Examination Of Problematic Internet Use In Information Technology Department Students In Terms Of Different Variables (Malatya Sample)

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Abstract

The main aim of this study is to describe the level of problematic internet use for students in Malatya who study in the field of information technology in the vocational secondary education institutions. In this study, general screening method was used. Online Cognition Scale (OCS) and the questionnaire involving demographic information form were used as data collection tools. The universe of the study consists of all information technology students (N = 482) at the vocational and secondary level in Malatya. As data analysis tool, 36-item Online Cognition Scale with seven-point Likert scale and demographic form developed by researchers were used. Cronbach's alpha (a) internal consistency coefficient of the scale was found to be 0.91. In this study, 312 volunteer students selected in the universe were surveyed and the data of 310 individuals who were understood to fill the questionnaire correctly were included in the analysis. Of the 310 individuals involved in the survey, 131 (42.2%) were found to be problematic internet users. This rate shows that a significant number of students who make up the working group are problematic internet users. One-way ANOVA and t-test were performed separately to data of all groups and the data obtained from the problematic internet user group. Whether use of the internet is affected by different variables such as gender, age, registering to social network, attitudes towards occupational fields, and having internet at home or not was investigated according to data obtained. As a result of analyses, it was determined that while there was no relationship between daily internet usage time and problematic internet use, there was a significant relationship between both groups in terms of social network and problematic internet use. It was concluded that gender did not have any contribution to problematic internet use.

Keywords: Problematic Internet Use, Internet addiction, Adolescent, Information Technology, Social Network.

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Bilişim Teknolojileri Bölümü Öğrencilerinde Problemli İnternet Kullanımının Farklı Değişkenlere Göre İncelenmesi (Malatya Örneği)

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Özet

Bu çalışmanın öncelikli amacı, örneklem bulgularından yola çıkarak Malatya'da mesleki ortaöğretim kurumlarındaki bilişim teknolojileri alanındaki öğrencilerin problemli internet kullanım düzeyini betimlemektir. Çalışmada genel tarama yöntemi benimsenmiştir. Veri toplama aracı olarak İnternette bilişsel durum ölçeği ve demografik bilgi formunu içeren anketten yararlanılmıştır. Çalışmanın evreni, Malatya'daki mesleki ve ortaöğretim seviyesindeki tüm bilgi teknolojisi öğrencilerinden (N = 482) oluşmaktadır. Veri analiz aracı olarak 36 maddelik yedili likert tipindeki İnternette Bilişsel Durum Ölçeği ve araştırmacıların geliştirmiş olduğu demografik form kullanılmıştır. Ölçeğin Cronbach alfa (a) iç tutarlık katsayısı 0.91 olarak bulunmuştur. Bu çalışmada evrende seçilen 312 gönüllü öğrenci araştırılmış ve anketi doğru doldurduğu anlaşılan 310 kişinin verileri analize dahil edilmiştir. Ankete katılan 310 kişiden 131'inin (% 42,2) problemli internet kullanıcısı olduğu tespit edildi. Bu oran çalışma grubunu oluşturan çok sayıda öğrencinin problemli internet kullanıcısı olduğunu göstermektedir. Tüm grubun verilerine ve problemli internet kullanıcısı olarak tespit edilen gruptan elde edilen verilere ayrı ayrı t-testi ve one-way ANOVA uygulanmıştır. Elde edilen verilere göre internet kullanımına cinsiyet, yaş, sosyal ağa kayıtlı olma, meslek alanına yönelik tutum, evde interneti olma gibi farklı değişkenlerin etkisinin olup olmadığı araştırılmıştır. Yapılan analizler sonucunda günlük internet kullanım süresi ve problemli internet kullanımı arasında ilişki bulunmazken; sosyal ağ ve problemli internet kullanımı arasında her iki grupta da anlamlı bir ilişki belirlenmiştir. Cinsiyetin problemli internet kullanımına katkısı olmadığı sonucuna varılmıştır.

