EXAMINATION OF OSTRACISM AND INTERNET ADDICTION IN GIFTED STUDENTS ACCORDING TO MULTIPLE VARIABLES

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Abstract:

In this study, the aim is to examine the ostracism and internet addiction of gifted high school students according to multiple variables. The research group of this study constitutes 190 gifted high school students aged between 14 and 18 students in 21 provinces of Turkey in the 2021-2022 Autumn term selected through purposive sampling. In this study, the correlational survey model, which is a quantitative research method, was used. Data was gathered with the use of the Ostracism Experience Scale for Adolescents (Mercan, 2016) and the Internet Addiction Scale for Adolescents. The data was analyzed using SPSS 25.0. A test of normalcy was implemented on the data. In data showing normal distribution frequency distributions, t-tests and Anova tests were used, and to determine the significance of the significant results Cohen d and Eta squared significance tests were used. As a result of the study the ostracism and internet addiction of gifted students revealed no significance between owning a smartphone, education, mother-father work conditions but showed medium level significance in age, gender, mother-father education levels.

Keywords: gifted, ostracism, internet addiction, Bilsem

1. Introduction

Ostracism can be described as the inability to form social cohesion and to break off from society. Ostracism is an individuals and societies failure to obtain civil, political, economic and social rights that form the unity of individuals in a society (Walker and Walker, 1997). At the core of the concept of ostracism lies the element of social relations and the individuals being unable to see themselves as a part of society. ostracism as a concept originated in France in the 1960s. This concept was suppressed by an economic

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boom from the early 1950s and to the end of the 1960s but began to emerge all over the world with the 1970's recession. In 1974 France's minister responsible for the social makeup of society Rene Lenoir stated that 10% of the population was socially "excluded" with the "excluded" groups being mainly composed of the disabled, incarcerated, elderly in need of care, sexually harassed minors, substance abusers, psychologically disturbed and asocial individuals (Silver, 1994). ostracism is related to economic, social, cultural and political factors (Şahin and Coşkun, 2009) and can be seen in some cultures, age groups, demographic portions of the population, institutions or individuals which is avoided directly or indirectly avoided by individuals (Ferris, Brown, Berry and Lian, 2008; Willams and Nida, 2011).

Exclusion is common among adolescents who are especially socially susceptible to society (Eisenberger, 2006). With puberty comes the increased desire to belong, being accepted into an environment and being attached to someone/something, as a result, adolescents come under the increasing influence of peer groups (Aydın, 1999; Williams, 2007). ostracism prevents adolescents from developing healthy relationships with their environments or prevents the desire to belong to a group (Leets and Sunwolf, 2005; Santrock, 2003). Peers showing advanced development (in terms of cognitive, affective, psychomotor capability) is described as the most susceptible group to ostracism (Allen, 2007; Demir and Konik, 2021). To cope with this state the individual needs an environment in which he/she can express thoughts, socialize and feel a sense of belonging. For those who cannot meet this need and thus fall into melancholy and loneliness, the internet can act as a branch by providing new relationships and friendships (Young, 1997). Individuals interacting in virtual mediums get a sense of belonging by being members of different groups (Güzel, 2006) feels that it increases their standard of living (Arslan, 2017), increases their participation in social activities (Taş, 2018) and helps them freely express their emotions (King, 1996 source: Döner, 2011). On the other hand, overuse of it can lead to addiction.

Internet addiction in individuals can be defined as the desire to excessively use the internet and the inability to prevent it, a state of extreme anger and turn to violence when not connected to the internet, the time spent on the internet losing its value and increasing damage to their jobs, social and family life (Young, 2004). Individuals being harmed emotionally by using harmful sites is a potential risk (Yalçın, 2006) when not being ready for and being unable to analyze complex information they come across (Tarı, Cömert and Kayıran, 2010). On the other hand, many families defend having the internet in their homes due to wanting their children to have access to true information, to be included in the modern information society, increase in their spread and width of knowledge (Yalçın, 2006). Gifted children who develop differently from their peers show it in terms of faster learning, quick wits, intolerance towards peers, showing dominant behavior towards peers, being bored by peers and school, and isolation from society and peers due to being misunderstood. Currently, a gifted student who is not understood by their peers, has a hard time making friends and cannot internalize societal norms stay at home all day sometimes getting no sleep and staying on the computer and building himself/herself a

virtual social field (Usta, 2006). However, the role of gifted individuals in their countries cannot be understated. Gifted individuals need to use the internet as needed in order to develop new technologies (Bayraktar, 2001).

