DO MIDDLE SCHOOL STUDENTS' INTERNET ADDICTIONS AFFECT THEIR 21ST CENTURY SKILLS? (THE CASE OF ARNAVUTKOY DISTRICT)

ORTAOKUL ÖĞRENCİLERİNİN İNTERNET BAĞIMLILIKLARI 21. YÜZYIL BECERİLERİNİ ETKİLER Mİ? (ARNAVUTKÖY İLÇESİ ÖRNEĞİ)

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ABSTRACT: The expansion of content on the Internet increases the rate of use, and this increase brings with it many problems, such as addiction. This type of addiction can prevent people from fulfilling the requirements of the age they live in. Therefore, this study aimed to determine the levels of internet addiction and 21st-century skills of middle school students and the effect of internet addiction on 21st-century skills. The study group of the research consisted of 211 female and 212 male students studying at Osman Gazi Secondary School, Hadımköy Örfi Çetinkaya Secondary School, and Mehmet Akif Ersoy Secondary School in Arnavutköy district. A relational survey model was used in our research. Internet addiction scale, 21st century skills scale, and personal information form were used as data collection tools. Correlation analysis was used to determine the relationship between internet addiction and 21st-century skills, and simple regression analysis was used to determine the power of internet addiction in predicting 21st-century skills. The study found that internet addiction significantly predicted 21st-century skills.

Keywords: 21st century skills, addiction, internet

ÖZ: İnternetteki içeriklerin genişlemesi kullanım oranını da arttırmakta ve bu artış beraberinde bağımlılık gibi birçok sorunu da getirmektedir. Ortaya çıkan bu bağımlılık türü kişilerin yaşadıkları çağın gerekliliklerini yerine getirmelerine engel olabilmektedir. Bundan dolayı bu araştırma ortaokul öğrencilerinin internet bağımlılığı ve 21. yüzyıl becerileri düzeylerini belirlemeyi ve internet bağımlılığının 21. yüzyıl becerilerinin üzerindeki etkisini belirlemeyi amaçlamıştır. Araştırmanın çalışma grubunu Arnavutköy ilçesinde bulunan Osman Gazi Ortaokulu, Hadımköy Örfi Çetinkaya Ortaokulu ve Mehmet Akif Ersoy Ortaokulundaki eğitim gören 211 kız ve 212 erkek öğrenci oluşturmuştur. Araştırmamızda ilişkisel tarama modeli kullanılmıştır. Veri toplama araçları olarak internet bağımlılığı ölçeği, 21. yüzyıl becerileri ölçeği ve kişisel bilgi formu kullanılmıştır. İnternet bağımlılığı ile 21. yüzyıl becerileri arasındaki ilişkinin belirlenmesi için korelasyon analizi ve internet bağımlılığının 21. yüzyıl becerilerini yordamadaki gücünün belirlenmesinde basit regresyon analizi yapılmıştır. Araştırma internet bağımlılığının 21. yüzyıl becerilerini anlamlı bir şekilde yordadığı saptanmıştır.

Anahtar sözcükler: 21. yüzyıl becerileri, bağımlılık, internet

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Giriş

Endüstriyel ekonomiden bilgiye dayalı ekonomiye geçiş sonucunda yaşam koşulları değişim sürecine girmiştir. Bu beceriler dijital çağ okuryazarlığı, yaratıcı düşünme, etkili iletişim ve üretkenliktir (Metiri Group, 2013). İnternet kullanımı tüm dünyada olduğu gibi Türkiye'de de hızla artıyor (Doğan ve Ersoy, 2020). Bu durum teknolojinin gelişmesinin toplum üzerinde önemli bir etki yarattığını ve insanlar için bir zorunluluk haline geldiğini göstermektedir. Özellikle çocukların ve gençlerin teknolojik cihazlarla sürekli iç içe olmaları onların bağımlı olmalarına neden olabiliyor. Bağımlılık, artık bilindiği gibi madde kullanımının ötesinde, yaşamın herhangi bir yerindeki farklı olgular ve deneyimler bağımlılığa neden olabilmektedir (Söner ve Yılmaz, 2018). Bu gerçekler ve deneyimler sonucunda ortaya çıkan türlerden birinin internet bağımlılığı olduğu söylenebilir. İnternet bağımlılığı, patolojik kumar oynamaya benzeyen madde alımını içermeyen bir dürtü kontrol bozukluğu olarak tanımlanmaktadır (Young, 1998; Whang, Lee ve Chang, 2003).