Anahtar Kelimeler: Problemli İnternet Kullanımı, İnternet Bağımlılığı, Genç, Bilişim Teknolojileri, Sosyal Ağ.

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INTRODUCTION

The internet is one of the most common technologies of our time. This accelerates accessing information and offers significant convenience for the users. Communicating with people at the other end of the world through electronic mails, accessing global data basis and libraries, being instantly informed about what's going on in the world, listening to music, watching movies, playing games, shopping, following financial transactions are only a few of the conveniences offered by the Internet to individuals (Gönül, 2002).

Despite the conveniences and opportunities of the Internet, it also has undesired outcomes. For example, harming others on virtual settings, fraud, displaying virtual violence, unethical use, misinforming or being wrongly informed, accessing inappropriate contents and being satisfied through virtual social relationships can be listed as behaviors related to pathological internet use or developing internet addiction (Ceyhan & Ceyhan, 2007). Indeed, internet usage is growing very rapidly and this increase can lead to pathological / problematic Internet use or Internet addiction (Chou, Condron & Bellander, 2005; Nalwa & Anand, 2003).

When it is considered statistically, according to recent data, studies conducted in 209 countries, in which Turkey also participated, it was stated that there are over 2.405.518.376 users worldwide (Internet World Stats.2012, June). According to the Household Members' Information Technologies Usage Research conducted by TUİK, the rate of regular internet usage among internet users between the ages 16-24 was 91.6%. In the same study, it was observed that during the first three months of year 2013, 41.1% of the internet users used their mobile phones or smarts phones to connect to the wireless Internet in settings other than their houses or workplace and 17.1% used portable computers (laptop, netbook, tablet etc.) (TUİK, 2013). It can be said that because Internet technologies are very common and accessible, the internet can cause frequent and misuses. Internet addiction is evident through symptoms such as failing to limit internet usage, continuing to use it despite the social and academic damages it causes and being anxious in cases where internet access is limited (Shapira & colleagues, 2003).

According to a news announcement, the American Psychiatric Association has decided to include an additional part for internet addiction in the handbook of Diagnostic and Statistical Manual of Mental Disorders (DSM) (Tempo, December 2013). With respect to this definition, it is evident that, just like in alcohol and drug addiction, internet addiction triggers the pleasure center of the brain. As the brain tends to increase the satisfaction gained from the satisfying "component" (Internet), the individual tends to repetitious behaviors and this turns into addiction. According to a recent study, internet addiction can change the chemical, emotional and cognitive processes of the brain. The reason for this is considered to be because the related part of the brain is developed and the other part declines (Tempo, December 2013). Research conducted in recent years has shown that problematic internet use can be characterized as addictive behavior (Iacovelli & Valenti, 2009). And from a clinical perspective, it is important that individuals and the wider community suffer from the potential to create patterns of internet use in the problematic and potentially addictive tendencies of people (Kittinger, Correia, & Irons, 2012).

When the high school level studies for problematic internet usage were investigated, it was seen that male students had more problematic internet usage rates than female students (Zorbaz & Tuzgöl Dost, 2014). In addition, it is known that individuals who have fear of being negatively assessed by others in the real world have more problematic internet use levels (Zorbaz & Tuzgöl Dost, 2014). However, it is observed that high school students 'feelings of love and closeness to each other do not affect students' use of problematic internet, as a result, it is shown that the internet environment is simpler and superficial than real life (Zorbaz & Tuzgöl Dost, 2014). In another research conducted, it was seen that the students with high level of ethical maturity had lower problematic internet use level (Ekşi & Çiftçi, 2017). Nevertheless, there was no direct relationship between religiosity and problematic internet use, but it is emphasized that religious students with higher levels of moral maturity are more protected from problematic internet use (Ekşi & Çiftçi, 2017). It is also known that problematic internet usage creates virtual bullying and virtual victimization (Altundağ, 2016). In addition, students who have social media accounts without knowledge of their families have a higher level of problematic internet use than students with social media accounts with knowledge of their families (Al-tundag, 2016).