2. The Problem and Its Importance

A study done with gifted children and children who are not gifted from the same school has found that 97.9% of gifted children have a usable computer, all of them having electronic mail addresses, longer hours of studying and not study-oriented computer use and that computer games constituted a significant and larger (compared to normal students) portion of their free time (Üstünel, 2008).

A study conducted on the relationship between the sense of humor and ostracism of gifted students found that gifted students chose humor as an escape mechanism and humor helped them identify and navigate through their problems (Demir and Konik, 2021).

Ogurlu's (2015) research called "Ostracism in Gifted Students: A Preliminary Investigation in Turkey" stated that ostracism in gifted students does not occur based on gender, but that there is a positive correlation between ostracism and intelligence.

As can be seen in these studies many students are exposed to ostracism and as a result internet addiction is a common occurrence and yet this hasn't been a topic of research with regards to gifted students. Research has been conducted on high school students with ostracism and internet addiction studied together, or ostracism and internet addiction being studied separately, however as of yet no study has been conducted with ostracism and internet addiction with different variables among gifted students.

2.1 Goal of the Study and Research Questions
The goal of this study is to investigate the relationship between ostracism and internet addiction with different variables among gifted students. To accomplish this goal answers to the following questions has been sought:
1) Is there a significant relationship between ostracism and internet addiction levels in gifted students?
2) Is there a significant relationship between being "ignored", "excluded", which are the subdimensions of ostracism, and internet addiction with gender in gifted students?
3) Is there a significant relationship between being "ignored", "excluded", which are the subdimensions of ostracism, and internet addiction with owning a smartphone in gifted students?
4) Is there a significant relationship between being "ignored", "excluded", which are the subdimensions of ostracism, and internet addiction with age in gifted students?

5) Is there a significant relationship between being "ignored", "excluded", which are the subdimensions of ostracism, and internet addiction with fathers' education levels in gifted students?

6) Is there a significant relationship between being "ignored", "excluded", which are the subdimensions of ostracism, and internet addiction with mothers' education levels in gifted students?

3. Method

3.1 Research Design

The research was conducted using the correlational survey model, a quantitative research method. According to Karasar (2005), survey models are methods that aim to describe current or past conditions. The subject of the research may be an event, person or object, is defined as it is and no attempt to change or subvert this definition is made. The correlational survey model is a version of the survey model that is used to determine the existence and the extent of a correlation (Kaya, Balay ve Göçen, 2012). The aim of this study is to assess gifted students' ostracism and internet addiction and its related variables such as gender, age, mother education level and father education.

3.2 Participants

The study consists of 190 gifted high school students aged between 14 and 18 students in 21 provinces of Turkey in the 2021-2022 Autumn term of the Science and Arts Centers, 146(75.8%) of which is female and 44(23,2%) are male. 8.4% are 14, 18.9% are 15, 37.9% are 16, 16.8% are 17 and 17.9% are 18 years old.

The statistics of the descriptive features of the participants are given in Table 1.

Table 1: The Distribution of Ages in Gifted Students Based on Gender

Age	Female		Male		Total	
	f	%	f	%	f	%
14 years	12	8,2	4	9,1	16	8,4
15 years	20	13,7	16	36,4	36	18,9
16 years	60	41,1	12	27,3	72	37,9
17 years	26	17,8	60	13,6	32	16,8
18 years	28	19,2	60	13,6	34	17,9
Total	146	100	44	100	190	100

3.3 Data Collection Tools

To collect the data, data collection tools were distributed to students online with the help of Google Forms.

A. Ostracism Experience Scale for Adolescents (OES-A)

To determine internet addiction among adolescents a translated version of OES-A scale, developed by Gilman, Carter-Sowell, DeWall, Adams and Carboni (2013), called Ergenler

İçin Sosyal Dışlanma Yaşantısı Ölçeği (SDYÖ) by Mercan (2016) was used. Confirmatory and exploratory factor analysis found that the factor structure in the original study can be kept the same and be used in Turkey as a data collection tool. There are two sub-dimensions in the 11-item scale. In the form of self-reflection, the two sub-dimensions are evaluated with the 5-point Likert scale. The first subdimension measures "ignored"(5 items) and the second subdimension measures "excluded" (6 items). The factor loadings differed between .84 and 59. In pointing 1,2,3,4,5. items are summed. High point>"ignored", 6, 7, 8, 9, 10 and 11. items are summed. Low point>high "excluded". The Alpha Cronbach reliability coefficient was calculated at .87 (Mercan, 2016, s.175-176). In the current study, the Cronbach' alpha value was ignored .91, excluding .81.