Literatürde 21. yüzyıl becerileri ile internet bağımlılığı arasındaki ilişkiyi inceleyen bir çalışma bulunmadığından bu çalışmanın literatürdeki bir boşluğu dolduracağı umulmaktadır. Bağımlılığın etkileri üzerine yapılan çalışmalarda sosyal beceriler ve problem çözme becerileri üzerine çalışmaların olduğu ancak 21. yüzyıl becerileri gibi çağımızın gereklilikleri üzerine çalışmalara ihtiyaç olduğu görülmüştür. Bu durum literatürde bir boşluk yaratmaktadır. Özellikle öğrencilerin çalışmalarını planlamada önemli olduğu düşünülüyordu. Öğrencilerin neredeyse tamamının internetle iç içe olması nedeniyle öğrencilerin internet bağımlılığının 21. yüzyılın gerektirdiği becerilere etkisine ilişkin çalışmalar henüz yapılmamıştır. Bu nedenle bu çalışma ortaokul öğrencilerinin internet bağımlılığının 21. yüzyıl becerilerine etkisini belirlemeyi amaçlamaktadır. Böylelikle öğrencilere yönelik yapılacak çalışmalarda 21. yüzyıl becerilerinin dikkate alınması ve çalışmaların bu noktada yapılması gerektiği noktasında yol gösterici sonuçlar elde edilmiştir.

Yöntem

Ortaokul öğrencilerinin internet bağımlılığı ile 21. yüzyıl becerileri arasındaki ilişkinin incelenmesini amaçlayan bu çalışmada ilişkisel tarama modeli kullanılmıştır. Araştırmanın çalışma grubunu İstanbul'un Arnavutköy ilçesinde bulunan Mehmet Akif Ersoy Ortaokulu, Osmangazi Ortaokulu ve Hadımköy Örfi Çetinkaya Ortaokulu'nda öğrenim gören gönüllü öğrenciler arasından kolay örnekleme yöntemiyle seçilen 423 ortaokul öğrencisi oluşturmaktadır. Katılımcıların 211'i (%49,9) kadın, 212'si (%50,1) erkekti. Araştırmanın demografik özelliklerini belirlemek amacıyla araştırmacılar tarafından hazırlanan "Kişisel Bilgi Formu", Taş (2019) izniyle "İnternet Bağımlılığı Ölçeği" ve Mete (2021) izniyle "21. Yüzyıl Ölçeği" kullanılmıştır. Veriler SPSS programında düzenlenerek uç değere sahip 7 veri analiz dışı bırakılmış ve geri kalan 423 veri ile analizler yapılmıştır.

Bulgular

Ortaokul öğrencilerinin internet bağımlılıklarının cinsiyet değişkenine göre anlamlı farklılık göstermediği belirlenmiştir. Ayrıca ortaokul öğrencilerinin 21. yüzyıl becerilerinin cinsiyet değişkenine göre anlamlı düzeyde farklılık gösterdiği tespit edilmiştir. Kız öğrencilerin 21. yüzyıl becerilerinin erkek öğrencilere göre anlamlı düzeyde yüksek olduğu belirlendi.

Ortaokul öğrencilerinin internet bağımlılığının ailenin ekonomik gelirine göre anlamlı bir farklılık göstermediği belirlendi. Aynı şekilde ortaokul öğrencilerinin 21. yüzyıl becerilerinin maddi gelirlerine göre benzer olduğu tespit edilmiştir.

Ortaokul öğrencilerinin internet bağımlılığının günlük internet kullanım süresi değişkenine göre anlamlı farklılık gösterdiği tespit edilmiştir. Son olarak günde ortalama 4-6 saat kullananların internet bağımlılığının, günde ortalama 6 saat ve üzeri olanlara göre anlamlı düzeyde daha yüksek olduğu belirlendi. Ortaokul öğrencilerinin 21. yüzyıl becerilerinin günlük internet kullanım süresi değişkenine göre oldukça farklılaştığı tespit edilmiştir.

Ortaokul öğrencilerinin internet bağımlılığı ile 21. yüzyıl becerileri arasında düşük düzeyde ve anlamlı bir ilişki olduğu tespit edilmiştir. Bu noktada internet bağımlılığı 21. yüzyıl becerilerindeki toplam varyansın yaklaşık %11'ini açıklamaktadır. Regresyon katsayılarının anlamlılığına ilişkin t-testi sonuçları incelendiğinde internet bağımlılığının 21. yüzyıl becerilerinin anlamlı bir yordayıcısı olduğu görülmüştür.

Tartışma ve Sonuç

Literatürde internet bağımlılığı ile 21. yüzyıl becerileri arasındaki ilişkiyi inceleyen hiçbir çalışma bulunmamaktadır. 21. yüzyıl becerileri sadece internet odaklı değil aynı zamanda bilgiyi başka alanlara aktarma, yeniliklere açık olma, sorumluluklarının bilincinde olma ve özgüveninin yüksek olmasıyla da ilgilidir. Bu durum, ancak zamanlarının çoğunu internette geçirmeleri durumunda bu becerilerin gelişmesine neden olmaktadır.

