differences. *Adolescence*. *43* (170), 317-331.

Liu, S.H., Yin, M.C., & Huang, T.H. (2013). Adolescents' interpersonal relationships with friends, parents and teacher when using Facebook for interaction. *Creative Education*, *4*, 335-339.

Livingstone, S. (2008). Taking risky opportunities in youthful content creation: teenagers' use of social networking sites for intimacy, privacy and self-expression. *New Media & Society*, *10*(3), 393-411.

Livingstone, S. (2009). *Children and the Internet*. Cambridge: Polity.

Livingstone, S., & Bober, M. (2005). *UK children go online. Final report of key project findings.* Swindon: Economic & Social Research Council.

Lusk, B. (2010). Digital Natives and Social Media Behaviors: An Overview. *Prevention Researcher*, *17*(5), 3-6.

Lytras, M., & de Pablos, P. O. (2011). Software Technologies in Knowledge Society J. UCS Special Issue. *J. UCS (Journal of Universal Computer Science)*, *17*(9), 1219-1221.

Madden, M., Lenhart, A., Duggan, M., Cortesi, S., & Gasser, U. (2013). Teens and technology. Retrieved from the Pew Internet & American Life Project website: http://www.pewInternet.org/2013/03/13/teens-and-technology-2013/.

McKenna, K. Y. A., Green, A. S., & Gleason, M. E. J. (2002). Relationship formation on the Internet: What's the big attraction? *Journal of Social Issues*, *58* (1), 9-31.

Mesch, G., & Talmud, I. (2006). The quality of online and offline relationships: The role of multiplexity and duration of social relationships. *The Information Society*, *22*(3), 137-148.

Morahan-Martin, J., & Schumacher, P. (2003). Loneliness and social uses of the Internet. *Computers in Human Behavior*, *19(6)*, 659-671.

Oeldorf-Hirsch, A., & Sundar, S. S. (2015). Posting, commenting, and tagging: Effects of sharing news stories on Facebook. *Computers in Human Behavior*, *44*, 240-249.

Park, S. K., Kim, J., Y., & Cho, C. B. (2008). Prevalence of Internet addiction and correlations with family factors among South Korean adolescents. *Adolescence*, *43*(172), 895-909.

Pembek,T.A., Yermolayeva, Y.A., & Calvert, S.L. (2009). College students' social networking experiences on Facebook. *Journal of Applied Developmental Psychology*, *30*, 227-238.

Purcell, K. (2012). Teens 2012: Truth, trends, and myths about teen online behavior. Retrieved from the Pew Internet & American Life Project website: http://www.pewInternet.org/2012/07/11/teens-2012-truth-trends-and-myths-about-teen-online-behavior/

Raskauskas, J., & Stolz, A. D. (2007). Involvement in traditional and electronic bullying among adolescents. *Developmental Psychology*, *43*(3), 564-575.

Reich, S.M., Subrahmanyam, K., & Espinoza, G. (2012). Friending IMiging, and hanging out face-to-face: overlap in adolescents' online and offline social networks. *Developmental Psychology*, *48*(2), 356-368.

Rideout, V.J., Foehr, U.G., & Roberts, D.F. (2010). *Generation M2. Media in the Lives of 8-to 18-Year-Olds*. Menlo Park, CA: The Henry J. Kaiser Family Foundation.

Ritchie, J., & Lewis, J. (2003) (Eds.). *Qualitative research practice*. London: Sage.

Rosen, L. D., Cheever, N. A., & Carrier, L. M. (2008). The association of parenting style and child age with parental limit setting and adolescent MySpace behavior. *Journal of Applied Developmental Psychology, 29,* 459–471.

Rosen, L. D., Lim, A. F., Felt, J., Carrier, L. M., Cheever, N. A., Lara-Ruiz, J. M., ... & Rokkum, J. (2014). Media and technology use predicts ill-being among children, preteens and teenagers independent of the negative health impacts of exercise and eating habits. *Computers in Human Behavior, 35,* 364-375.

Sanders, C. E., Field, T. M., Diego, M., & Kaplan, M. (2000). The relationship of Internet use to depression and social isolation among adolescents. *Adolescence*, *35*(138), 237-242.

Schmitt, K. L., Dayanim, S., & Matthias, S. (2008). Personal homepage construction as an expression of social development. *Developmental Psychology*, *44*(2), 496-506.

Schneider, B.H., & Amichai-Hamburger, Y. (2009). Electronic communication: Escape mechanism of relationship-building tool for shy, withdrawn children and adolescents? In K.H. Rubin, & R.J. Coplan (Eds.), *The development of shyness and social withdrawal in childhood and adolescence* (pp. 236-261). New York: Guilford.

Silbereisen, R. K., Eyferth, K., & Rudinger, G. (Eds.) (1986). *Development as action in context: Problem behavior and normal youth development*. Heidelberg, New York: Springer.

Smahel, D., & Subrahmanyam, K. (2007). Any girls want to chat press 911: Partner selection in monitored and unmonitored teen chat rooms. *CyberPsychology and Behavior*, *10*, 346-353.