B. Internet Addiction Scale for Adolescents (IASA)

It was designed to determine internet addiction in adolescents by Taş (2019). The trial form was done using 42, exploratory factor analysis 349, confirmatory factor analysis 215 and test-retest trial 50 subjects. Content validity was confirmed with expert opinion. The factor analysis conducted with the 9 item and single factored scale confirmed its validity. The single factored structure explains the variance of scale at nearly 40% (39.901%). The KMO(Kaiser-Meyer-Olkin) value is .820, Barlett's Sphericity tests value χ^2= 850,521 and p=.000. The common variance of the items in the scale is .300-.500, the item factor scales are found to be between .548-.707. The fit index after the confirmatory factor analysis (X^2/df =1.984, RMR=.028, GFI=.95, AGFI=.91, CFI=.93, RMSEA= .068) showed that the model is fit enough to be confirmed. Scale item-total correlation was found to be between .427-.587, test-retest trial (done 1 month after) correlation coefficient r=.72, Cronbach Alpha reliability coefficient was found to be .81 and groups for the upper and lower 27% t-test results were statistically significant (Taş, 2019, s. 875). In the current study, Cronbach' alpha value was .87.

3.4 Collection of Data and Analysis

Personal information form and the scales were merged and was conducted online with the data used in the study being gathered. Before the scales were conducted an information text was formed and placed in the upper part of the site by the researcher with adequate explanation and participation was on a voluntary basis. The students were asked to answer the option that best fits their description. On average the forms were filled in 10 minutes. To determine the relationship between internet addiction and ostracisation a normality test was conducted in order to determine the distribution of the data. A normality test was used with the data collected. To data revealing normal distribution frequency distribution test, t-test, Anova test and correlation analysis were conducted and to determine the effect level Cohen d and Eta square values were calculated.

4. Results

The data gathered and its interpretations are given in this section.

Table 2: Correlation Table Relationship Between Internet Addiction and Ostracization

Variable	1	2	3
1. Ignored	-		
2. Excluded	-.55	-	
3. Internet Addiction	.42	-.14	-
Average	8.71	18.75	22.78
Standard Deviation	3.48	4.53	7.12
Minimum	5.00	6.00	9.00
Maximum	18.00	27.00	41.00

According to Table 2, there is a medium correlation between internet addiction and ignored's sub-dimension "excluded" (r=.42, rs<.001) in gifted students. Between the subdimension of ostracization "ignored" and internet addiction (r= -.55, rs<.001) there is a high negative correlation in gifted students.

In this research, there was no significant correlation between ostracization/internet addiction and school variability, mother working condition, father working condition and owning a smartphone.

The unpaired t-test results between the sub-dimensions of ostracization "ignored", "excluded", internet addiction and gender are given in Table 3.

Table 3: The Unpaired t-test Results Between
"İgnored", "Excluded", Internet Addiction and Gender

Variable	Gender	N	x̄	ss	T	sd	*p*
Ignored	Female	146	9.09	3.63	3.33	188	.00
	Male	44	7.45	2.58			
Excluded	Female	146	19.04	4.40	1.57	188	.11
	Male	44	17,81	4.85			
Internet Addiction	Female	146	23.68	7.07	3.23	188	.00
	Male	44	19.81	6.51			

In Table 3 a correlation between the sub-dimension "ignored" and gender can be seen (t=3.33, p<.05) in gifted students. When this result is evaluated the average "ignored" values of females (x̄=9.09) are higher than average gifted male "ignored" values (x̄=7.45). As a result of effect size analysis the Cohen d value was found to be 0.551, thus "ignored" has a high effect on females (Cohen, 1988). There was no statistically significant correlation between ostracization sub-dimension "excluded" and gender (t=1.57, p>.05). There was a statistically significant relationship between gender and internet addiction (t=3.23, p<.05). The average internet addiction values of gifted male students (x̄=19.81) were lower than gifted female average internet addiction values (x̄=23.68). In the effect

size analysis done the Cohen d value was found to be 0.569, thus it can be concluded internet addiction has a medium effect on gifted female students.