Bu çalışmanın katılımcılarının önemli bir çalışan grubu oluşturmasına rağmen aynı ilçede öğrenim gören öğrencilerden oluşması bir sınırlılıktır. Araştırma değişkenlerinin farklı gruplardaki değişime duyarlı olması, çalışma grubunun özelliklerinin ve bulguların diğer ilçelerde çalışan öğrencilere genellenebilirliğini sınırlamaktadır. Ancak araştırmadan elde edilen bulgu ve sonuçlara göre araştırmacılara gelecek araştırmalara zemin hazırlamak ve yol göstermek amacıyla bazı önerilerde bulunulabilir. İnternet bağımlılığına neden olan içerikler aileler tarafından sınırlandırılabiliyor. Bu durumda aileleri tarafından öğrencilere internet kullanımının azaltılmasına yönelik teşvik ödülleri verilebilir. Okulların internette geçirdikleri süre kodlama veya benzeri ders içerikleriyle zenginleştirilebilir. Bu noktada okul psikolojik danışmanları ebeveynlere 21. yüzyıl becerileri konusunda eğitim seminerleri verebilir. Bu sayede ebeveynler yapabilecekleri çalışmalar hakkında bilgi sahibi olabilirler.

INTRODUCTION

Living conditions entered the change process due to the transition from an industry-based economy to a knowledge-based economy. Working patterns and thinking methods differ, and working tools are almost unrecognizable compared to those 50 years ago (Griffin, McGaw & Care, 2012). This shows that in the 21st-century information age, individuals should be able to use mass media and educational technologies to find easy jobs, succeed, and become happy individuals. It is also expected that in the 21st century, individuals can transfer their knowledge to other subsections, be open to innovations, be aware of their responsibilities, and be full of confidence and respect for themselves and their environment. These skills are expected to be present in individuals in the 21st century. "21st Century Skills can be defined as" (Rock, 2017). According to EnGauge, an organization that pioneered ensuring that future generations acquire the skills necessary for the 21st century, technology changes how the world works (2003). As technology develops, the skill sets of those who use it should also grow. Today's students must develop techniques that quickly adapt to changes to remain competitive tomorrow. This organization has studied its 21st-century learning skills in four groups: "digital literacy, creative thinking skills, effective communication, and high efficiency" (EnGauge, 2003). 21st-century skills are the skills, knowledge, and expertise that individuals must master to succeed in work and life (Partnership For 21st Century Skills, 2013). Technological developments in the 21st century, political and economic changes, the development of communication tools, multiculturalism, and globalization are expected to fundamentally affect education and business (Çiner, 2021). As a result, in order for individuals to be successful in work and life in the 21st century, they need to acquire skills such as digital literacy, creative thinking, effective communication, and high productivity; they also need to be able to adapt to technological developments, globalization, and ever-changing world dynamics.

The changes that we experienced and will experience in the 21st century increase the importance of some skills. These skills are digital literacy, creative thinking, effective communication, and productivity (Metiri Group, 2013). Although an internationally recognized classification of skills expected from people in the 21st century has not yet been made, different scientists since the early 2000s (Atalay & Anagun, 2016; Kan'An, 2018; Lemke, 2002; Oral & Erkilic, 2022; Osman et al., 2010; Vilia & Candeias, 2020; Zorlu & Zorlu, 2021) and some establishment such as Technology Association in International Education (ISTE), World Economic Forum (WEF), Evaluation and Teaching of the 21stCentury Skills (ATSC21), Partnership for 21st Century Skills (P21), Northern Regional Education Laboratory (NCREL), American Colleges and Universities Association (AACU) and METIRI Group, tried to define 21stcentury skills and their consideration rules (Cansoy, 2018). These categories can be said that 21st-century skills reflect positive situations in individuals' lives. This concept of 21st-century skills is the concept of the roof that hosts within the categories mentioned above. However, in the general summer, 21st-century skills learning and innovation skills (creative thinking, critical thinking, problem-solving, communication, and collaboration), knowledge, media, and technology skills (information literacy, information, and communication technologies literacy and media literacy), life and career skills (flexibility and harmony, self-management, social skills, productivity, and accountability, leadership) is defined as three titles and 13 subcategories. (Partnership For 21st Century Skills, 2013). In conclusion, it is emphasized that for individuals to succeed in the 21st century, they must have skills such as digital literacy, creative thinking,

effective communication, and productivity. While these skills create positive situations in individuals' lives, they also require them to develop competencies to adapt to the ever-changing world conditions.