When examining researches conducted at university level for problematic internet usage, it is seen that males have a higher level of problematic internet use compared to females (Oktan, 2015). In addition, there is a positive relationship between time spent on the internet and problematic internet use (Oktan, 2015). At the

same time, there was a positive relationship between problematic internet use and loneliness (Oktan, 2015). Similarly, it has been observed that the connections between parents and friends of students who use problem internet have weakened (Oktan, 2015). In addition, a positive relationship was found between problematic internet use and impulsivity, which is defined as unplanned reactions and without considering the consequences of stimuli (Eroğlu, 2016). Playing an online game, spending time in a social networking environment gives the individual an instant gratification so that the individual can act impulsively (Eroğlu, 2016). In addition, it has been seen that problematic internet usage levels of individuals who have developed social orientation have decreased (Eroğlu, 2016). In another research conducted, it was determined that there is a linear relationship between problematic internet use and psychological symptoms (İkiz, Prosecutor, Asıcı & Yörük, 2015). According to this, it can be said that problematic internet usage affects students' health, social and emotional development, interpersonal relations, communication skills and academic achievement in the negative direction and thus the level of psychological symptom of the students has increased (İkiz, Prosecutor, Asıcı & Yörük, 2015).

Purpose of the Study

The purpose of this study was to evaluate problematic internet usages of students who chose information technologies as their future occupations. As Wang and colleagues(2011), stated students who spend more time on-line are more likely to develop problematic internet Use. It is considered that the difficulties and problems encountered in adolescence concerning the developmental stages constitute a threat to teenagers who spend approximately 20 course hours in computer laboratories online and who continue to work at home. With this respect, students studying in the information technologies department in seven different vocational and technical high schools in the province of Malatya volunteered to participate in the questionnaire.

Answers for the following questions were sought:

1. What is the level of problematic internet usage in participants?
2. Attendants

    a. Is there a meaningful difference between the Gender of Participants and the Online Cognitive Scale (OCS)?

    b. Are there any significant differences between being registered on social network and OCS scores?

    c. Is there a meaningful difference between the attitudes towards their profession and the OCS scores?

    d. Is there a meaningful difference between internet presence at home and OCS scores?

3. What is the gender and age information of individuals identified as problematic internet users?
4. Individuals identified as problematic internet users

    a. Is there a meaningful difference between gender and OCS scores?

    b. Is there a meaningful difference between their age and OCS scores?

    c. Is there a meaningful difference between the frequency of social network use and OCS scores?

Problem of the Study

Due to the interest that adolescents have for the Internet, these individuals have become a potential risk group for problematic internet usage during their developmental stage because they use the internet more frequently than their peers (Treuer, Fabian & Füredi, 2001; Widyanto & McMurran, 2004) and because their cognitive, emotional and social developments have not been completed (Ceyhan, 2008; Tsai & Lin, 2001; Yang & Tung, 2007). Adolescents and young adults are particularly valued as being at high risk for behavioral addiction(Grant & Colleagues, 2010).

While adolescents can be considered as a risk group among their peers due to these factors, when the occupational groups are considered, workers of the information sector also have a tendency for problematic internet use. According to Kandell (1998), University students are particularly vulnerable to pathological internet use due to various factors. These factors include (a) the psychological and developmental characteristics of late adolescents / young adults, (b) access to the Internet, and (c) computer / internet use.

METHOD

Study Group

The population of the study consisted of high schools of different vocational and technical secondary schools' information technologies departments in the province of Malatya during the 2015-2016 school year. The population consisted of 482 information technologies students studying in year 10., 11. and 12. in 7 vocational and technical high schools in Malatya. 50.6% of the participants were female and 49.4% were male. 59.4% of 11th grade students participated in the research. This ratio is the highest among students who participate in the survey from other classes. 8.7% of the 12th grade students who were absent due to the YGS examination could be included in the research. The province of Malatya and the high schools were preferred due to their accessibility. However, while the whole population was targeted, the study failed in accessing the whole population. In the study consisting of 312 participants, 2 forms were excluded because the participants marked the same option for each question.

