Adolescents' Identity Experiments on the Internet and Problematic Internet Use Behavior[*]

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Abstract

This study investigates adolescents' identity experiments on the internet and reveals whether adolescents' levels of psychological needs, identity status, and sensation-seeking behavior and life satisfaction are significant predictors of problematic internet use. The study group consisted of 2729 students in public high schools in Eskisehir Province, Turkey. The data were collected through the following: Problematic Internet Use Scale–Adolescent, Basic Needs Inventory, Ego Identity Status Scale, Arnett Sensation Seeking Scale, Life Satisfaction Scale, and the Personal Information Form. Data analysis was conducted through descriptive statistics and hierarchical regression analysis. Research findings showed that a large number of adolescents (66.40% sometimes; 1.10% often) experimented with identity on the internet by pretending to be someone else. Adolescents often tended to act like a more intelligent or imaginary person. Overall, adolescents generally pretend to be a more intelligent, less shy, and imaginary character. In addition, adolescents often reported that they experiment with identity to get to know people easily and speak with people more easily. The regression analysis results showed that diffusion, moratorium, and achievement identity statuses, psychological needs for power and belonging, and sensation-seeking behavior and life-satisfaction levels are important predictors of problematic internet use, with these variables explaining 20% of the total variance.

Keywords: Problematic internet use • Internet addiction • Psychological needs • Identity status • Sensation seeking • Life satisfaction

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In recent years, the number of internet users has increased remarkably. The age range and time spent on the internet have also changed dramatically. According to a Turkey Statistical Institute study (2014) conducted on the age group 16–74, the largest group of internet users is 16–24, i.e., 73% of total users. Therefore, in Turkey, the internet is heavily used by adolescents and young adults. Researchers talk about various positive effects of the internet on the development of children, adolescents, and young adults, such as promoting academic success by facilitating access to information (Tuncer, 2001) and computer games supporting their cognitive development (Subrahmanyam, Smahel, & Greenfield, 2006). In addition, strengthening relationships, making it easy for an individual to get to know about new friends' backgrounds, reducing social anxiety, and providing social support (Subrahmanyam & Greenfield, 2008) are also considered positive aspects of the internet. Thus, adolescents learn to communicate with many different people, thanks to the internet, and transfer these experiences to their real lives, thus developing social competence (Huffaker, 2006).

Besides these contributions, many researchers have expressed some negative effects of the internet on individuals. In this context, when the interaction with schoolmates, family, and friends that is necessary for the child's development is replaced with electronic friendships, the child's interpersonal relationship skills can be negatively affected (Caplan, 2002). In addition, internet use increases the risk of exposure to verbal or sexual harassment and racist and hateful messages (Subrahmanyam & Greenfield, 2008). These consequences reveal the importance and necessity of educating adolescents and young people to be healthy internet users.

Prolonged and uncontrolled internet use can lead to unhealthy internet use. *Problematic internet use* is a concept concerning unhealthy access that involves obsessive thoughts about the internet, a decrease in tolerance and impulse control, and psychological, social, and cognitive difficulties resulting from the inability to stop using the internet (Caplan, 2002; Davis, 2001). Problematic internet use is a type of impulse control disorder and is generally described as discomfort and functional impairment due to the inability to control internet use (Shapira et al., 2000). There is a linear relationship between problematic internet use and depression, social isolation, loneliness, and a decrease in home/school/work performance (Caplan, 2002).

Because adolescence is a period of accelerated personality development and psychological maturation, adolescent individuals are more vulnerable to harmful effects of addictive agents (Kaltiala-Heino et al., 2004). In addition, adolescents' high internet use rate (Kaltial-Heino et al., 2004; Türkiye İstatistik Kurumu, 2014) and developmental characteristics form a huge potential risk group. Researchers state that despite the internet being a necessity of our time and contributing significantly and positively to adolescents' lives, it can pose a significant threat (E. Ceyhan, 2008) because adolescents are more vulnerable to the effects of online relationships, online exploitation, and other possible adverse effects of cyber relationships (Wolak, Mitchell, & Finkelhor, 2003).