Sorbring, E. (2014). Parents' concern about their teenage children's Internet use. *Journal of Family Issues*, *35*(1), 75-96.

Steinberg, L. (2008). *Adolescence*. Boston: McGraw Hill.

Subrahmanyam, K., & Smahel, D. (2011). *Adolescents' digital worlds*. New York: Springer.

Subrahmanyam, K., Greenfield, P. M., & Tynes, B. (2004). Constructing sexuality and identity in an online teen chatroom. *Journal of Applied Developmental Psychology, 25,* 651-666.

Subrahmanyam, K., Kraut, R. E., Greenfield, P. M., & Gross, E. F. (2000). The impact of home computer use on children's activities and development. *Children and Computer Technology, 10*(2), 123-144.

Subrahmanyam, K., Smahel, D., & Greenfield, P. M. (2006). Connecting developmental constructions to the Internet: Identity presentation and sexual exploration in online teen chat rooms. *Developmental Psychology*, *42,* 395-406.

Suzuky, L. K., & Calzo, J. P. (2004). The search for peer advice in cyberspace: An examination of online teen bulletin boards about health and sexuality. *Journal of Applied Developmental Psychology, 25,* 685-698.

Tsitsika, A. K., Tzavela, E. C., Janikian, M., Ólafsson, K., Iordache, A., Schoenmakers, T. M., ... & Richardson, C. (2014). Online social networking in adolescence: patterns of use in six European countries and links with psychosocial functioning. *Journal of Adolescent Health*, *55*(1), 141-147.

Turow, J., & Nir, L. (2000). *The Internet and the family 2000: The view from parents, the view from kids*. Philadelphia: The Annenberg Public Policy Center of the University of Pennsylvania. Retrived from the wesite: http://www.annenbergpublicpolicycenter.org/downloads/information_and_society/20000516_Internet_and_family/20000516_Internet_and_family_report.pdf

Tzavela, E. C., Karakitsou, C., Dreier, M., Mavromati, F., Wölfling, K., Halapi, E., ... & Tsitsika, A. K. (2015). Processes discriminating adaptive and maladaptive Internet use among European adolescents highly engaged online. *Journal of Adolescence*, *40*, 34-47.

Utz, S. (2015). The function of self-disclosure on social network sites: Not only intimate, but also positive and entertaining self-disclosures increase the feeling of connection. *Computers in Human Behavior*, *45*, 1-10.

Valkenburg, P. M., & Peter, J. (2009a). Social consequences of the Internet for adolescents: A decade of research. *Current Directions in Psychological Science, 18*, 1-5.

Valkenburg, P. M., & Peter, J. (2009b). The effects of instant messaging on the quality of adolescents' existing friendships: A longitudinal study. *Journal of Communication*, *59*, 79-97.

Valkenburg, P. M., & Peter, J. (2011). Online communication among adolescents: An integrated model of its attraction, opportunities, and risks. *Journal of Adolescent Health*, *48*, 121-127.

Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *CyberPsychology & Behavior*, *9*, 584-590.

Valkenburg, P. M., Schouten, A. P., & Peter, J. (2005). Adolescents' identity experiments on the Internet. *New Media & Society*, *7*(3), 383-402.

Wainer, J., Dwyer, T., Silveira Dutra, R., Covic, A., Magalhães, V. B., Ribeiro Ferreira, L. R., … & Claudio, K. (2008). Too much computer and Internet use is bad for your grades, especially if you are young and poor: Results from the 2001 Brazilian SAEB, *51* (4), 1417-1429.

Wang, J.,L., Jackson, L.A., & Zhang, D.J. (2011). The mediator role of self-disclosure and moderator roles of gender and social anxiety in the relationship between Chinese adolescents' online communication and their real-world social relationships. *Computers in Human Behavior*, *27*, 2161-2168.

Wolak, J., Michell, K. J., & Finkelhor, M. D. (2003). Escaping or connecting? Characteristics of youth who form close online relationships. *Journal of Adolescence, 26*(1), 105-119

Yang, S., Lu, Y., Wang, B., & Zhao, L. (2014). The benefits and dangers of flow experience in high school students' Internet usage: The role of parental support. *Computers in Human Behavior*, *41*, 504-513.

Zhao, J., & de Pablos, P. O. (2011). Regional knowledge management: the perspective of management theory. *Behaviour & Information Technology*, *30*(1), 39-49.

Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behaviors*, *24*, 1816-1836.

Table 1

Frequency and Extensiveness of Comments Relevant to Developmental Goals

	Frequency	Extensiveness			
Goal		Total	Males	Females	Middle School	High School
	(N = 1313)	(N = 127)	(N = 62)	(N = 65)	(N = 74)	(N = 53)
Identity Formation	698 (53%)	114 (90%)	58 (93%)	56 (86%)	65 (88%)	49 (92%)
Autonomy	335 (25%)	99 (78%)	46 (74%)	53 (81%)	53 (72%)	46 (87%)
Forming Close Peer Relationships	278 (21%)	88 (69%)	41 (66%)	47 (72%)	49 (66%)	39 (74%)

Table 2

Statistics for Statements Relevant to Identity Formation.

