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EXAMINATION OF THE RELATIONSHIP BETWEEN DIGITAL LITERACY AND CYBERLOAFING LEVELS OF GIFTED STUDENTS

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Abstract

The purpose of this study is to investigate the levels of cyberloafing and digital literacy that are present among gifted secondary school students and to find the correlation between these two factors. The correlational screening model was used in this study. Participants were 179 secondary school (5th, 6th, 7th, and 8th grade) students enrolled in Science and Art Centers (SAC), who were identified as gifted in one or more fields. The participant information sheet, the Digital Literacy Scale and the Smartphone Cyberloafing Scale were used for the data collection. Data analysis was performed using SPSS 22 software. The mean scores were determined in order to gain an understanding of the levels of cyberloafing and digital literacy as shown by gifted students. The Pearson correlation test was used to investigate the association between digital literacy levels and cyberloafing levels of gifted students. The results showed that gifted students have high levels of digital literacy and low levels of cyberloafing. Pearson's correlation test results reveal that there was no significant relationship between gifted students' digital literacy levels and cyberloafing levels ($p>.05$, $r= -.084$). It is recommended to explore the factors influencing the cyberloafing levels of gifted students, as well as to analyze the cyberloafing and digital literacy of gifted students with different and larger samples, backed by qualitative studies in various age groups.

Keywords: gifted student; digital literacy; cyberloafing; correlational screening model

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ÖZEL YETENEKLİ ÖĞRENCİLERİN DİJİTAL OKURYAZARLIK VE SİBER AYLAKLIK DÜZEYLERİ ARASINDAKİ İLİŞKİNİN İNCELENMESİ

Öz

Çalışmanın amacı, Bilim Sanat Merkezinde (BİLSEM) eğitim gören özel yetenekli ortaokul öğrencilerin dijital okuryazarlık ile siber aylaklık düzeylerinin ve bu iki değişken arasındaki ilişkinin incelenmesidir. Araştırma ilişkisel tarama modeline uygun olarak yürütülmüştür. Araştırmanın katılımcılarını; Bilim ve Sanat Merkezlerinde (BİLSEM) öğrenim gören ve bir veya daha fazla alanda özel yetenekli tanısı almış 179 ortaokul (5., 6., 7. ve 8. sınıf) öğrencisi oluşturmaktadır. Verilerin toplanmasında; kişisel bilgi formu, Ng tarafından (2012) geliştirilen ve Hamutoğlu, Canan Güngören, Kaya Uyanık ve Gür Erdoğan (2016) tarafından Türkçe'ye uyarlaması yapılan Dijital Okuryazarlık Ölçeği ile Blau, Yang ve Ward-Cook (2006) tarafından geliştirilen ve Polat (2018) tarafından Türkçe'ye uyarlaması yapılan Derslerde Akıllı Telefon Siber Aylaklık Ölçeği kullanılmıştır. Verilerin analizi SPSS 22 yazılımında gerçekleştirilmiştir. Özel yetenekli öğrencilerin dijital okuryazarlık ve siber aylaklık düzeylerinin anlaşılması için puan ortalamaları hesaplanmıştır. Özel yetenekli öğrencilerin dijital okuryazarlık düzeyleri ile siber aylaklık düzeyleri arasındaki ilişkinin incelenmesi için Pearson korelasyon testi yapılmıştır. Araştırmanın sonucunda, özel yetenekli öğrencilerin dijital okuryazarlık düzeylerinin yüksek, siber aylaklık düzeylerinin düşük olduğu anlaşılmıştır. Pearson korelasyon testi sonuçları, özel yetenekli öğrencilerin dijital okuryazarlık düzeyleri ile siber aylaklık düzeyleri arasında anlamlı bir ilişki olmadığı ortaya koymaktadır ($p>.05$, $r= .084$). Özel yetenekli öğrencilerin siber aylaklık düzeylerini etkileyecek farklı değişkenlerin araştırılması, özel yetenekli öğrencilerin siber aylaklıkları ile dijital okuryazarlıklarının farklı ve daha geniş örneklemlerde, farklı yaş gruplarında nitel çalışmalarla da destelenerek incelenmesi önerilmektedir.

Anahtar Kelimeler: özel yetenekli öğrenci; dijital okuryazarlık; siber aylaklık

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Geniş Özet

Teknoloji, özel yetenekli öğrenciler için eğitim programlarını ve öğretimi farklılaştırmak için önerilen ve "büyük ekolayzır" olarak adlandırılan bir araçtır (Periathiruvadi & Rinn, 2012; Sprague & Shaklee, 2015; Siegle, 2014; Tomlinson, 2017). Özel yeteneklilerin eğitiminde teknoloji kullanımının olanak tanıma (işleri gerçekleştirme), geliştirme (işleri daha iyi hale getirme) ve dönüşüm (işleri farkı yapma) olmak üzere üç ana işlevi vardır (Chen ve diğerleri, 2013). Teknolojinin özel yetenekliler eğitiminin verimliliğini ve kalitesini artırma konusunda büyük bir potansiyele sahip olduğu yaygın olarak kabul edilmektedir; hatta bazı bilim insanları, belirli teknolojilerin özellikle özel yetenekli öğrenciler için faydalı olduğunu iddia etmektedirler (Pyryt, 2009; Shavinina, 2009; Siegle, 2005). Özel yetenekli öğrencilerin bilgi ve iletişim teknolojilerini (BİT) kullanım amaçları bilgi edinme ve araştırma, iletişim ve etkileşim, engel ve yetersizlikleri giderme, uzaktan eğitim/e-mentörlük, proje ve iş birliği, sanal geziler, çoklu ortam üretimi ve paylaşımı ve öğretim materyali sağlama başlıkları altında toplanabilir (Öngöz & Sözel, 2018). Özel yetenekli öğrenciler de kendi eğitimleri için teknolojinin ne denli önemli olduğunun farkındadır (Mann, 1994) ve BİT becerilerini geliştirmeleri halinde gelecekte çok daha başarılı olacaklarına inanmaktadırlar (Kurnaz, Yurt & Çiftçi, 2014). Hem BİT becerilerini geliştirme hem de BİT destekli eğitimlerden özel yetenekli öğrencilerin iyi düzeyde yararlanmasında, BİT becerilerinin etkili kullanımı etkili olmaktadır. Bu noktada, bilgiye ulaşmak, bilgiyi analiz etmek, yeni bilgi üretmek ve başkalarıyla iletişim kurmak için BİT'i etkili kullanma becerisi olarak tanımlanan dijital okuryazarlık kavramı önem kazanmaktadır. BİT kullanımının intihal, siber zorbalık, uygunsuz içeriği görüntüleme, amacı dışında kullanma ve teknoloji bağımlılığı gibi birçok olumsuz sonucu da vardır (Siegle, 2017). BİT'in ders esnasında istenmedik, öngörülemeyen, aşırı, kontrolsüz ya da düzensiz kullanımı anlamına gelen siber aylaklık (Alyahya & Alqahtani, 2022), özel yetenekli öğrencilerin eğitimi ve BİT teknolojileri bağlamında dijital okuryazarlıkla birlikte önemli bir kavram olarak karşımıza çıkmaktadır.