In general, adolescents tend to engage intensely in identity experiments, sensation seeking, and risky behavior. They display psychological needs such as belonging, power, freedom, and entertainment. Their attempts to fulfill these needs can, of course, be displayed in real life as well as in a virtual internet environment. The anonymity, accessibility, diversity, and freedom provided by the internet can lead to unhealthy use for some adolescents by causing them to spend more time in virtual environments, thereby neglecting their real lives. In particular, students who display decreased interest in real-life activities or those who cannot find time for extracurricular activities, and students with disrupted real-life relationships and floundering professional/academic lives are observed to have a higher risk of internet addiction (Colwell & Payne, 2000). Thus, for such people, internet use can transform from a facilitating, enhancing habit into a dysfunctional, debilitating one.

In Turkey, adolescents' internet habits and problematic use have been analyzed in terms of different variables. Research on adolescents' internet use includes the following areas: interactive communication tools usage habits (Aktas-Arnas, 2005), the purpose and impact of use (Altın, 2006), the relationship between internet use and academic achievement (Altuğ, Ersöz, & Gencer, 2011), the socialization impact of the internet according to teachers' views (Arslan-Cansever, 2009), motives for internet use (A. Ceyhan, 2011a), and the relationship between exercise and attitude towards the internet (Kayıkçı, 2007). The research also reveals parents' views about internet use and addiction (Gündüz & Sahin, 2011), and internet use in terms of variables such as gender and specific psychiatric symptoms (Kelleci et al., 2009). The research related

to problematic internet use analyzes the prevalence of problematic internet use (Canbaz et al., 2009), relations with depression (Canan et al., 2010), peer pressure and perceived social support (Kıran-Esen, 2009), loneliness and wellbeing (Çağır & Gürgan, 2010), loneliness, social support, and life satisfaction (Esen, 2010), and the predictors of problematic internet use (A. Ceyhan, 2011b). The internet use of adolescents and the relationship between a variety of personal, social, and psychological variables have been increasingly investigated in Turkey; however, there is a need for further research in the area.

Purpose of the Study

This study's first step was to define adolescents' experimental identity behavior on the internet. The study also aimed to demonstrate relationships between problematic internet use and adolescents' psychological needs, identity status, sensation seeking, and life satisfaction.

Method

Participants

The study group included 2729 students attending 16 public high schools during the academic year 2011–2012 in Eskişehir, Turkey. Among these students, 49.70% (1357 students) were female and 50.30% (1372) were male. They were aged 14–19, with an average age of 16.38 (p = 1.08).

Data Collection Tools

Problematic Internet Use Scale–Adolescent: To determine the students' problematic internet usage levels, the Problematic internet Use Scale–Adolescent (PIUS–A), developed by Ceyhan and Ceyhan (2014), was used. The scale consists of 27 items with a minimum obtainable score of 27 and a maximum of 135. High scores indicate an increased risk of problematic internet use in adolescents, suggesting a tendency toward internet addiction (Ceyhan & Ceyhan, 2014).

Basic Needs Inventory: The Inventory was developed for high school students by İkinci (2003) on the basis of Glasser's Choice Theory to measure satisfaction levels of adolescents' basic needs. The scale consists of 26 items, with a minimum obtainable score of 26 and a maximum of 130. A high score indicates a high level of fulfillment of needs (İkinci, 2003).

Ego Identity Status Scale: This scale was adapted to determine which of Marcia's four adolescent identity statuses (diffusion, foreclosure, moratorium, and achievement) the adolescent is in. It is a 64-item scale, and subjects can obtain, at the lowest, 16, and at the highest, 96 points (Eryüksel & Varan, 1999).