Study Model

The study was conducted through the descriptive screening model, one of the screening models. Descriptive screening models are screening arrangements carried out on the whole population or on a group, example or sample from the population to come to a general assumption on the population (Karasar, 1995). The study was designed according to the descriptive screening model.

Data Collection Instruments, Validity and Reliability Studies

The Online Knowledge Scale and the Personal Information Form were used as data collection tools. The forms were published on the Internet.

Online Cognitive Scale (OCS) was used to determine the problematic internet usage levels of high school students. Developed by Davis, Feltt and Besser (2002) the OCS' adaptation studies were carried out by Özcan and Buzlu (2005). The scale consists of four sub-dimensions including Loneliness-Depression, Decreased Impulse Control, Social Support, Attention Distribution and a total of 36 items. As a result of confirmatory factor analysis, it has been determined that OCS is in very good agreement with the original in terms of factor structure(χ^2=0.416, GFI=0.999, CFI=1.0, RMSEA=0.006) (Özcan ve Buzlu, 2005). Cronbach Alpha factor reflecting internal consistency has been determined .91 for the total scale, .84 for the social support subscale, .60 for the loneliness-depression subscale, .79 for the reduced impulse control subscale, and .73 for the distraction subscale. Assessment of the scale is done by calculating the total score and subgroups. Scores of varying expressions from "absolutely disagree" to "strongly agree" are scored from 1 to 7, only item 12 is scored by reversing(For example 1 point = 7 points, 7 points = 1 point) OCS assesses Internet-related considerations. When the scale is composed of 36 items, maximum 252 points and at least 36 points can be taken from the scale. The score's being higher than the average is considered "problematic".

Personal Information Form: The "Personal Information Form", developed by the researcher, was used in the study so as to determine the demographic characteristics (gender, age, type of school, class, family income level and educational status) of the participants.

Analysis of Data

In the scope of the research 312 students were conducted OCS and 310 OCS scores were analyzed. Statistical techniques such as descriptive statistics, one-way analysis of variance (ANOVA) and t-test were used in the analysis of the data. Analysis of the data obtained from the study was done using the SPSS 21.0 program.

FINDINGS

Findings obtained from analyzes of data are presented in the context of research questions. Data of the problematic internet users were separated initially and then statistical procedures were applied to the data. The internal consistency coefficient was calculated as 0.91 and 0.93 in previous studies (Özcan, N., Buzlu, S. 2005; Reisoğlu, İ. et al., 2013) and was observed to be 0.95 in this study.

The OCS scores were calculated based on the answers given by the participants and values are given on Table 1. Thus, average scale score of the 310 participants was 96.55. Participants who positively deviated from the mean value were identified as problematic internet users. The number of individuals with scores between 96-244, in other words the number of problematic internet users, was 131. This can be interpreted

as 42.2% of the study group has a problematic internet usage habit. The fact that the target audience consisted of adolescents and students who chose information technologies as their occupations was thought to be effective in this.

Table 1.*Statistics of the scores obtained from the scale*

Score	N	Min	Max.	Ave.	Std. D.
	310	36	244	96.55	42.711

The gender of the participants and the relationship between problematic internet usage scores are displayed on Table 2. Because the sig. value was 0.02 and the t value was 2.27. According to the t test assumptions, it can be stated that there is a significant difference between male and female participants in favor of males. In other words, males are more vulnerable to problematic internet use than females.