Eğitim ortamlarında siber aylaklık, öğrencilerin ders saatleri içerisinde, interneti dersle ilgisi olmayan işler için kullanma eğilimi ve/veya davranışı olarak tanımlamaktadır (Kalaycı, 2010). Her öğrencinin teknolojik cihazlara ve internete ulaşımının kolaylaşması öğrenme öğretme süreçlerinde siber aylaklık davranışının sergilenmesi endişesini arttırmıştır (Baturay & Toker, 2015). Eğitim ortamlarında siber aylaklık davranışları, öğretim üyeleri (Zoghbi-Manrique-de-Lara, 2012), sınıf öğretmenleri (McBride, Milligan & Nichols, 2013), yöneticiler ve farklı branşlardan öğretmenler (Akbulut ve diğerleri, 2016; Katıer, 2019); üniversite öğrencileri (Akbulut vd., 2016; Çok, 2018; Dursun, Dönmez & Akbulut, 2018; Ergün & Altun, 2012; Şenel, Günaydın, Sarıtaş & Çiğdem, 2017; Taneja, Fiore & Fischer, 2015), lisansüstü öğrenim öğrencileri (Bağrıacık Yılmaz, 2017), lise öğrencileri (Akbulut ve diğerleri, 2016; Baturay & Toker, 2015; Gezgin, Kamalı Arslantaş & Şumuer, 2018) ve ortaokul öğrencileri (Polat, 2018, Tarıverdi & Karaca, 2018) örneklemlerinde çalışılmıştır. Özel yetenekliler ve siber aylaklık konusunda yapılmış bir çalışma bulunmamaktadır. Bu çalışmanın amacı, özel yetenekli öğrencilerin dijital okuryazarlık ile siber aylaklık düzeylerinin ve dijital okuryazarlıkları ile siber aylaklıkları arasındaki ilişkinin incelenmesidir. Bu amaca yönelik olarak şu sorulara yanıt aranmıştır:

1. Özel yetenekli öğrencilerin dijital okuryazarlık ve siber aylaklık düzeyleri nedir?
2. Özel yetenekli öğrencilerin dijital okuryazarlık düzeyleri ile siber aylaklık düzeyleri arasında bir ilişki var mıdır?

Araştırma, bağımlı ve bağımsız değişkenlerin arasındaki ilişkileri değerlendirmesine imkân sağlayan korelasyonel (ilişkisel) bir çalışma olarak tasarlanmıştır (Karasar, 2016). Özel yetenekli öğrencilerin dijital okuryazarlık ve siber aylaklık düzeyleri arasındaki ilişkinin ne yönde ve ne ölçüde olduğu belirlenmeye çalışılmıştır. Araştırmanın çalışma grubunu, Türkiye'nin Akdeniz ve Marmara bölgelerinde bulunan yoğun nüfuslu iki ile ait Bilim ve Sanat Merkezlerinde (BİLSEM) 2020-2021 eğitim öğretim yılında öğrenim gören 179 özel yetenekli öğrenci oluşturmaktadır. Araştırmanın verileri kişisel bilgi formu, derslerde akıllı telefon siber aylaklık ölçeği, dijital okuryazarlık ölçeğinden Google Formlar aracılığı ile çevrimiçi dersler sırasında elde edilmiştir. Veri toplama süreci acil uzaktan eğitim sürecinde gerçekleşmiştir. Öğrenciler bu süreçte hem BİLSEM'lerdeki hem de örgün eğitim aldıkları okullardaki derslerine Zoom, EBA, Microsoft Teams gibi çevrimiçi platformları kullanarak devam etmişlerdir. Veri toplama sürecinin başında öğrencilere hem BİLSEM'lerdeki hem de örgün eğitim aldıkları kurumlarda acil uzaktan eğitim sürecinde katıldıkları çevrimiçi dersleri düşünmeleri ve siberaylaklık davranışlarına yönelik soruları bu bağlamda yanıtlandırmaları hatırlatılmıştır.

Özel yetenekli öğrencilerin dijital okuryazarlık puanlarının 17 ile 85 arasında olduğu ve puan ortalamasının 63.70 olduğu anlaşılmıştır. Siber aylaklık puanları 16 ile 53 arasında değişmekte ve puan ortalaması 21.37'dir. Bu bulgulara dayanarak özel yetenekli öğrencilerin dijital okuryazarlık düzeylerinin yüksek, siber aylaklık düzeylerinin düşük düzeyde olduğu ifade edilebilir. İkinci araştırma sorusunun (özel yetenekli öğrencilerin dijital okuryazarlık düzeyleri ile siberaylaklık düzeyleri arasında bir ilişki var mıdır?) analizi için gerçekleştirilen Pearson Korelasyon Analizi sonucunda, iki değişken arasında anlamlı bir ilişki olmadığı tespit edilmiştir ($p>.05$, $r= .084$). Bu bulguya göre özel yetenekli öğrencilerin dijital okuryazarlık düzeyleri ile siber aylaklık düzeyleri arasında bir ilişki yoktur.