Table 4: Descriptive Statistics of the Relationship
between Internet Addiction, the "Ignored", "Excluded" and Age

Ostracisation Values	N	$\bar{x}$	ss
14 Age	16	21.37	3.61
15 Age	36	18.11	4.90
16 Age	72	18.16	3.79
17 Age	32	17.37	6.00
18 Age	34	20.76	3.25
Internet Addiction Values	N	$\bar{x}$	ss
14 Age	16	21.37	8.08
15 Age	36	21.16	7.34
16 Age	72	24.66	7.57
17 Age	32	24.81	4.64
18 Age	34	19.29	5.64

Table 5: Anova Table on Relationship between
Internet Addiction, "Ignored", "Excluded" and Age of Gifted Students

Variable	Source of	Sum of Squares	sd	Average of	F	p	η^2
Ignored	Between Groups	75.108	4	18.777	1.568	.185	0.033
	Within Groups	2215.545	185	11.976			
	Total	2290.653	189				
Excluded	Between Groups	347.940	4	86.985	4.558	.002	0.090
	Within Groups	3530.923	185	19.086			
	Total	3878.863	189				
Internet Addiction	Between Groups	926.895	4	231.724	4.950	.001	0.097
	Within Groups	8660.684	185	46.815			
	Total	9587.579	189				

In Table 5 no statically significant difference between sub-dimension of ostracisation "ignored" and age was observed in gifted students (p>0.05). Between age and sub-dimension of ostracisation in gifted, students a small statistical significance (η^2=0.090) was found (p<.05, F=4.558). According to Post hoc test results 14 year old average ""excluded"" value($\bar{x}$=21.37) was larger than 18 year old average ""excluded"" value ($\bar{x}$=20.76), which was larger than the 16 year old average ""excluded"" value($\bar{x}$=18.16), which was larger than 15 year old average ""excluded"" value ($\bar{x}$=18.11), which was larger than the 17 year old average ""excluded" f value (Table 4.). A small (η^2=0.097) statistically significant difference (p<.05, F=4.950) was found between internet addiction and age in gifted students. According to the Post hoc test results average internet addiction value of 17 year old gifted students ($\bar{x}$=24.81) were bigger than the average internet addiction value of 16 year old gifted students ($\bar{x}$=24.66), which was larger than the average internet addiction value of 14 year old gifted students ($\bar{x}$=24.66), which was larger than the average internet addiction value of 15 year old gifted students ($\bar{x}$=21.16),

which was larger than the average internet addiction value of 18 year old gifted students ($\bar{x}$=19.29) (Table 4).

Descriptive statistics of the relationship between internet addiction, the sub-dimensions of ostracization "ignored", "excluded" and mother education level is given in Table 6.

Table 6: Descriptive Statistics of the Relationship between
Internet Addiction, "Ignored", "Excluded" and Mother Education Level

Ignored Values	N	$\bar{x}$	ss
No mother	28	10.50	4.71
Illiterate	6	11.00	2.36
Elementary School	14	8.85	1.38
Secondary School	8	8.53	3.12
High School	30	8.28	3.10
University and Higher Education	104	6.75	3.93
Excluded Values	**N**	**$\bar{x}$**	**ss**
No mother	28	18.14	4.16
Illiterate	6	12.33	3.72
Elementary School	14	17.71	4.10
Secondary School	8	18.00	2.26
High School	30	20.46	4.72
University and Higher Education	104	19.00	4.48

Table 7: Anova Test Results of the Relationship between
Internet Addiction, "Ignored", "Excluded" and Mother Education Level

Variable	Source of	Sum of Squares	sd	Average of	F	p	ɳ²
Ignored	Between groups	171.626	5	34.325	2.981	.013	0.075
	Within groups	2119.027	184	11.516			
	Total	2290.653	189				
Excluded	Between groups	371.777	5	74.355	3.901	.002	0.096
	Within groups	3507.086	184	19.060			
	Total	3878.863	189				
Internet Addiction	Between groups	302.954	5	60.591	1.201	.311	**0.**032
	Within groups	9284.625	184	50.460			
	Total	9587.579	189				