When the studies in the field summer are analyzed, it has been determined that the relationship between 21st-century skills and attitudes toward physics (Bao & Koenig, 2019; Erkılıç, 2020; Oral & Erkılıç, 2022; Osman, Soh & Arsad, 2010); science teaching and learning goals (Çolak, 2019; Osman & Marimuthu, 2010); academic success (Kan'an, 2018; Pana & Escarlos, 2017); teaching method with argumentation support (Ecevit & Kaptan, 2019); attitude towards Turkish lesson (Bal, 2018); coding training (Sayın & Seferoğlu, 2016) has been examined. This shows that 21st-century skills are focused on the impact of attitudes towards different courses, but studies on the psychological effects of 21st-century skills are limited. The technological innovations brought by the 21st century brought along with it problems. Especially for students in the age of education, spending most of their time on the Internet can cause psychological issues.

The development and change in the 21st century have affected technology in many ways. The internet, a communication network technology, has also been affected by these developments and changes, and the internet has become an important part of everyday life (Doğan, 2022). The internet, which was not used to be, is now available in many places. Internet use by people worldwide, in every income and age group, is increasing. Internet use is growing rapidly in Turkey as it is all over the globe (Doğan & Ersoy, 2020). This shows that the development of technology has affected society a lot and has become a need for people. Technology does not always have good aspects. Especially the fact that children and young people are constantly intertwined with technological tools can cause them to be addicted. The word addiction is derived from the Latin word "addicted," which means "bound" or "enslaved by ..." (Şahin, 2011). The word addiction can be defined as the person's physical, biological, or psychological state of being out of balance to the extent that there is a problem (Karaman & Kurtoğlu, 2009) and the person's loss of control over stuff or action (Aldemir et al., 2018). Beyond the abuse of things in its known sense, addiction can now cause different phenomena and experiences in any part of life (Söner ve Yılmaz, 2018). Investigators who demonstrate that playing online (online) through the Internet causes the creation of dopamine secretion indicate that this event is an efficient neurochemical condition that is considered effective in making addiction (İnan, 2010). Internet addiction can also be said to be one of the types that arise because of these facts and experiences. Internet addiction can be defined as an impulse control disorder that does not involve any stuff intake and similar to pathological gambling (Young, 1998; Whang, Lee & Chang, 2003); behavioral addiction, which is a variant of technology addiction (Griffiths, 1999); inability to resist the desire to use the internet more than necessary, the time spent without using the internet has lost its importance, the individual has excessive nervousness and aggression when leaving the internet, and the individual's social, family and business lives have disarranged over time (Young, 1996); uncontrolled and harmful use of the internet (Caplan, 2002); the pictures displayed by technological tools that computer or other devices with internet access occupy the person in a decent amount (Tarhan & Nurmedov, 2013). There is a general desire for excessive internet use in internet addiction. In conclusion, the development of technology in the 21st century has significantly impacted society, leading to the Internet becoming an indispensable part of daily life. However, this rapid advancement of technology can also cause negative situations such as technology addiction, especially among children and young people. Internet addiction is defined as individuals developing an uncontrollable urge to use the internet, which has negative effects on their social, family, and professional lives.

The deterioration of control over internet usage, although it encounters consequences that negatively affect life, its usage cannot be reduced or stopped, losing the importance of times when the internet is not used, excessive tension, restlessness, anger, irritability when left without the internet, the emergence of situations such as aggression and the order of individuals family, education, work or social life may be disrupted (Young, 2004). This shows that if the internet is addictive to a person, it brings many problems in their life. Supplying with the need for social interaction and support through the internet can increase the likelihood of an individual facing psychological problems while moving the individual away from real life. Increased time for internet use may result in less time for social activities, irritability, and fatigue (Durak & Şenol-Durak, 2010). In conclusion, addiction to the Internet can lead to many problems in an individual's life. The fact that the Internet fulfills the need for social interaction and support may increase the likelihood of psychological problems by distancing the individual from real life. Increased time spent on internet use may lead to less time for social activities, restlessness, and fatigue.

When the studies in the literature were investigated, it was observed that studies examining the relationship between depression and internet addiction (Ha et al., 2007), attention deficit hyperactivity symptoms (Yoo et al., 2004), impulsivity (Cao et al., 2007); social phobia (Yayan et al., 2016); emotional

self-awareness and stress (Çakmak-Tolan, Önkür & Aslan, 2022); privacy anxiety (Yazgan, 2022); learned strength (Bulut & Gonca-Zeren, 2021) are available. However, no studies have been found to examine the relationship between internet addiction and 21st-century skills. Hopefully, this study will fill a gap in the field this summer, as no literature examines the relationship between 21st-century skills and internet addiction. Research on the effects of addiction has shown that there are studies on social skills and problem-solving skills, but there are no studies on the requirements of our age, such as 21st-century skills. This creates a gap in the literature. It was considered necessary in planning the studies, especially for students. Because almost all students are intertwined with the internet, no study has been found on the effects of students' internet dependencies on the skills required by the 21st century. Therefore, this study aims to determine the impact of internet dependencies on secondary school students' 21st-century skills. In this way, 21st-century skills should be considered in the studies to be carried out for the students, and the guiding results should be obtained when the studies are done. From this point of view, the purpose of the research has been determined to detect the effects of internet addiction on 21st-century skills. The research questions are as follows:

1. Do secondary school students' internet dependencies and 21st-century skills differ significantly according to gender, economic income status, and daily average internet use?
2. Is there a meaningful relationship between middle school students' age, internet addictions, and 21st-century skills?
3. Do the internet dependencies of secondary school students affect 21st-century skills?