Öğrencilerin BİT'i her zaman eğitim amaçlı kullanmadıkları ve ders esnasında zamanlarını boşa harcadıkları çok sayıda araştırma tarafından ortaya konmuştur (Akgün, 2020; Bağrıaçık Yılmaz, 2017; Baturay & Toker, 2015). Siber aylaklık öğrenciler arasında giderek yaygınlaşan bir davranış olup, sebeplerinin ve siber aylaklığı etkileyebilecek değişkenlerin belirlenmesi ve anlaşılması, eğitimcilere siber aylaklık davranışlarını önlemede önemli ölçüde yardımcı olacaktır (Bağrıaçık Yılmaz, 2017). Bu amaç doğrultusunda da son zamanlarda eğitim alanında dijital araç kullanımından kaynaklanan siber aylaklığın araştırıldığı pek çok çalışma yapılmıştır. Güncel çalışmada, özel yetenekli öğrencilerin dijital okuryazarlık düzeyleri ile siber aylaklık düzeyleri arasındaki ilişki incelenmiştir.

Güncel araştırmanın sonucunda, özel yetenekli ortaokul öğrencilerinin dijital okuryazarlık düzeyleri yüksek bulunurken, zorunlu uzaktan eğitim sürecindeki siber aylaklık düzeyleri düşük olarak bulunmuştur. BİLSEM'lerde yürütülmüş olan önceki çalışmalarda, özel yetenekli öğrencilerin teknoloji ve tasarıma yönelik eğitim teknolojileri öz yeterlikleri ve bilgi ve teknoloji okuryazarlığı becerileri yüksek düzeyde bulunmuştur (Bayra, 2020; Nacaroğlu, 2020). Özel yetenekli öğrencilerin yeni teknolojilere uyum sağlamasına olanak tanıyan, üst düzey düşünmelerini destekleyen ve teknolojileri kullanıp teknolojiyle üretim yapmalarını sağlayan birçok öğretimsel süreci deneyimleri özel yetenekli öğrencilerin dijital okuryazarlık becerilerine katkı sağlamış olabilir (Avcu & Er, 2020a, 2020b; Avcu, Ayverdi, Ülker & Karakış, 2020; Ayverdi & Öz; 2021; Avcu & Ayverdi, 2022; Avcu & Yaman, 2022; Bozok, Geniş & Avcu, 2020; Çevik ve diğerleri, 2021; Del Siegle, 2023; Önal & Önal, 2021). Güncel çalışmaların sonuçları doğrultusunda, özel yetenekli öğrencilerin 21. yüzyıl becerilerinden biri olan dijital okuryazarlık becerisini edinmesinde BİLSEM'lerde özel yetenekli öğrencilere yönelik verilen eğitimle başarıldığı yorumu yapılabilir (Nacaroğlu, 2020).

Önceki çalışmalar öğrencilerin siber aylaklık davranışı sergilemesinde etkili olan bazı faktörlere dikkat çekmişlerdir. Bunlardan birincisi dersler sırasında deneyimledikleri can sıkıntısıdır (Varol & Yıldırım, 2018). Dersler sırasında sıkılan öğrenciler, can sıkıntısı ile baş edebilmek için siber aylaklık davranışı gösterebilmektedirler (Fu ve diğerleri, 2021; Pielot, Dingler, Pedro & Oliver, 2015). İkinci faktör, öğrencinin dersin öğretmenini sevmemesi ya da öğretmen ile bir sorun yaşamasıdır. Öğrenciler öğretmeni sevmedikleri zaman, ders esnasında öğretmeni dinlemek yerine siber aylaklık gibi bir şeyle meşgul olma eğilimindedirler. Dersin konusunun öğrenciye ilgi çekici gelmemesi de bir diğer faktör olarak karşımıza çıkmaktadır. Bu durumda öğrenciler ilgilerini daha çok çeken bir görevle ilgilenmektedirler (Dmour, 2021). Ayrıca öğrenciler, derslerde öğretmen tarafından yönlendirilen anlamadıkları sorulara anında cevap bulmak için akıllı telefonları kullanma eğiliminde olduklarında veya öğrenme ile ilgili beklentileri olmadığında, derslerde akıllı telefonları ile daha fazla ilgilenebilmektedirler (Alanoğlu & Karabatak, 2021). Öğretmenin ders esnasında kullandığı öğrenim stratejileri de öğrencilerin siber aylaklık davranışlarında etkili bir faktör olarak karşımıza çıkmaktadır (Yılmaz & Yurdugül, 2018). Buna ek olarak, internet kullanımı zamanla özdenetimden yoksun çocuklar için ciddi bir sorun haline gelebilmektedir. Bir araştırma sonucuna göre, işyerinde siber aylaklık düzeyi ile öz kontrol becerisi arasında negatif bir ilişki vardır (Mercado, Giordano & Dilchert, 2017). Eğitimin aniden sanal öğrenme ortamlarına kayması durumunda ise, özdenetimi düşük olan öğrencilerin kendi öğrenme süreçleriyle başa çıkamama, geride kalma ve okulu bırakma riskiyle karşı karşıya kalmasına neden olabilir (Poon, Lee & Ong, 2012). Öğrencinin etkili bir öğrenme yönetimine sahip olması, çevrimiçi dersler sırasında siber aylaklık sebebiyle dikkatleri dağılmayacak ve çalışmalarına devam edebileceklerdir (Koay & Poon, 2022). Son olarak, Gerow, Galluch ve Thatchar (2010) siber aylaklık davranışının öncelikle bireyle ilgili olduğunu ancak çevreden de etkilenebileceğini vurgulamışlardır. Mevcut çalışmada, özel yetenekli öğrencilerin siber aylaklık davranışının düşük bulunmasının sebebi bu faktörlerle ilişki olabilir. Bu sonucun altında yatan sebeplerin ortaya çıkarılması için, daha detaylı çalışmaların yapılmasına ihtiyaç vardır. Özel yetenekli öğrencilerin dijital okuryazarlık düzeyleri ile siber aylaklık düzeyleri arasında bir ilişki bulunmamıştır. Dijital okuryazarlık becerisi artan özel yetenekli öğrencilerin siber aylaklık davranışlarında azalması yönünde bir ilişki olması beklenen bir durum olabilir. Ancak alanyazında özel yetenekli öğrencilerden oluşan bir örneklemde bu iki değişkenin ilişkisini inceleyen başka bir araştırmaya rastlanmamıştır. Her ne kadar bu iki değişken arasında anlamlı bir ilişki bulunmasa da sonuçların genellenebilmesi ve daha net bir sonuca varabilmek amacıyla özel yetenekli öğrenciler ile aynı konuda gerçekleştirilecek daha fazla çalışmaya ihtiyaç duyulmaktadır.