According to Table 7 a small (ɳ²=0.075) statistical significance (F=2.817, p<.05) was found between mother education level and sub-dimension ostracisation "ignored". The Post hoc test revealed that gifted children with illiterate mothers have a higher average "ignored" values($\bar{x}$=11.00) compared to those without mothers ($\bar{x}$=10.50), which is above those with mothers that have finished to secondary school ($\bar{x}$=8.85), which is higher than those with mothers have finished elementary school ($\bar{x}$=8.53), which is higher than those with mothers that have finished high school ($\bar{x}$=8.35), which is higher than those with mothers that have graduated from university or received higher level education($\bar{x}$=6.75)(Table 7). A small(ɳ²=0.096) statistical significance (p<0.05, F=6.909, Table 7) was found between the sub-dimension of ostracisation "excluded" and mother education level of gifted students.

The Post hoc test revealed that the gifted students with mothers that have finished high school have a higher average "excluded" value ($\bar{x}$=20.46) is higher than the average "excluded" value those with mothers that have university or above level education ($\bar{x}$=19.00), which is higher than the average "excluded" value those who have no mother ($\bar{x}$=18.14) , which is higher than the average "excluded" value of those whose mothers have finished secondary school ($\bar{x}$=18.00), which is higher than the average "excluded" value of those whose mothers have finished elementary school ($\bar{x}$=17.71), which is higher than the average "excluded" value of those whose mothers are illiterate ($\bar{x}$=12.33). There was no statistically significant relationship between mother education level and internet addiction (p>0.05, Table 7).

In Table 8 the descriptive statistics of the father education level and of the ostracism's sub-dimensions "ignored" and "excluded" and internet addiction in gifted students are given. In Table 9 the Anova test results outlining the relationship between father education level and ostracism's sub-dimensions "ignored" and "excluded" and internet addiction are given.

Table 8: Descriptive Statistics of the Father Education Level and of the Ostracism's Sub-Dimensions "Ignored" and "Excluded" and Internet Addiction in Gifted Students

	N	$\bar{x}$	ss
No Father	20	18.60	3.61
Illiterate	4	13.50	5.19
Elementary School	18	19.33	2.27
Secondary School	6	17.66	5.24
High School	26	19.53	5.80
University and Higher Education	116	18.75	4.51

Table 9: Anova Test Results of the Relationship between Father Education Level and "Ignored" and "Excluded" and Internet Addiction

Variable	Source of	Sum of Squares	sd	Average of	F	p	η²
Ignored	Between Groups	51.547	5	8.591	.702	.648	0.021
	Within Groups	2239.106	183	12.236			
	Total	2290.653	189				
Excluded	Between Groups	263.928	5	43.989	2.227	**.042**	**0.036**
	Within Groups	3614.928	183	19.754			
	Total	3878.863	189				
Internet Addiction	Between Groups	520.162	5	86.694	1.750	.112	0.049
	Within Groups	9067.417	183	49.549			
	Total	9587.579	189				

According to Table 9, no statistically significant relationship exists between the sub-dimension of ostracism "ignored" and father education level in gifted students (p>.05). A small (η²=0.036) statistical significance (p<0.05, F=2.227) was found between father education level and the sub-dimension of ostracism "excluded" in gifted students. According to the Post hoc test results of gifted children whose fathers have a high school education have higher average "excluded" levels ($\bar{x}$=19.53) which is higher the Post

hoc test results of gifted children whose fathers have finished elementary school (x̄=19.33), which is higher than the Post hoc test results of gifted children whose fathers have finished university or had a higher level education (x̄=18.75), which is higher than the Post hoc test results of gifted children who do not have a father (x̄=18.60), which is higher than the Post hoc test results of gifted children whose fathers have finished secondary school (x̄=17.66), which is higher than the Post hoc test results of gifted children whose fathers are illiterate (x̄=13.50). There was no significant statistical correlation($p>0.05$) between father education level and internet addiction in gifted students.

5. Conclusion, Discussion and Recommendations

As a result of this research a positive and significant correlation between internet addiction and ostracization in gifted students. According to this result, internet addiction increases simultaneously with ostracization. In literature review conducted studies that reached a similar conclusion have been found (Köten and Erdoğan, 2014; Bağır, 2020). Williams (2007) found that students facing ostracization cannot meet fundamental needs such as belonging, control, self-respect and a meaningful existence. According to the rebounding hypothesis of Maner et al. (2007) to meet this fundamental need of belonging they look for new pursuits to form new social bonds. This study has revealed that one such pursuit is internet addiction.