METHOD

Research Model

A relational screening model was used in this study, which aimed to examine the relationship between internet addiction and 21st-century skills of students studying in secondary school. The correlational survey model seeks to determine the presence or extent of exchange between two or more variables (Karasar, 2021).

Working Group

Mehmet Akif Ersoy Secondary School, Osmangazi Secondary School, and Hadımköy Örfi Çetinkaya Secondary schools in the province of Istanbul constitute 423 volunteer secondary school students selected by easy sampling method. The demographic characteristics of the participants in the study are presented in Table 1. According to this, 211 of the participants in the study were women, and 212 of them were men; the family economic status of 25 students is low, The financial situation of the family of 360 is average, and the family of 38 is high; finally it is stated that 173 of the participants of the study spent time on the internet between 0-2 hours per day, 134 of the participants spent time on the internet between 2-4 hours, 57 of the participants spent time on the internet between 4-6 hours and 59 of the participants spent time on the internet between 6 hours and above. In addition, it was stated that the age average of the participants in the research was 11.71.

Table 1.
Demographic information of students participating in the research

	N	%
Sex		
Female	211	49,9
Male	212	50.1
Economical situation		
Low	25	5,9
Average	360	85.1
High	38	9,0
Daily Internet usage time		
Between 0-2 hour	173	40,9
Between 2-4 hour	134	31,7
Between 4-6 hour	57	13,5
6 hours and above	59	13,9

Data Collections Tools

"Personal Information Form," which is prepared by researchers to determine demographic characteristics in the research, "Internet Addiction Scale" with permission from Taş (2019), and "21st Century Skills Scale" with authorization from Mete (2021) were used in the research.

Personal Information Form

This form, which researchers develop, includes gender, age, economic status of the family, and daily average internet usage time.

Internet Addiction Scale

The scale was developed by Taş (2019) for students aged 10-18 using the DSM-5 diagnostic criteria. The scale consists of 9 items and one size. The lowest value that can be taken from the scale is 9, while the highest score is 45. As the score from the scale increases, internet addiction increases—the item factor load values of the scale range from .548 to .707. According to the result of the validator factor analysis of the scale, the compliance indices were in acceptable ranges. (x^2/df= 1.984, RMR= .028, GFI= .95, AGFI= .91, CFI= .93, RMSEA= .068). The scale was reapplied one month apart for test-retest reliability, and the correlation value was determined to be .72. The Cronbach alpha value was .81. For this research, the Cronbach alpha value was recontrolled and found to be .84.

21st Century Skills Scale

The Mete (2021) scale was developed to measure the 21st-century skills of secondary school students, consisting of 12 items and is one size. The lowest value that can be taken from the scale is 12, while the highest score is 60. There is no reverse substance on the scale. As the score from the scale increases, 21st-century skills increase. According to the result of the validator factor analysis of the scale, the compliance indices were in acceptable ranges. (x^2/df= 1.981, GFI= .953, CFI= .942, RMSEA= .05[LO= .04, HI= .07]). The scale was reapplied 15 days apart for test-retest reliability. The correlation value was determined to be .72, and the Cronbach alpha value was .81. For this research, the Cronbach alpha value was recontrolled and found to be .749.

Data Collection and Analysis

Primarily, the collected data were transferred to the SPSS program. The data were arranged here, and 7 data with a value were discarded from the analysis, and analyses were made with the remaining 423 data. It has been determined that the data exhibits a normal distribution in the range of -1 and +1, as in Table 2 (Morgan et al., 2019). Parametric tests were used to display the data in a normal distribution. A t-test was used to determine whether internet addiction and 21st-century skills differ significantly according to the gender variable, and a one-way variance analysis (ANOVA) was used to determine whether the family's economic situation and daily average internet usage status differ. In addition, correlation analysis was conducted to find the relationship between age, internet addiction, and 21st-century skills, and a simple regression analysis was conducted to determine the level of internet addiction to predict 21st-century skills.

Table 2.