Introduction

In today's rapidly globalizing and post-modern world, the rapid technological advancement and the opportunities presented by technology have brought about changes in individuals' skills, communication, socialization, learning preferences, creative thinking, and many other aspects of education, and they have paved the way for a new era in education. In this aforementioned new process, wherein technology plays a significant role, students with their unique structures have begun to be acknowledged as individuals, and the cognitive, affective, and physical variables that comprise these structures have played a crucial role in planning their educational processes (Heacox, 2012; Morrison, Ross & Kemp, 2012; Olivia & Gordon, 2018; Tomlinson, 2017). Individual differences-related variables have started to be thoroughly examined in the educational sciences literature (Öz, 2020). As a consequence of

an increase in research focused on the student as an individual, it has been recognized that technology has manifested itself in education and that students' communication and interaction methods with themselves, their classmates, and their teachers have also changed noticeably (Yiğitoğlu & Erişen, 2021). Students who have grown up with technology are now referred to as digital natives as a result of these changes, which have been made possible by their inclination to utilize technology compared to earlier periods (Prensky, 2001). Students who are born into the digital age are characterized by several prominent characteristics, including their rapid adaptation to new technologies, their interest in a wide variety of topics simultaneously, their quick access to information, their propensity to obtain information from digital sources, and their predisposition for engaging in social interactions within virtual environments (VanSlyke, 2003).

Aside from fulfilling all the criteria for being a digital native, some gifted digital native students display distinct high-level cognitive, affective, and psychomotor skills than their peers (Sheffield, 2007). Köroğlu (2015, p. 271) defines the gifted digital native with the following words: "among gifted children between the ages of 9 and 17, one who can communicate using the internet and mobile technologies, takes part in creating and sharing content, and views the virtual world as their main source of knowledge, entertainment, and social interaction". Gifted students have superior memory, imagination, creativity, and motivation; they can adapt their knowledge to changing circumstances, and prefer challenging assignments (Davis, Rimm & Siegle 2014). When it comes to the education of gifted students, who are often segregated from their regular classmates due to the peculiarities and needs they have, it is not suitable to adopt a single learning model. When proper learning opportunities are not provided, gifted students may experience issues such as boredom, lack of challenging situations, and loss of motivation to learn (Preckel, Götz & Frenzel, 2010; VanTassel-Baska & Brown, 2007).

Gifted students must be challenged daily based on their interests and skills. In order to be successful, these students need to be given enriched learning opportunities in school settings, where they may take risks, learn from their errors, and learn to deal with the circumstances when they fail to be successful (Rogers, 2007). Students' cognition and perception are significantly affected by the lack of enhanced learning opportunities (Kitsantas, Bland & Chirinos, 2017). In addition to providing differentiated instruction and independent activity possibilities in their areas of interest and skills, opportunities for them to interact with their gifted peers and learn from them should be facilitated (Coleman & Hughes, 2009). Educators use programming options such as acceleration and enrichment (depth and complexity) in a variety of different grouping arrangements (resource room, private classes, private schools, and cluster grouping) within the individualized learning options (independent study, original research, mentorship, online courses, and internships). As a result, they assist students in improving their performance in cognitive, psychosocial, and social-emotional domains, as well as in determining their career objectives and approaches to develop their skills (Susan, Dailey & Cotabish, 2022). At the same time, they provide a high degree of access to a variety of programming options, while also distinguishing the learning process by incorporating various existing technologies into these learning opportunities (Kaplan Sayı & Soysal, 2022; McKoy & Merry, 2023).

Technology, also referred to as the "great equalizer," is a suggested method for differentiating educational programs and teaching gifted students (Periathiruvadi & Rinn, 2012). The use of technology in the education of gifted students has three main functions:

enabling (performing the tasks), developing (improving the works), and transforming (doing things differently) (Chen, Ritzhaupt & Antonenko, 2013). Technology has the potential to improve the efficacy and quality of education for gifted students, and some scientists assert that certain technologies are especially beneficial for gifted students (Shavinina, 2009; Siegle, 2005). The uses of information and communication technologies (ICT) by gifted students can be categorized under the following headings: obtaining information and conducting research; communicating and interacting with others; removing barriers and deficits; engaging in remote teaching or e-mentoring; participating in collaborative projects; taking virtual field trips; creating and sharing multimedia; and providing instructional resources (Öngöz & Sözel, 2018). Gifted students are also aware of the significance of technology for their education (Mann, 1994), and they feel that they will be significantly more successful in the future if they improve their abilities in ICT (Kurnaz, Yurt & Çiftçi, 2014). It is important to make appropriate use of ICT skills in order to facilitate the development of ICT skills, as well as the ability of gifted students to benefit from ICT-supported education. At this point, the concept of digital literacy, which is described as the capability of using information and communications technology (ICT) efficiently to access information, analyze information, develop new information, and connect with others, gains significance. Plagiarism, cyberbullying, viewing inappropriate material, misuse, and addiction to technology are just some of the negative outcomes that may result from the use of ICT (Siegle, 2017). Cyberloafing, which refers to the undesirable, unanticipated, excessive, unregulated, or irregular use of ICT during class (Alyahya & Alqahtani, 2022), emerges as a crucial term in the context of gifted student education, and ICT technologies along with digital literacy.

Dijital Literacy

Technological and social developments, along with information and communication technologies, have become integral parts of life. Currently, information and communication technologies play a major role in several disciplines, including education, business, management, health care, and entertainment (Jimoyiannis & Gravani, 2011). As information and communication technology permeates almost every part of modern life, it has become essential for people to develop diverse literacy skills. One of these literacy concepts is digital literacy. Digital literacy includes the aspects of information literacy, computer literacy, media literacy, and ICT literacy (Lafçı Tor, Başaran, & Arık, 2022).