Arnett Inventory of Sensation Seeking: Arnett' scale (1994) attempts to quantify the individual's sensation-seeking level, a personality trait that predicts risky behaviors. The scale was adapted into Turkish by Sümer (2003), and its lowest score is 19, and the highest, 76. High scores indicate a high sensation-seeking trait. Ayvaşık et al. (2007) have suggested that the 19 items would measure a single factor. In this one-factor structure, the internal consistency coefficient was 0.85. In another study, it was 0.70. The intensity subscale was found to be 0.64, and the novelty subscale, 0.50 (Özmen, 2006).

Life Satisfaction Scale: This scale was developed by Diener, Emmons, Larsen, and Griffin (1985) and adapted into Turkish by Köker (1991). It is a subjective assessment of the individual's life, measuring perception of overall life satisfaction. Scale scores vary between 5 and 35. A higher score indicates a high life-satisfaction level, which could be interpreted as an increase in perceived overall life satisfaction. Reliability studies showed that the retest reliability coefficient was 0.85 (Köker, 1991). Another study showed the test-retest reliability as 0.71 and internal consistency as 0.78 (Yetim, 1991).

Survey of Personal Information: This survey collected information about students' gender, grade level, and age as well as their internet use habits. Questions to determine adolescents' identity experiment attempts were adapted from Valkenburg, Schouten, and Peter (2005), and Valkenburg and Peter (2008) with their permission.

Collection and Analysis of Data

The research was conducted on 2729 students in 16 different schools in the spring term of 2011–2012. As well as descriptive statistics, Pearson correlation analysis and hierarchical multiple linear regression analysis were used.

Findings

Findings Related to Frequency of Adolescents' Internet Identity Experiments

This study obtained information about the frequency of adolescents' identity experiments (acting like someone else by changing some of their characteristics). For this purpose, adolescents were asked how often they feel they need to act like someone else (*never*, *sometimes*, and *often*). The findings show that 32.50% of adolescents (n = 724) *never* perform identity experiments, 66.40% (n = 1478) *sometimes* do, and 1.10% (n = 25) *often* do. According to these findings, *sometimes* is the highest frequency of adolescents performing identity experiments on the internet.

Findings Related to Types of Adolescents' Internet Identity Experiments

Table 1 displays the type and frequency of identity experiments on the internet of adolescents.

Table 1

Type and Frequency of Adolescents' Internet Identity Experiments

Type of Identity Experiment*	Frequency					
	Never		Sometimes		Often	
	n	%	*n*	%	*n*	%
Older	1408	63.40	685	30.80	128	5.80
More macho/manly	1812	81.90	323	14.60	78	3.50
More beautiful/better looking	1351	61.30	586	26.60	267	12.10
Opposite sex	1703	77.20	361	16.40	141	6.40
More attractive	1365	61.70	600	27.10	246	11.10
More intelligent	1081	49.10	749	34.00	373	16.90
Less shy	1227	55.70	687	31.20	290	13.20
Imaginary person	1208	55.20	607	27.70	374	17.10
As known person	1391	63.10	526	23.90	286	13.00

*The *other* option was selected by 15 participants.

As shown in Table 1, when *sometimes* and *often* responses are assessed together, 50.90% of adolescents behave like *a more intelligent person*, followed by *an imaginary person* (44.80%), and then *a less shy person* (44.40%).

Findings Related to Reasons for Adolescents' Internet Identity Experiments

Table 2 presents findings on reasons and frequency of adolescents' identity experiments on the internet.

Table 2
Reasons and Frequency of Adolescents' Identity Experiments

Reason for Identity Experiment*	Frequency					
	Never		Sometimes		Often	
	n	%	*n*	%	*n*	%
To feel less shy	1444	66.30	557	25.60	177	8.10
To speak/say more	1228	56.40	641	29.40	309	14.20
To communicate more easily	1167	53.50	617	28.30	398	18.20
To make new friends	1243	57.20	608	28.00	321	14.80
To get to know people better	1108	51.00	668	30.80	395	18.20
To find a date/relationship	1473	67.80	481	22.20	217	10.00
To see others' reactions	1151	52.90	694	31.90	329	15.10
To try to be someone else	1550	71.40	479	22.10	143	6.60
To design a new character	1423	65.70	587	26.70	164	7.60

*The *other* option was selected by 8 participants.