Internet addiction of secondary school students and descriptive analysis of 21st century skills

	Number	Mean	Standard Deviation	Skewness	Kurtosis
Internet Addiction	423	20.9976	7.78122	.609	-.159
21st Century Skills	423	46.3357	6.32799	-.157	-.417

Ethical Permits of the Research

In this study, the principles of research ethics were observed, and permissions were obtained from the necessary ethics committee. Within the scope of ethics committee permission, the document numbered 16/02/2024-2024/01 was obtained from Istanbul Sabahattin Zaim University Scientific Research and Publication Ethics Committee on 16.02.2024

RESULTS

T-tested to determine whether secondary school students' internet dependencies and 21st-century skills differ significantly according to the gender variable; the results are presented in Table 3.

Table 3.

T-test results according to gender variable.

	Variable	N	x̄	Ss	Sd	t	p
Internet Addiction	Female	211	20.85	8.30	421	.368	.713
	Male	212	21st14	7.25			
21st Century Skills	Female	211	46.99	6.12	421	2.132	.034
	Male	212	45.68	6.47			

According to the data in Table 3 according to the gender variable, it has been determined that the internet dependencies of middle school students do not differ significantly according to the gender variable. (t= .368, p>.05). it has also been determined that 21st-century skills of secondary school students differ significantly according to the gender variable. (t= 2.132, p<.05). It has been determined that female students' 21st century skills (x̄ = 46.99) are significantly higher than male students (x̄= 45.68).

One-way analysis of variance (ANOVA) was conducted to determine whether secondary school students' internet addictions and 21st-century skills differ significantly according to the average monthly income of the families, and the results are presented in Table 4.

Table 4.
One-way analysis of variance results according to monthly income variable

	Source of the Variance	Total Sum of Squares	Sd	Mean Square	F	p	Significant Difference
Internet Addiction	Between groups	167,500	2	83,750	1,386	0,251	
	Within groups	25383,498	420	60,437			
	Total	25550,998	422				
21st Century Skills	Between groups	126,000	2	63,000	1,578	0,208	
	Within groups	16772,331	420	39,934			
	Total	16898,331	422				

According to the data in Table 4, the internet dependencies of secondary school students did not differ significantly according to the family's economic income situation. [$F_{(2,420}$ = 1.386, p>.05]. Likewise, it has been determined that the 21st-century skills of secondary school students are similar according to their economic income situation. [$F_{(2,420)}$ = 1.578, p>.05].

One-way variance analysis (ANOVA) has been performed to determine whether secondary school students' internet dependencies and 21st-century skills differ significantly compared to the daily internet usage time variable, and the results are presented in Table 5.

Table 5.
One-way analysis of variance results according to daily internet usage time variable

	Source of the Variance	Sum of Squares	Sd	Mean Squares	F	p	Significant Difference
Internet Addiction	Between groups	6848,621	3	2282,874	51,145	0,000	0-2 hours between>2-4 hours between, 4-6 hours between 6 hours and above;
	Within groups	18702,377	419	44,636			2-4 hours between> 4-6 hours between, 6 hours and above;
	Total	25550,998	422				4-6 hours between> 6 hours and above
21st Century Skills	Between groups	815,582	3	271,861	7,083	0,000	6 hours and above<0-2 hours between, 2-4 hours between, 4-6 hours between
	Within groups	16082,748	419	38,384			
	Total	16898,331	422				

According to the data in Table 5, it has been determined that the internet dependencies of secondary school students differ significantly according to the daily internet usage time variable [$F_{(3,419)}$ = 51.145, p<.05]. According to the LSD test result to find out which groups this difference is between, the average daily dependencies of internet users between 0-2 hours per day (x̄=17.2023) are between 2-4 hours per day (x̄=20.8507), it is significantly lower than those between 4-6 hours (x̄=24.9123) and 6 hours and above (x̄= 28.6780). In addition, it has been determined that the internet dependencies of those who use the internet between 2-4 hours per day (x̄=20.8507) are significantly lower than those between 4-6 hours (x̄=24.9123) and 6 hours and above (x̄=28.6780). Finally, it has been determined that the internet dependencies of those with an average of 4-6 hours per day (x̄=24.9123) are significantly higher than those with an average of 6 hours and above (x̄=28.6780).

It has been determined that 21st Century skills of secondary school students differ significantly according to the daily internet usage time variable [$F_{(3,419)}$ = 7.083, p<.05]. According to the LSD test result to find out which groups this difference is between, it has been determined that the average of 6 hours and above (x̄=43.2034) daily internet users' 21st-century skills are significantly lower than those between 0-2 hours (x̄=47.3295), 2-4 hours (x̄=46.7836) and 4-6 hours (x̄= 45.5088).

Correlation analysis was conducted to determine the relationship between secondary school students' internet dependencies and 21st-century skills, and the results are presented in Table 6. Correlation analysis was conducted to determine the relationship between secondary school students' internet dependencies and 21st-century skills, and the results are presented in Table 6.