Digital literacy is the capacity to utilize information and communication technology successfully to locate digital resources and contents, analyze and synthesize, produce new data, establish new media expression channels, and interact with others (Martin, 2008). According to this definition, digital literacy comprises the capacity to locate, process, and use data. The most crucial aspect of digital literacy is understanding where to obtain data and how to use it in various scenarios. According to Bawden (2001), the following are the competencies that need to be gained to achieve digital literacy: 1) the capability of trying to extract reliable information from a variety of sources 2) engaging in critical thinking to arrive at choices that are correct and legitimate in relation to the information provided; and 3) engaging in reading and comprehension of materials that are not sequential and are dynamic. 4) increasing one's knowledge of the communication networks that have been established to assist people 5) having the ability to make use of the tools and filters that are required to deal with the incoming information; 6) having a sense of confidence concerning publishing, communication, and access.

According to Ng (2012), a digitally literate person develops or adapts to a developing or evolving technology. According to Ng (2012), digital literacy is a notion that encompasses three different dimensions; 1) the "technical" dimension, which refers to a person's proficiency in technical abilities. 2) the "cognitive" dimension, which relates to one's capacity to think critically and analyze information. and 3) the "socio-emotional" dimension, which includes information such as security and privacy and should be addressed while using information and communication technologies for the sake of learning and socializing. In addition, national and international policies now recognize digital literacy as one of the most essential skills to be obtained in the 21st century, making it one of the most crucial competencies for mastering (European Commission (EU), 2020; International Society for Technology in Education (ISTE), 2016; The Organization for Economic Co-operation and Development (OECD), 2021).

During the school year of 2020-2021, COVID-19 has resulted in extensive changes in how individuals work, as well as the locations and methods of education for students. Educators quickly have shifted from offering face-to-face classroom education to virtual online education. This shift has necessitated educators to use their present technological abilities creatively and learn new skills to teach using technology. During this process, it has become more important for educators to incorporate new technological tools (Del Siegle, 2023). During this process, it has become more important for educators to adopt new technological tools. In this process, solutions to address the academic and social-emotional needs of gifted students in virtual settings were sought (Wolfgang & Snyderman, 2022). Educators shared their experiences in the following areas: (a) gaining a better understanding of how to utilize remote teaching, (b) redesigning gifted education classes, and (c) employing a variety of strategies to offer students more options, differentiation, and self-paced learning. Students must have adequate digital literacy skills to benefit from differentiated and self-paced digital learning opportunities (Li & Yu, 2022) even though teachers must have sufficient digital literacy skills to offer these opportunities (Li & Yu, 2022). It is now problematic for students to spend time on various platforms in digital learning settings regardless of the course (Alyahya & Alqahtani, 2022).

Cyberloafing

One of the major tendencies in today's technology-rich settings is the purposeful and needless use of information and communication technologies during work hours. First time in the literature, the term cyberloafing has been defined as employees using internet access in the office during working hours voluntarily for personal reasons (Lim, 2002). The use of e-mail and internet infrastructure for non-business purposes (Blanchard & Henle, 2008), wasteful use of technology in the workplace that is counterproductive, avoiding work (Robinson & Bennet, 2008; Ugrin, Pearson & Odom, 2008), and the use of tech resources offered for work for personal purposes (Örücü & Yıldız, 2014) are all examples of what are referred to as cyberloafing. Most research on inappropriate and counterproductive uses of technology has been conducted in business settings (Andreassen, Torsheim & Pallesen, 2014; Sheikh, Atashgah & Adibzadegan, 2015; Vitak, Crouse & LaRose, 2011). Some researchers have stressed that cyberloafing behavior for entertainment and relaxation is enjoyable and soothing (Lim & Chen, 2009; Page, 2015), despite the fact that it undermines system performance in the workplace owing to financial loss and needless bandwidth use according to other researchers (Greengard, 2000; Sipior & Ward, 2002).

The extent of cyberloafing is growing as a result of the accessibility of online communication and the ongoing development of mobile technology, and it is recognized as a typical way to kill time in the office. While the use of modern technology in educational settings is rapidly increasing, researchers' focus has shifted to the issue of cyberloafing in education. Current technology and the internet play a significant role in all aspects of education and training, from the course process to school administration, student-teacher communication networks, and parent networks. In particular, it is known that a quarter of the students are constantly online (Lenhart, 2015). However, the undesired, unanticipated, excessive, unregulated, or irregular use of computer and internet technologies by students has a detrimental impact on the effectiveness of the teaching process and causes several issues (Awwad Ayesh & Awwad, 2013; Brubaker, 2006; Junco, 2012; Karaoğlan Yılmaz, Yılmaz, Öztürk, Sezer & Karademir, 2015; Ragan, Jennings, Massey & Doolittle, 2014). In this context, cyberloafing can be harmful in teaching environments in addition to workplace environments (Akbulut, Dönmez & Dursun, 2017; Baturay & Toker, 2015).

Cyberloafing is described in educational contexts as the inclination and/or behavior of students to use the Internet for non-course-related activities during class hours (Kalaycı, 2010). Facilitating each student's access to technological devices and the internet has increased the concern about cyberloafing in learning-teaching processes (Baturay & Toker, 2015). This concern is also backed by studies performed. According to a study conducted by Arabacı (2017), students engage in cyberloafing behavior even when they think it is unacceptable. Students typically engage in cyberloafing activities in educational settings, including sharing (text, photo, video content, making comments, messaging, tagging, etc.), shopping, updating status on social media, accessing content (listening to music and downloading, watching and downloading videos, downloading other applications), and gaming/betting (Akbulut, Dursun, Semester & Şahin, 2016). As students engage in cyberloafing behaviors throughout the teaching and learning process, which results in a decline in their attention and interest in the lesson, is a significant barrier to the effectiveness of this process (Şenel, Günaydın, Sarıtaş & Çiğdem, 2017).