When the frequencies of *sometimes* and *often* responses were combined seen in Table 2, it was found that adolescents experiment with identities *to get to know people better* (49%), *to communicate to them more easily* (46.50%), *to see someone else's reactions and responses* (47.00%), *to speak more* (43.60%), and *to make new friends* (42.80%).

Findings Related to Predictors of Adolescents' Problematic Internet Use

The study tries to determine whether psychological needs of adolescents, their identity status, sensation-seeking levels and life-satisfaction levels can predict problematic internet use significantly. The results show a linear relationship between these variables; there are no significant deviations from normality, and a multicollinearity problem does not exist. To perform the hierarchical multiple

linear regression analysis, predictor variables of psychological needs (love/belonging, entertainment, freedom, and power needs) [Model 1], identity status levels (diffusion, foreclosure, moratorium, and achievement) [Model 2], sensation seeking [Model 3], and life satisfaction [Model 4] were analyzed in four blocks. The results revealed that the need for entertainment and power, as well as foreclosure identity-status level do not make a significant contribution to the regression model (regression coefficient (ß) is not significant at the 0.05 level).

The variables, *belonging* and *power* together explain 9% of the total variance. Identity statuses *achievement*, *moratorium*, and *diffusion* contribute 8% to the total variance; also the *sensation-seeking* variable contributes 2%, and *life satisfaction*, 1%. Consequently, according to the regression analysis, these variables explain 20% of the total variance of problematic internet use; this indicates that identity status (achievement, moratorium, and foreclosure), psychological needs (belonging and power), sensation seeking and life satisfaction are significant factors in problematic internet use.

Discussion

This research on adolescents' internet habits and predictors of problematic internet use revealed that the majority of adolescents sometimes experiment with identities on the internet (66.40%), (*never*, 32.50%; *sometimes*, 66.40%; and *often*, 1.10%). This finding is consistent with other research studies that have found the *sometimes* percentage to be higher than 50% (Bayraktar & Gün, 2007; E. Ceyhan, 2014, 2011; Gross, 2004; Schouten, 2007; Valkenburg et al., 2005). Such a high ratio of high school students' identity experimentation relates to identity experimentation and exploring one's identity being developmental milestones of adolescence (Subrahmanyam et al., 2006). Young people can express themselves and their identities on the internet (Maczewski, 2002), and it provides a safe environment to experiment without fear of disapproval and rejection (Ando & Sakamoto, 2008). Adolescents enjoy this fluidity of identity because it gives them a chance to experience things that they cannot experience in real life (Leung, 2011). Students pretend to be anybody they wish in online relationships, avoiding racial and gender bias. This aspect of the internet makes online relationships an ideal environment for testing various

forms of relationships and identifications (Young, 1997). Overall, the high rates of adolescent identity experimentation on the internet can be interpreted as adolescents finding it quite tempting to pretend to be somebody else.

Findings about the type and frequency of adolescents' identity experiments indicate that mostly they pretend to be an imaginary person and a more intelligent person. Besides, when *sometimes* and *often* responses are assessed together, adolescents mostly behave like *more intelligent* (50.90%), *imaginary* (44.80%), and *less shy* (44.40%) people. The least popular identity experiments are *somebody from the opposite sex* (22.80%) and *a more macho person* (18.10%). These findings parallel Ceyhan's study (2014) conducted on college preparatory students and suggest that adolescents naturally explore some characteristics as part of their development and experiment by modifying other characteristics. In fact, some studies have shown that adolescents mostly change their age and educational status (Whitty, 2002), age and names (Bayraktar & Gün, 2007), and age and physical appearance (Konecny, 2009).