SUBCATEGORIES	**FREQUENCY N = 1313**		**EXTENSIVENESS N = 127**		**FOCUS GROUPS N = 13**
	N	**%**	**N**	**%**	**N**
DevelopingIndependent Thinking	205	16%	83	65%	13
Identification/Differentiation (overall)	134	10%	66	52%	13
Linked to gender	84	6%	50	39%	13
Linkedto others	29	2%	19	15%	8
Linked to age	21	2%	15	12%	6
Fun	100	8%	63	50%	12
Appearances/Disclosures	71	5%	34	27%	9
Autonomy	55	4%	35	27%	9
Identity Experimentation	39	3%	24	19%	11
Exploration and SensationSeeking	34	3%	22	17%	10

Body Image	31	2%	18	14%	6
Coping	29	2%	20	16%	11

Table 3

Differences in Statements about Identity Formation Based on Gender and School Level

CATEGORIES	EXTENSIVENESS							
	GENDER				SCHOOL LEVEL			
	M (N = 65)		F (N = 62)		Middle (N = 74)		High (N = 53)	
	N	%	N	%	N	%	N	%
DevelopingIndependentThinking	40	61%	43	69%	49	66%	34	64%
Identification /Differentiation	30	46%	36	58%	40	54%	26	49%
Linked to gender	23	35%	27	43%	36*	49%	14*	26%
Linkedto others	18	28%	7	11%	9	12%	10	19%
Linked to age	15	23%	5	8%	2	3%	13	24%
Fun	44**	68%	19**	31%	38	51%	25	47%
Appearances/Disclosures	14	21%	20	32%	12	16%	22	41%
Autonomy	14	21%	21	34%	13	18%	22	41%
Identity Experimentation	11	17%	13	21%	11	15%	13	24%
Exploration and SensationSeeking	13	20%	9	14%	11	15%	11	21%
Body Image	10	15%	8	13%	7	9%	11	21%
Coping	9	14%	11	18%	8	11%	12	23%

*$\chi^2(1, N = 50) = 9.68, p < .01$; ** $\chi^2(1, N = 63) = 9.92, p < .01$

Table 4

Statistics for Statements Relevant to Development of Autonomy

CATEGORIES	FREQUENCY		EXTENSIVENESS		FOCUSGROUPS
	N = 1313		N = 127		N = 13
	N	%	N	%	N

Conflict with Parents (Overall)	146	11%	64	50%	13
Related to Parental Worryabout Risks	59	4%	34	27%	12
Related to Transgressionof Rules	57	4%	33	26%	12
Related to GenerationalGap	30	2%	21	16%	10
Shared Time(Overall)	91	7%	58	46%	13
Setting Rules Together	62	5%	45	35%	13
Sharing Activities and Interests	29	2%	23	18%	12
The Internet as Own Space (Overall)	88	7%	57	45%	13
OwnSpace	47	4%	34	27%	12
Absence of Parental Control	41	3%	31	24%	10
Differentiationfrom Parents	10	1%	10	8%	7

Table 5

Differences in Statements about Autonomy Based on Gender and School Level

CATEGORIES	**EXTENSIVENESS**							
	GENDER				**SCHOOL LEVEL**			
	M (N = 65)		**F (N = 62)**		**Middle (N = 74)**		**High (N = 53)**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Conflict with Parents (Overall)	28	43%	36	58%	34	46%	30	57%
Related to Parental Worry about Risks	14	21%	20	32%	18	24%	16	30%
Related to Transgression of Rules	14	21%	19	31%	19	26%	14	26%
Related to Generational Gap	8	12%	13	21%	5*	7%	16*	30%
Shared Time(Overall)	27	41%	31	50%	30	40%	28	53%
Setting Rules Together	24	37%	21	34%	25	34%	20	38%
Sharing Activities and Interests	8	12%	15	24%	9	12%	14	26%
The Internet as Own Space (Overall)	30	46%	27	43%	26	35%	31	58%
Own Space	14	21%	20	32%	2	3%	7	13%
Absence of Parental Control	18	28%	13	21%	14	19%	17	32%
Differentiation from Parents	3	5%	7	11%	6	8%	4	7%

*$\chi^2(1, N = 21) = 13.38, p < .001)$

Table 6

Statistics for Statements Relevant to Formation of Close Relationships.

CATEGORIES	FREQUENCY (N = 1313)		EXTENSIVENESS (N = 127)		FOCUSGROUPS (N = 13)
	N	%	N	%	N
Starting New Relationships	95	7%	51	40%	11
MaintainingRelationships	82	6%	49	39%	13
Communicating	60	5%	42	33%	13
Maintaining Long-Distance Friendships	18	1%	16	13%	9
Establishing Romantic Relationships	12	1%	11	9%	7
Peer Comparisons	11	1%	10	8%	7