Students are better able to engage in cognitive activities and actively learn with the assistance of technology such as computers and the internet, which, when utilized appropriately, are instruments that boost the interaction and learning motivation that occur during the learning process (Lauricella & Kay, 2010). Rather than limiting students' access to the internet and banning mobile devices and applications as a means of preventing cyberloafing, an effective solution can be found by examining the reasons why students engage in cyberloafing behaviors and uncovering the reasons why students engage in these behaviors (Şenel, Günaydın, Sarıtaş & Çiğdem, 2017). It should also be considered that the steps to be taken against cyberloafing will vary between the business and the education environments. Employers may block certain websites, warn employees about technology misuse via written notice, or impose various sanctions. In the classroom environment, it is almost impossible to prevent the use of mobile devices (Akbulut et al., 2017). In light of the fact that compulsory remote teaching will continue during the pandemic, mobile devices and internet technologies have become indispensable in remote teaching contexts. Given that the reactions of individuals to cyberloafing activities may vary based on individual differences, beliefs, and ethical orientations (Alder, Schminke, Noel, & Kuenzi, 2008), it is deemed necessary to investigate the cyberloafing behaviors of gifted students.

The Interplay of Digital Literacy and Cyberloafing

Digital literacy and cyberloafing represent two sides of the digital technology coin in the educational sector. While digital literacy equips students with the vital skills to navigate the digital world (Bawden, 2008), cyberloafing reflects the misuse of these skills during academic hours (Lim, 2002). On the flip side of digital literacy, the proliferation of digital technology has given rise to cyberloafing (Mihelič, Lim & Culiberg, 2023). Analyzing the interplay between these factors is critical for effective pedagogy in the digital age.

In theory, digital literacy and cyberloafing could be positively correlated. As Vitak, Crouse, and LaRose (2011) suggest, individuals with a high degree of digital literacy might be more capable of navigating to non-work-related websites and engaginge in personal interest activities, thereby engaging in higher levels of cyberloafing. On the other hand, individuals with high levels of digital literacy may be expected to avoid cyberloafing behaviors because they have more awareness about the ethical use of ICT. However, Arabacı (2017) observed that even students who believe that it is unacceptable to exhibit cyberloafing behaviors in the teaching process can exhibit cyberloafing tendencies. Arslantas, Yaylacı, and Özkaya (2023) found a negative relationship between digital literacy and cyberloafing. At the same time, the relationship between digital literacy and cyberloafing may be more complex. For example, an indirect effect from digital literacy to cyberloafing has emerged through internet addiction (Araslantas, Yaylacı & Özkaya, 2023). In their study, the researchers recommended improving students' digital literacy skills, as it shapes the foundations of cyberloafing behavior avoidance and internet addiction.

For gifted students, these phenomena as dijital literacy and cyberloafing present an unique paradox. Gifted students are generally characterized by exceptional intelligence, creativity, and problem-solving abilities (Davis, Rimm & Siegle 2014). With a more profound understanding and faster assimilation of new information, it is logical to assume that these students would exhibit a higher level of digital literacy. They are usually quick to understand complex digital systems, algorithms, and languages, and often show high enthusiasm for experimenting with new digital tools (Housand, Housand & Renzulli, 2021). The rise of e-learning platforms and digital resources offers an array of opportunities for these students to further extend their knowledge and satisfy their intellectual curiosity (Mckoy & Merry, 2023).

However, their adeptness in the digital realm also opens the gateway to cyberloafing – the act of using the internet and digital resources for non-productive or leisure activities during supposed lesson hours (Dereli & Şahin İzmirli, 2022). Gifted students, in their pursuit of intellectual stimulation, can easily find themselves lost in the vast and varied world of the internet. Boredom and lack of challenge in traditional classroom settings can lead gifted students to seek intellectual stimulation online (Siegle, 2023; Siegle & Hook, 2023). It can be argued that the same factors that excel gifted students in digital literacy contribute to higher instances of cyberloafing. The internet, a hub of diverse information and intriguing complexities, provides a stimulating platform that often attracts gifted students (Phelps, 2022; Siegle, 2005). They might spend excessive time exploring interesting but irrelevant topics, engaging in online gaming, or connecting with online communities (Siegle, 2017; Wolfgang & Snyderman, 2022; Yildiz Durak, Demirhan & Citil, 2022). These activities, while providing intellectual stimulation, often detract them from their academic or classroom tasks.

Understanding the relationship between digital literacy and cyberloafing can help educators strike a balance, encouraging gifted students to utilize their digital skills for productive purposes, while minimizing the risk of excessive cyberloafing. The insights gained

from studying the relationship between digital literacy and cyberloafing among gifted students can also inform educational practices for gifted students. In the context of technology's growing integration into classrooms, including remote teaching, understanding the impact of digital literacy on cyberloafing is essential for educators. By recognizing this relationship, educators can develop effective instructional strategies, implement suitable digital tools and platforms, and offer targeted support to foster responsible and purposeful technology use among gifted students. This understanding becomes particularly relevant in the era of compulsory remote teaching, where digital literacy skills play a vital role in ensuring productive engagement and minimizing distractions.

Purpose of the Research

Cyberloafing behaviors in educational settings were studied in the samples of faculty members (Zoghbi-Manrique-de-Lara, 2012), primary school teachers (McBride, Milligan & Nichols, 2013), administrators and teachers from different branches (Akbulut et al., 2016; Katıer, 2019); university students (Akbulut et al., 2016; Çok, 2018; Dursun, Dönmez & Akbulut, 2018; Ergün & Altun, 2012; Şenel, Günaydın, Sarıtaş & Çiğdem, 2017; Taneja, Fiore & Fischer, 2015), graduate students (Bağrıacık Yılmaz, 2017), high school students (Akbulut et al., 2016; Baturay & Toker, 2015; Gezgin, Kamalı Arslantaş & Şumuer, 2018) and secondary school students (Polat, 2018, Tarıdi & Karaca, 2018). No studies have been conducted on gifted students or on cyberloafing. This study aimed to evaluate the relationship between gifted students' digital literacy and cyberloafing levels and their digital literacy and cyberloafing. For this aim, the following questions were explored:

(1) What is the level of digital literacy and the level of cyberloafing among gifted students?

(2) Is there a relationship between the level of digital literacy and the level of cyberloafing of gifted students?