Table 6.
Correlational Relationship between Internet Addiction and 21st-Century Skills

	1	2	3
1. Internet Addiction	1		
2. 21st Century Skills	-,326**	1	
3. Age	.280**	-.082	1

**p<.01

Pearson correlation analysis was conducted to determine the relationship between secondary school students' internet dependencies and 21st-century skills, and it has been determined that there is a moderate negative relationship between internet dependencies and 21st-century skills (r= -.326, p< .01). In other words, as internet dependencies increase, 21st-century skills decrease. Again, it has been determined that there is a negative relationship between internet addiction and age, which shows that as the age level of students increases, internet dependencies increase (r= .280, p< .05). Finally, it has been determined that secondary school students do not have a meaningful relationship between their 21st Century skills and their ages (r= -.082, p< .05).

Simple regression analysis was conducted to examine the impact of secondary school students' internet dependencies on 21st-century skills, and the results are presented in Table 7.

Table 7.
Simple regression analysis findings on the fatigue of 21st-century skills

	B	Standard Deviation	β	T	p	Dual r	Partial R
(Instant)	39,566	2,650		14,933	0,000		
1. Internet Dependency	-0,401	0,057	-0,326	-7,073	0,000	-0,326	-0,326

R= .326	R²= .106
F(1,421)= 50.024	p= .000

When Table 7 was examined, it was determined that secondary school students had a low and meaningful relationship with their internet dependencies. At this point, internet addiction explains about 11% of the total variance in 21st-century skills. When the t-test results regarding the significance of the regression coefficients are examined, it is seen that internet addiction is a meaningful predictor of 21st-century skills.

DISCUSSION, CONCLUSION and RECOMMENDATIONS

This study aims to determine the effects of internet dependencies on secondary school students' 21st-century skills. It has been determined that the internet dependencies of secondary school students do not differ significantly by gender. When the studies in the literature were examined, it was seen that there were findings that internet addiction did not differ according to gender and supported the research results (Aksoy & Ünübol, 2006; Anlayışlı & Bulut Serin, 2019; Kim et al., 2006; Lee et al., 2007; Taş, 2018). Besides, the findings that women are more internet addicts than men in the literature (Young, 1998), as well as the findings that men are more internet addicts than women (Dalbudak et al., 2013; Gökçearslan & Günbatar, 2012; Ko et al., 2009; Monacis et al., 2017). These findings do not coincide with the results of the research. Internet use was the first time in Türkiye only had access to internet cafes; there was a limited reach. However, the spread of internet use with mobile phones or tablets has enabled everyone to reach equally, regardless of whether they are men or women. It can be said that this situation caused internet addiction not to differ in both sexes. Again, this study found that the internet dependencies of secondary school students differ significantly compared to the daily internet usage time variable. According to the LSD test result to find out which groups this difference is between, the average daily dependencies of internet users between 0-2 hours per day are significantly lower than those between 2-4 hours per day, 4-6 hours, and 6 hours and above. In addition, it has been determined that the internet dependencies of those who use the internet between 2-4 hours per day are significantly lower than those between 4-6 hours and 6 hours and above. Finally, it has been determined that the internet dependencies of those with an average of 4-6 hours per day are significantly higher than those with an average of 6 hours and above per day. In general, it can be said that daily internet usage time and internet addiction are increasing comparatively. When the studies in the literature were examined, it was observed that internet addiction increased as the internet usage time increased in general (Anlayışlı & Bulut Serin, 2019; Balcı & Gülnar, 2009; Balta ve Horzum, 2008; Gökçearslan & Günbatar, 2012; Thadani & Cheung, 2011; Tsai & Lin, 2003; Yılmaz, 2010). Although the internet usage purposes of secondary school students differ, their usage times can create emotions they cannot resist against the internet. It can be said that these feelings have caused internet addiction because they can weaken students' self-control skills on the Internet. Finally, this study determined that the internet dependencies of secondary school students did not differ significantly according to the economic income situation. When the studies in the literature are examined, there are findings that there is no significant relationship between economic income and internet addiction (Çakır-Balta & Horzum, 2008; İnan, 2010), as well as findings that internet addiction increases as economic income increases (Batıgün & Kılıç, 2011; Bayhan, 2011; Bayraktar, 2001; Günüç, 2009). The use of the internet in portable technological tools such as telephones and tablets in recent years has expanded the use of the internet. It can be said that reaching these technological devices with low or high economic income leads to internet dependencies not differentiating according to economic income. Finally, it has been determined that there is a positive relationship between internet addiction and age. In other words, as the age level of secondary school students increases, their internet dependencies increase. Findings that internet addiction increases as age increases (Kaltiala-Heino, Lintonen & Rimpela, 2017; Karacic & Oreskovic,