A statistically significant relationship between "ignored", internet addiction and gender has been found. A medium significance between "ignored", internet addiction and gender has been established. Usta (2016) found in a study that aimed to examine the relationship between internet addiction and other variables found that male students have higher internet addiction compared to females contradicting this research. Many other studies in the literature review found that gender has no predictive accuracy in terms of internet addiction (Yang and Tung, 2007; Üneri and Tanıdır, 2011; Tarı Cömert and Ögel, 2009).

When looking at the relationship between age and ostracization it was found that ostracization was highest at 17 years old and lowest at 14 years old is gifted students. Gürler and Demirli (2017) found in their research of internet addiction and self-respect in adolescents that there is a significant relationship between ostracization values and age. It was found that 14 years old have the highest ostracization values which are contradictory with this paper. This contradiction could be explained by gifted students' ability to form relationships in a circle of friends earlier in their high school years.

When looking at the relationship between age and internet addiction, the highest levels of internet addiction occur in 17 years old and 18 years old have the lowest internet addiction levels. Doğan's (2003) study on internet addiction found that the highest internet addiction levels occur at age 16. In other words, both studies reached a similar conclusion and data was gathered from gifted students. This indicates that in their first years in high school gifted students try to socialize, however failure to do so leads them

towards isolation in later years due to their differences with their peers and then the anxiety of the university exams result in them distancing themselves from the internet addiction in order to create a study environment.

When considering the relationship between mother education level and ostracization, mothers' education level being a university or above was found to decrease ostracization while mothers' education level being illiterate was found to increase ostracization levels. This can be explained by educated mothers raising awareness about ostracization in their children. However, no correlation was found between mother education level and internet addiction. This correlates with Usta's (2016) research on internet addiction in gifted children that found no correlation between internet addiction and mother education level.

When the relationship between ostracization sub-dimension "ignored" and father education level is investigated, it was found that as father education level increases "ignored" values decrease. This may be a result of fathers with high awareness, the ability to take precautions and a more mindful approach towards their children as education level increases.

In light of the evidence presented, more research on the topic of the relationship between ostracization and gifted students can reveal the underlying causes. Seminars on the topic of the effects of mother and father education levels of internet addiction and ostracization can outline the positive effects of mother and father education level on the ostracization and internet addiction level given in this research conducted by school administrations with the target audience being parents. When considering the significant relationships between ostracization and age in gifted students, school counselors can get support on ostracization and internet addiction. School counselors can conduct the adequate education needed. The research on this subject towards gifted students is found to be inadequate. This research can also be conducted with different age groups.

Conflict of Interest Statement
The authors declare no conflicts of interest.

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References

Arslan, G. (2017). Psychological maltreatment, forgiveness, mindfulness, and internet addiction among young adults: A study of mediation effect. Computer in Human Behavior, 72, 57-66.

Bağır, A. (2020). Ergenlerde akıllı telefon bayğımlılığının sosyal dışlanma (ostrasizm) ile ilişkisinin incelenmesi (Master'sthesis, İnönü Üniversitesi Sağlık Bilimleri Enstitüsü).

Bayraktar, S. (2001). A meta-analysis of the effectiveness of computer-assisted instruction in science education. *Journal of research on technology in education*, *34*(2), 173-188.

Cohen, J. (1988). Davranış bilimleri için istatistiksel güç analizi 2. baskı Hillsdale NJ Erlbaum.

Cömert, I. T., & Ögel, K. (2009). İstanbul örnekleminde internet ve bilgisayar bağımlılığının yaygınlığı ve farklı etkenlerle ilişkisi. *Türkiye Klinikleri Journal of Forensic Medicine*, *6*(1), 9-16.

Cömert, I. T. & Kayıran, S. M. (2010). Çocuk ve ergenlerde internet kullanımı. Çocuk Dergisi, 10(4), 166-170

Demïr, S., & Konïk, A. (2021). Examining the Relationship between the Sense of Humor and the Social Exclusion Perceived by Gifted and Talented Students. *Education*, *9*(2), 60-67.

Döner, C. (2011). İlköğretim Öğrencilerinde İnternet Bağımlılığının Farklı Değişkenlere Göre İncelenmesi, Yüksek Lisans Tezi. Ankara Üniversitesi. Ankara

Eisenberger, N. I. (2006). Identifying the neural correlates underlying social pain: İmplications for developmental processes. Human Development, 49, 273–293.