Method

Research Design

The study was developed as a correlation analysis to assess the relationships between the dependent and independent variables (Karasar, 2016). It was attempted to examine the direction and extent of the correlations between gifted students' digital literacy and cyberloafing mean scores.

Participants (Study Group)

The research sample consists of 179 gifted students enrolled in the academic year 2020-2021 at Two Science and Art Centers (SACs) located in two populated cities of the Mediterranean and Marmara regions in Turkey. The participants are 5th, 6th, 7th, and 8th-grade students studying in the Individual Talent Recognition Program (ITR) and Special Talent Development Program (STD). Typical case sampling, one of the purposive sampling methods, was applied to determine the study group. Purposeful sampling methods allow an in-depth analysis of situations believed to be rich in information (Büyüköztürk et al., 2014). When using typical case sampling, information is acquired through a typical case, in other words, determining a mean value, which is a typical sample among numerous scenarios in the population (Yıldırım & Şimşek, 2013). This study was carried out with students from two

science and art centers that are typical representatives of the 355 Science and Art Centers (SACs) across Turkey's 81 cities. The gender distribution of the group of participants is shown in Table 1.

Tablo1. Distribution of participants by gender

Gender	f	%
Female	85	47.5
Male	94	52.5
Total	179	100.0

When Table 1 is examined, it is seen that 85 of the participants are female students (47.5%) and 94 are male students (52.5%). The distribution of the study group by their grades is given in Table 2.

Table 2. Distribution of participants by grade

Class Grade	f	%
5th Grade	96	53.6
6th Grade	34	19.0
7th Grade	19	10.6
8th Grade	30	16.8
Total	179	100.0

In Table 2, the majority of the participants consist of 5th-grade students. Among participants; 96 students (53.6%) are studying in the 5th grade. Of others; 34 (19%) of the participants are 6th-grade students, 19 are 7th-grade students (10.6%) and 30 are 8th-grade students (16.8%). Table 3 displays the distribution of students in the study group based on various factors that may influence the research variables besides gender and grade level.

Table 3. The features of students compromising the study group

Feature	Study Group	
School Type	f	%
Public School	104	58.1
Private School	75	41.9
Diagnosed Area		
General Mental Ability	150	83.8
Painting	2	1.1
Music	17	9.5
More than one	10	7.9
Internet Usage Time		
Less than an hour	42	23.5
1-2 hours	58	32.4
2-3 hours	38	21.2
3-4 h	17	9.5
4-5 hours	8	4.5
More than 5 hours	16	8.9
Number of Actively Used Mobile Applications		
0	2	1.1
3-5	116	64.8
6-10	40	22.3
11-15	13	7.3
16-20	5	2.8
Consistently Played Online-Mobile Games or Console Games		
Yes	91	50.8
No	88	49.2
Social Media Usage Status		
Using	172	96.1
Not using.	7	3.9
Types of Electronic Devices Used	Computer (f=144, 80.4%), Smartphone (f=109, 60.8%), Tablet Computer (f=103, 57.5%), Smart Watch (f=44, 24.5%)	
Types of Electronic Devices Used in the Online Course	Computer (f=135, 75.4%), Smartphone (f=57, 31.8%), Tablet Computer (f=43, 24.02%).	

Examining Table 3 reveals that 104 of the students attend public school (58.1%) and 7 attend private school (41.9%). And 150 (83.8%) of the students were diagnosed in the general mental ability field. The research group also included students who were diagnosed with painting (2%), music (17%), and multiple fields (7.9%). Some students use the internet for one to two hours (32.4%). There are also students with over five hours (8.9%) of internet usage time. The number of mobile applications actively used by students on their mobile devices is mostly between three and five (64.8%). Of the students; 91 students (50.8%) play digital

games, whereas 88 students (49.2%) do not. And 172 (96.1%) of the students use social networks, 7 (3.9%) do not use them. In terms of devices owned; 144 (80.4%) of the students had a computer, 109 (60.8%) had a smartphone, 103 (57.5%) had a tablet computer and 44 (24.5%) had a smartwatch. Among the students participating in online courses, 135 (75.4%) stated that they used computers, 57 (31.8%) used smartphones and 43 (24.02%) used tablets.

Data Collection Tools

The data of the study were obtained from the personal information form, cyberloafing activities scale, and digital literacy scale.

Personal Information Form

In this form created by the researchers, in addition to demographic data including gender, current grade, age, and the school type they attend (state-private), questions were designed to retrieve information about how much time they spend each day online, what electronic devices they own, what online games they play consistently, whether they are receiving digital literacy education (taking an IT course or not), and what condition(s) they have been diagnosed with (general ability, art, and music).

Digital Literacy Scale

The scale which was developed by Ng (2012) was adapted to Turkish by Hamutoğlu, Canan Güngören, Kaya Uyanık, and Gür Erdoğan (2016). The original scale consists of 4-factor dimensions which include attitude, technical, cognitive, and social dimensions. These factors are named attitude, technical, cognitive, and social. The scale consists of 17 items. On a 5-point Likert scale, responses ranged from Strongly Agree (5) to Strongly Disagree (1). The sub-dimensions and their internal consistency coefficients of the scale were determined as follows: For the attitude sub-dimension, it was determined as .88, for the Technical sub-dimension, it was .89, for the Cognitive sub-dimension, it was .70 and lastly, for the Social sub-dimension, it was .72. The reliability score calculated for the entire scale was .93. The reliability coefficient for the current study was .93. The overall digital literacy scores were also calculated for this study.

Smartphone Cyberloafing in Classes Scale

The scale which was developed by Blau, Yang, and Ward-Cook (2006) was adapted to Turkish by Polat (2018). The scale consists of 16 items and three sub-factors: browsing-related, non-work e-mailing, and interactive cyberloafing. On this 6-point Likert-type scale, responses rated from Never (1) to Always (6). The sub-dimensions of the scale and their internal consistency coefficients are as follows: the coefficient was .85 for the browsing-related sub-dimension, it was .80 for the interactive cyberloafing sub-dimension, and .75 for the non-work e-mailing cyberloafing sub-dimension. The reliability coefficient calculated for the entire scale was .75. The reliability coefficient of the scale for the current study was .893. And overall cyberloafing scores were calculated for this study.