Table 2. *The Change According to the Gender Variable: Independent Samples T-Test*

Gender	N	$\overline{X}$	S t. Dev.	df	t	Sig.
Male	153	102.10	42.36	3.42	2.27	0.02
Female	157	91.14	42.48	3.39		

The one-way ANOVA technique was conducted to examine the social network usage levels of the participants and the relationship between their scores. Statistical data on social network usage were examined initially and the results are given on Table 3.

Table 3. *Descriptive statistics of the scores from the scale according to the frequency of users' social network usage*

Social networks usage levels	N	$\overline{X}$	St. Dev.
I don't use it	55	79.65	35.992
Few times a week	99	87.34	37.095
0-1 hours a day	69	98.97	40.034
1-5 hours a day	21	110.90	44.400
6 hours and over a day	28	122.41	51.033

The ANOVA summary table concerning the data displayed on Table 4 is:

Table 4. *ANOVA Table displaying the effect of the social networks usage levels variable on the scores*

Score	Sum of Squares	df	Mean Square	F	Sig.
Between-groups	59526.55	4	14881.64	9.00	0.00
Within-Groups	504148.12	305	1652.94		
Total	563674.67				

It is evident on the table that the sig value is 0. With this respect, it can be stated that there is a significant difference between the averages of the groups. When the group averages are considered, it is evident that this difference is in favor of those who use social networks 6 hours and over a day.

The analysis was repeated fır the 131 participants who obtained scores over the average. The effects of the socio-demographic variables on the changes in participant scores were examined.

The characteristics of the group in which the participants were identified as problematic internet users are given on Table 5 and Table 6.

Table 5. *Distribution of problematic Internet users according to age*

Age	Frequency	Percentage
15-16	37	28.2
17-18	87	66.4
18 years and above	7	5.3
Total	131	100

Table 6. *Distribution of problematic Internet users according to gender*

Gender	Frequency	Percentage
Male	75	57.3
Female	56	42.7
Total	131	100

It is evident on Table 2 and Table 3 that two results are related to the age and gender factors. With 66.4% percentage, the majority of the PIU (Problematic Internet Users) were among participants aged 17-18.
When the gender variable is considered; with 75 participants, the male group constituted 57.3% of the Problematic Internet Users. Whether or not there is a significant difference with respect to the gender variable was questioned based on this result and the results of the independent samples t-test are given on Table 7.

Table 7. *The Change in Scores of Problematic Internet Users According to the Gender Variable*

Gender	N	$\overline{X}$	St. Dev.	df	t	Sig.
Male	75	137.69	29.79	129	0.07	0.94
Female	56	138.11	33.40	110		

According to the analyses, because the sig value was <0.05, the scores of the problematic internet users group did not differ with respect to the gender variable. In other words, there are no significant differences in favor of any of the two genders.

The relationships between problematic internet users and the socio-demographic variables were examined. A significant relationship was observed only for the frequency in using social networks variable. According to the one-way ANOVA analysis results, there was a significant difference between the frequency in using social networks and the scores obtained from the OCS.

Table 8. *Distribution of problematic Internet user scores according to their social network use*

Frequency of using social networks	N	Mean	Std. Deviation	Std. Error
I don't use it	15	129.53	22.987	5.935
Few times a week	31	129.35	33.52	6.02
0-1 hours a day	33	132.06	32.554	5.667
1-5 hours a day	30	142.23	24.848	4.537
6 hours and over a day	22	158.32	30.824	6.572
Total	131	137.87	31.262	2.731

Table 9. *ANOVA Table displaying the effect of the social networks usage levels of problematic internet users on the scores*

Score	Sum of Squares	df	Mean Square	F	Sig.
Within-Groups	14173.94	4	3543.49	3.96	0.00
Between-Groups	112874.85	126	895.83		
Total	127048.79				

It is evident on Table 8 that the sig value was 0 and when the data on the table are considered, the group who spends 6 hours and over a day on the internet has the highest problematic internet use scores.