Ferris, D. L., Brown, D. J., Berry, J. W.ve Lian, H. (2008). The development and validation of the workplace ostracism scale. Journal of applied psychology, 93(6), 1348-1366.

Güzel, M. (2006). Küreselleşme, internet ve gençlik kültürü. Küresel İletişim Dergisi, 1(1), 1-16.

Karasar, N. (2005). Bilimsel araştırma yöntemi (17. Baskı). Ankara: Nobel Yayınları.

MEB. (2007). Bilim ve Sanat Merkezleri Yönergesi. Ankara: Milli Eğitim Bakanlığı.

Kaya, A., Balay, R., ve Göçen, A. (2012). Öğretmenlerin alternatif ölçme ve değerlendirme tekniklerine ilişkin bilme, uygulama ve eğitim ihtiyacı düzeyleri. International Journal of Human Sciences, 9(2), 1229-1259.

Köten, E., & Erdoğan, B. (2014). Engelli gençler, sosyal dışlanma ve internet. İstanbul Gelişim Üniversitesi Yayınları/Istanbul Gelişim University Press.

Lenhard, W. & Lenhard, A. (2016). Calculation of effect sizes. Retrieved from: https://www.psychometrica.de/effect_size.html. Psikometrik. DOI: 10.13140/RG.2.2.17823.92329

Maner, J. K., DeWall, C. N., Baumeister, R. F., ve Schaller, M. (2007). Does social exclusion motivate interpersonal reconnection? Resolving the "porcupine problem". Journal of Personality and Social Psychology, 92(1), 42.

Mercan, Ç. S. (2016). Ergenler için sosyal dışlanma ölçeği: Türkçe geçerlik ve güvenirliği. HAYEF Journal of Education, 13(2), 175-186.

Ogurlu, U. (2015). Ostracism among gifted adolescents: A preliminary study in Turkey. *Educational Process: International Journal (EDUPIJ), 4*(1-2), 18-30.

Silver, H. (1994). Social exclusion and social solidarity: Three Paradigms. International Labour Review, Vol.133.

Şahin, T., & Coşkun, S. (2009). Sosyal dışlanma ve yoksulluk ilişkisi. Başbakanlık Sosyal Yardımlaşma ve Dayanışma Genel Müdürlüğü.

Taş, İ. (2019). Ergenler için İnternet Bağımlılığı Ölçeği: Geçerlik ve Güvenirlik Çalışması. Journal of Kirsehir Education Faculty, 20(2).

Usta, A. (2016). Üstün zekâlı ve yetenekli öğrencilerde internet bağımlılığının farklı değişkenlere göre incelenmesi (Doctoral dissertation, Necmettin Erbakan University (Turkey).

Üneri, Ö. Ş. & Tanıdır, C. (2011). Bir grup lise öğrencisinde internet bağımlılığı değerlendirmesi: Kesitsel bir çalışma. Düşünen Adam Psikiyatri ve Nörolojik Bilimler Dergisi, 24(4), 265-272.

Üstünel, H. (2008). *Üstün zekâlı öğrencilerin PC oyun tercihlerinin akademik başarılarına etkileri* (Doctoral dissertation, Marmara Universitesi (Turkey)).

Williams, K. D. (2007). Ostracism: The kiss of social death. Social and Personality Psychology Compass, 1(1), 236-247.

Williams, K. D., & Nida, S. A. (2011). Ostracism: Consequences and coping. Current Directions in Psychological Science, 20(2), 71–75.

Yalçın, N. (2006). İnterneti doğru kullanıyor muyuz? İnternet bağımlısı mıyız? Çocuklarımız ve gençlerimiz risk altında mı?, https://www.researchgate.net/publication/348231900_

Yang, S. C. & Tung, C. J. (2007). Comparison of Internet addicts and non-addicts in Taiwanese high school. Computers in Human Behavior, 23(1), 79-96.

Young, K. S. (1997, August). What makes the Internet addictive: Potential explanations for pathological Internet use. In *105th annual conference of the American Psychological Association* (Vol. 15, pp. 12-30). Chicago.

Young, K. S. (2004). Internet addiction: A new clinical phenomenon and its consequences. *American behavioral scientist*, *48*(4), 402-415.