When it comes to reasons and frequency for identity experiments, this study's participants said that mostly they wanted to *get to know people better* (49%), *talk to people more easily* (46.50%), *to see somebody else's response* (47%), *to say more* (43.60%) and *to make new friends* (42.80%) respectively. Research studies show the general reasons for identity experiments as self-exploration (to investigate how others will react), social compensation (to overcome shyness), and social facilitation (to facilitate formation of relationships) (Schouten, 2007; Valkenburg et al., 2005). The findings in this research, such as getting to know people better, talking to people more easily, and establishing new friendships are involved with social compensation and facilitation, and therefore, they are consistent with other studies' findings.

Research results reveal that diffusion, moratorium, and achievement identity statuses, psychological needs of power and love/belonging, and sensation-seeking and life-satisfaction levels are significant predictors of problematic internet use. This indicates that when the needs for power and love/belonging are not fulfilled, the likelihood of problematic internet use increases; this is confirmed by studies stating that the unfulfilled need for social recognition, social support, and belonging can push adolescents to meet these needs on the internet (Erwin et al., 2004; Suler, 1999; Valkenburg & Peter, 2007). Belonging is the individual's

belief that he or she is loved and cared for by family and friends in professional and social relationships (Frey & Wilhite, 2005). In adolescence, individuals develop and shape their identities; phenomena such as friendship and belonging, recurrent satisfaction, and pursuit of happiness gain significance (Huang & Shen, 2010). In this period, peer groups make a remarkable impact on personality development (Zorbaz, 2013) and, social recognition, acquisition of loyalty and belonging, and also self-confidence and self-esteem (Kulaksızoğlu, 2011). Visiting a chat room or any other text-based environment helps individuals experience a feeling of belonging to a group. In chat rooms, individuals gain a mutually supportive environment, and friendships can be established (Primo, Pereira, & Freitas, 2000). With rapid changes in technology, social networks like Twitter and Facebook have taken over such functions today. Consequently, if adolescents constantly fulfill their needs for social recognition and belonging in online environments, they might be at risk for addiction (Mythily, Qiu, & Winslow, 2008). Furthermore, unmet psychological needs (Kaygusuz, 2013) and also seeking satisfaction for the needs in the virtual world (Huang & Shen, 2010) might lead to problematic internet use.

Unfulfilled needs for power have also been shown to increase problematic internet use. Findings from other studies as to interactive internet games providing a sense of belonging, competence, and power (Young, 2011) are confirmed in this study. The sense of accomplishment experienced in online games allows individuals to feel powerful and respectable (Kıran, 2011). Furthermore, individuals can feel powerful when confronting people and opinions that they cannot confront in real life. Communicating and spreading their ideas and convincing people through social networking sites might provide individuals a sense of power. Individuals can also improve their status by posting colorful moments of their lives on the internet. Adolescents might try to meet their power needs through competitive activities (Frey & Wilhite, 2005); indeed, violence and aggression in online games can make them feel powerful. Young people seek to gain elements such as dignity and power in virtual environments that they cannot obtain in the real world (Kıran, 2011). Young people with good computer skills in online games gain status and prestige. In addition, expertise and skills in virtual environments provide a sense of power (Morahan-Martin & Schumacher, 2000) among friends and peers.