2017; Mayda et al., 2015; Özdemir et al., 2015) when the studies in the literature are examined support the research results. However, the presence of studies that do not have a meaningful relationship between age and internet addiction (Aslan & Yazıcı, 2016; Topçu, 2020; Yüksel & Yılmaz, 2016) does not coincide with the results of the research. Secondary school students enter adolescence as their age increases. This leads to their family independence and responsibility for their behavior. As students become independent in this way, they spend time on the Internet without permission from their families. It can be said that the age level has increased, which may cause students to lose control over the internet and increase their internet dependencies. The research determined that the 21st-century skills of secondary school students differ significantly according to the gender variable. It has been determined that female students' 21st-century skills are significantly higher than male students. When the studies in the literature are examined, the findings that women have higher 21st-century skills than men (Bozkurt-Çakır, 2016; Karakaş, 2015; Orhan-Göksun, 2016) support the research results. However, in the literature, there are also findings that 21st-century skills do not differ significantly by gender (Gürültü, Aslan & Avcı, 2018; Gürültü, Aslan & Avcı, 2020; Kozikoğlu & Özcanlı, 2020). These findings do not coincide with the results of the research. Until recently, there were negative educational approaches for female students in Türkiye. Therefore, country policies are organized towards positive discrimination to increase female students' education level. Positive discrimination of female students at this point has led them to become more aware of their educational periods. Studies to increase students' educational levels have helped them improve themselves and acquire the 21st-century skills they require. Since this positive discrimination increases women's self-confidence, it can be said that it ensures that women's 21st-century skills are higher than men's. Again, the research determined that 21st-century skills do not differ significantly according to economic income. When the studies in the literature are examined, the findings that 21st-century skills do not differ significantly depending on economic income (Demir, 2022; Zeybek, 2019) align with the research results. However, the fact that there are positive-side meaningful relationships between economic income and 21st-century skills (Dinler, Simsar & Yalçın, 2021; Karadaş et al., 2021) in the literature does not coincide with the research results. The social life experiences of the students in the group where the data is collected are similar. Students with low and medium economic incomes are especially able to reach the same opportunities in their environment and schools because they benefit from the social opportunities of the municipalities. Therefore, it can be said that 21st-century skills do not differ significantly according to the state of economic income. Again, it has been determined that the 21st-century skills of secondary school students differ significantly compared to the daily internet usage time variable. According to the results of the LSD test performed to find out between which groups this difference exists, it was determined that the 21st-century skills of those who use the Internet for 6 hours or more per day on average are significantly lower than those who use the Internet for 0-2 hours, 2-4 hours and 4-6 hours. In the literature, few studies examine the relationship between 21st-century skills and daily internet usage time. These studies showed that 21st-century skills did not differ significantly from internet usage times (Kolata, 2022; Korucu & Ünüvar, 2020). These findings do not coincide with the results of the research. Increasing internet usage time increases the trend to the negative consequences of the internet, and it can start using the internet to provide social benefits and comfort for individuals. It can prevent the development of 21st-century skills. Finally, it has been determined that there is no meaningful relationship between 21st-century skills and secondary school students' age levels. When the studies in the literature are examined, it has been observed that there are no findings that there is no relationship between 21st-century skills and age. When the studies in the literature are examined, there have been findings that there is no relationship between 21st-century skills and age (Altunkaya & Çelik, 2020; Çiğilli, 2020; Elekoğlu & Demirdağ, 2020). In addition, the study of Tungagür and Aydın (2021) showed that 21st-century skills decreased as the age level increased. This finding does not coincide with the results of the research. Since this study was conducted only for secondary school students, age ranges do not differ much. It can be said that these age ranges are narrow, ensuring that 21st-century skills are close together.

Pearson correlation analysis was conducted to determine the relationship between secondary school students' internet dependencies and 21st-century skills, and it was found that there was a moderate negative relationship between internet addiction and 21st-century skills. At this point, internet addiction explains about %11 of the total variance in 21st-century skills. When the t-test results regarding the significance of the regression coefficients are examined, it is seen that internet addiction is a meaningful predictor of 21st-century skills. In the literature, studies were not found to explore the relationship between internet addiction and 21st-century skills. 21st-century skills are internet-oriented and related to the ability to transfer information to other areas, be open to innovations, be aware of their responsibilities, and have high self-confidence. This situation causes these skills not to develop because they spend most of their time online.

Although the participants constitute a significant group of employees in this study, it is a limitation that they consist of students in the same district. The fact that the research variables are sensitive to change in different groups limits the generalization of the characteristics of the working group and the findings to students working in other districts. However, according to the findings and results obtained from the research, some suggestions can be made to the researchers to prepare the ground and guide the following research. Families may be restricted by content that causes internet addiction. In this case, encouraging rewards for reducing the internet can be given to students by families. During the time spent by schools on the Internet, enrichment can be made with coding or similar course content. At this point, school psychological counselors can give training seminars for 21st-century skills to parents. In this way, information can be made about parents' work.

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