RESULTS & DISCUSSION

This study was conducted on 312 information technologies students studying in vocational schools and who have the potential of being problematic internet users. The problematic internet usage levels of the participants were examined and the problematic internet users were evaluated separately. The data were analyzed through the SPSS 21.0 software. Whether or not the problematic internet usage levels of the participants are significantly related to the socio-demographic variables was examined at the descriptive level. It is considered that determining the relationship between the self-characteristics of information technologies students and their problematic internet usages will shed light on future studies which aim at preventing problematic internet use. Because the sample was accessible and the study was conducted through the data collected only from Malatya set limitations for the study.

The following conclusions were made based on the study findings:

At the end of this research, it was observed that the level of problematic internet usage was high in the students who read in the field of information technology in vocational high schools. As a reason of this situation, it is considered that the students of information technology in vocational high schools should be able to reach the computers and internet in the school environment and making the informatics as a profession.There is a significant relationship between the duration of social network use and problematic internet use. It has been seen that students who spend more time on social network sites have a higher level of problematic internet use. In addition, it is known that students who have a social media account without informing their families have a higher level of problematic internet use compared to students who have a social media account within the knowledge of their families (Altun-dağ, 2016).

No relationships between the OCS scores and variables such as the duration of internet usage, economic condition, separated parents, having a personal computer and having mobile access to the internet. In the study conducted by Zorbaz and Tuzgöl Dost (2014), it was seen that male high school students had higher problematic internet usage levels than female high school students. As a reason,it has been tought that male students can access the internet more easily and stay on the Internet for longer than girls. It was observed that males constituted the majority of problematic internet users. Results of the analyses conducted both on all groups and the group identified as problematic users indicate that high frequency in using social networks causes a significant difference in problematic internet use.

According to the study, 42.2% of the group consisting of 312 samples was identified as problematic internet users. However, according to a study conducted by Yılmaz (2007), people who are under the risk of computer addiction are below 10%. According to the study conducted by Günüç (2009), 10.1% of the participants are internet addicts. The rate of those who are problematic internet users in this study is higher than the rates found in Günç (2009) and Yılmaz (2007). The fact that the internet is used more frequently than in the past years suggests that it is the factor of this situation. The fact that the participants are adolescents and students who have chosen information technologies as their occupation can be considered as leading to these results.

Social network usage was observed to be related to problematic internet usage, which was a topic not studied in the literature. Contrary to this, no relationships between duration of internet use and the high scores obtained from the scale were detected. There was a significant difference in favor of male participants on problematic use based on the gender variable.

And Consistent with previous studies, a large minority of 6.8 participants (one in six) reported occasional or frequent problems on the internet(Anderson, 2001; Scherer, 1997). This group can be considered to have percentage among the groups who were examined up to now.

Caplan (2003), stated excessive use, one of the over-represented variables, was in a positive relationship with the negative outcomes. According to results of the study of (Odacı & Kalkan, 2010) problematic internet use

level are higher among those using the Internet for more than 5 h a day compared to others. Another the study of (Yang & Tung, 2007) confirm Internet addicts spent almost twice as many hours online on average than the non-addicts. But in this study there isnt relationships between duration of internet use and the high scores obtained from the scale were detected. As comparison with the previous study, this study makes clear problematic internet use is more than simply spending too much time on the internet.

Caplan (2005), stated that users prefer online communication because they find it much less risky than face-to-face communication. According to the study by Davis,Flett and Besser (2002), individuals who are lonely bear to use the internet for the intent of social comfort. İnternet is used a tool to communicate with others and increase social network. Because of these factors, this study confirmed that there is a difference in favor of those who use social networks 6 hours and over a day.

SUGGESTIONS

Future studies can be conducted in different cities by expanding the population. It can be conducted not only on the department of information technologies but also on people and students who spend over 10 hours a week on the internet and/or receive internet based education. It would be convenient to research quantitative and qualitative studies with a larger sample. Because today's perception on internet is oriented towards mobile internet services, the relationship between smart phone and problematic internet use can be studied.

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