This study concludes that as achievement in identity status increases, problematic internet use decreases, whereas a high level of diffusion and moratorium in identity status indicates a likelihood of problematic internet use. This finding is also supported by other studies' findings of a significant relationship between moratorium identity statuses (E. Ceyhan, 2010; Matsuba, 2006) and identity achievement status (negatively) (E. Ceyhan, 2010) and problematic use of the internet. In addition, this finding is consistent with those of another study: diffused-avoidant identity style has positive correlation, and informative and normative identity styles have negative correlation, with internet addiction (Arabzadeh et al., 2012). Adolescents form their identities through exploration and decision-making processes. The diffusion state is generally considered the least mature and least complicated status. Adolescents in this state have apathy and despair about guiding and shaping their future lives. Young people in diffusion state during early or middle adolescence are prone to drug use, risky sexual behaviors, and academic failure (White, 2000). Identity achievement status is often seen as the most functionally complex and most mature status, associated with balanced thinking (Boyes & Chandler, 1992), and mature interpersonal relations (cited in Cote & Schwartz, 2002). As achieved identity is associated with responsibilities, people with this status are likely to avoid behavior that could harm themselves and their environment. These adolescents can establish balanced and constructive relationships both with their peers and the elderly, and have self-esteem and self-confidence.

According to another finding of this study, an increase in sensation seeking relates to an increase in problematic internet use. This finding is supported by another study that found the total score of sensation seeking higher for internet addicts than for non-addicts (Lin & Tsai, 2002). Moreover, sensation seeking is positively linked with internet addiction (Ko et al., 2007; Rahmani & Lavasani, 2011a, 2011b; Shi et al., 2005), and playing online games (Chiu et al., 2004). Another study has shown that high school students with internet addiction scored high on novelty seeking, which is a subscale of the sensation-seeking scale (Ko et al., 2006). Seeking sensation is an important feature of adolescence, and despite the risks, it is a dominant character trait with a desire for new, intense, and different experiences and trends (Arnett & Balle-Jansen, 1993). In this context, children and young people who constantly seek excitement by discovering new things are under threat of internet addiction. Sensation-

seeking adolescents prefer action-packed online games (Karaca, 2007) and online relationships (Peris et al., 2002) more than their peers do. Their passion for sensation and thrill makes these adolescents especially vulnerable to dangers of the internet (Gürcan & Hamarta, 2013). Doubled by peer pressure, novelty- and sensation-seeking habits might lead adolescents to internet addiction (Lin & Tsai, 2002; Tsai & Lin, 2003).

This research also revealed that high scores in life satisfaction are negatively correlated with problematic internet use. This finding is supported by many others showing negative correlation between adolescents' life satisfaction, their social internet use, and the time spent on the internet (Bulut-Serin, 2011; Cao et al., 2011; Çelik & Odacı, 2013; Durak-Batıgün & Kılıç, 2011; Ko et al., 2007; Lemmens, Valkenburg, & Peter, 2011; Meerkerk et al., 2010; Morahan-Martin, 2008; Stepanikov, Nie, & He, 2010). Individuals with low life-satisfaction levels are reported to feel safer on the internet and to value online communication more than individuals with high satisfaction levels (Esen & Siyez, 2011; Livingstone & Helsper, 2007). Some other studies suggesting that life satisfaction has both direct and indirect effects on the cognitions about problematic internet use (Şenol-Durak & Durak, 2011) also support this study's finding. Low life satisfaction for young people tends to indicate psychological, social, and behavioral problems, while high life satisfaction tends to indicate mental well-being (Telef, 2013). The underlying cause of excessive internet use could be to obtain greater life satisfaction (Çelik & Odacı, 2013). Looking for life satisfaction in the virtual world (Huang & Shen, 2010) and meeting unmet needs (Kaygusuz, 2013) of adolescents might trigger problematic internet use.

To conclude, adolescents are going through a developmental period in which they have not yet fully set goals. Furthermore, they experience uncertainty in many issues they face, and their search for identity and self can lead to problems. Adolescents might also turn to the internet more to rid themselves of uncertainty and distress in their lives. Therefore, it is essential that adolescents use the internet within the framework of their developmental needs, not to replace real-life relations with virtual ones. To prevent emergence of problematic internet use, adolescents should not be allowed to turn internet use into a major life-satisfaction tool, a source of their entire social support, and an environment for identity development mainly (A. Ceyhan, 2011b).

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