Data Collection and Analysis

In the current study, data were collected during the compulsory remote teaching period. During this period, gifted students took both the courses at SACs and the courses at their regular schools online. SACs in Türkiye are educational centers established by the Ministry of National Education to meet the educational needs of gifted students. SACs are for students at primary, secondary, and high school levels. Gifted students continue their formal education

and attend classes at SACs outside of formal education hours on weekdays or on weekends. All lessons in the compulsory remote teaching process were carried out online at SACs. Students attended the classes at SACs and their schools online from their own homes. This process coincided with the period when students were completely at home due to the Covid-19 pandemic and hybrid and face-to-face education did not take place.

The lessons held in SACs were generally carried out with video conferencing tools such as Microsoft Teams, Zoom, Google Meets. All of these lessons were conducted synchronously. In the compulsory remote teaching process, the lessons in SACs were planned according to the curriculum of the students' formal education. For this reason, gifted students were able to take the lessons in the compulsory remote teaching process usually in the afternoon or evening hours. In the compulsory remote teaching process, the synchronous lessons in SACs were conducted by teachers working in those SACs.

Gifted students continued their education online at home in regular schools. The online and synchronous lessons at the schools where the students received formal education were planned by the school administrations and the students participated in these courses through Education Information Network (EBA). The live lesson feature on EBA uses the Zoom platform as an infrastructure.

Data collection tools and personal information form were converted into a digital data collection tool via Google Forms. The digital form was applied to the students during the fully synchronous online lessons in SACs. The link to the digital form was sent to the students using the chat feature on the Zoom platform and the students were asked to fill out the digital form. Prior to the data collection process, students and their families were informed about the process and once again, their voluntary participation in the study was confirmed. At the beginning of the data collection process, the students were reminded to think about the fully synchronous online lessons they attended during the compulsory remote teaching process both in SACs and in their formal education institutions and to answer the questions about cyberloafing behaviours in this context.

Online data-gathering tools were applied to 179 gifted students attending classes at SAC throughout the academic year of 2020-2021. The data obtained in the study were analyzed using SPSS 22 software. First, the mean, standard deviation, mode, median, skewness, and kurtosis values were calculated and the distribution of the data was examined while analyzing the study data. The kurtosis and skewness coefficients of the scores obtained from the digital literacy scale and the smartphone cyberloafing scale in classes were found to range between -1.5 and +1.5. Considering the fact that skewness and kurtosis values are within the limits of -1.5 and +1.5, it is an indicator of normality (Garson, 2012; George & Mallery, 2010; Tabachnick & Fidell, 2001). After examining the distribution, it was decided to apply parametric tests. Pearson's correlation coefficient was used to examine the association between gifted students' digital literacy and cyberloafing levels. When examining the correlations between variables, the correlation coefficient® is determined in accordance with the following statement; "the values between .30 and .00 is a low correlation, the values between .70 and .30 refer to moderate correlation while the values between 1.00.and .70 are deemed as high correlation" (Büyüköztürk, 2014, p.32).

Research Ethical Permissions

In this study, all rules stated to be followed within the scope of the "Higher Education Institutions Scientific Research and Publication Ethics Directive" were followed. None of the

actions stated under the title “Actions Against Scientific Research and Publication Ethics”, which is the second part of the directive, were taken.

- Ethical review board name: Istanbul University Cerrahpaşa
- Ethical Review Board Date of ethics review decision: 04.10.2021
- Ethics assessment document issue number: E-74555795-050.01.04-201399

Findings

In order to seek an answer for the first sub-problem of the research, which is "What is the level of digital literacy and the level of cyberloafing among gifted students?", findings regarding the mean score and standard deviation values calculated are presented in Table 4.

Table 4. Descriptive statistics regarding the level of digital literacy and the level of cyberloafing among gifted students

Variable	N	Minimum	Maximum	$\bar{X}$	sd
Digital Literacy	179	17.00	85.00	63.70	12.55
Cyberloafing	179	16.00	53.00	21.37	7.24

Examining Table 4 reveals that the digital literacy scores of gifted students range from 17 to 85, with a mean score of 63.70. Cyberloafing scores range from 16 to 53 with a mean score of 21.37. Based on these results, it can be said that gifted students had high levels of digital literacy and low levels of cyberloafing.

The results of the Pearson Correlation Analysis performed for the analysis of the second research question (is there a relationship between the level of digital literacy and the level of cyberloafing of gifted students?) are presented in Table 5.

Table 5. The results of a Pearson Correlation Analysis to determine the relationship between gifted students’ level of digital literacy and the level of cyberloafing

		Cyberloafing
Digital Literacy-	r	.084
	p	.265
	N	179

When the correlation between the gifted students’ level of digital literacy and the level of cyberloafing has given in Table 5 was analyzed, it was shown that there was no significant relationship between the two variables (p>.05, r=-.084). According to this finding, there was no relationship between digital literacy and cyberloafing levels of gifted students.

Discussion and Conclusion

Numerous studies have shown that students often do not utilize ICT for educational purposes and instead waste their time while in class (Akgün, 2020; Bağrıaçık Yılmaz, 2017; Baturay & Toker, 2015). Understanding the factors that might affect cyberloafing and its causes would aid educators greatly in preventing cyberloafing behaviors, which are becoming more and more prevalent (Bağrıaçık Yılmaz, 2017). For this purpose, recently, there have been several studies in the field of education investigating cyberloafing that is caused by the use of

digital tools. In the current study, the relationship between digital literacy and cyberloafing levels of gifted students and their digital literacy and cyberloafing was examined.

Students use numerous technological devices, such as smartphones, tablets, and laptops, to study in the classroom or online settings. Remote teaching has been used across all subject areas of education, particularly during the global pandemic. Institutions have created infrastructures for online education, and several educational institutions have completed entire academic calendars using remote teaching (Özdemir, Yıldız & Şahan, 2021). Internet technologies may have a positive impact on students by providing them with timely access to information and updated resources in their areas. However, they can also be used for non-academic purposes. This condition may make it difficult to effectively incorporate the internet and ICT into the learning environment (Seçkin & Kerse, 2017). It is emphasized that increasing access to ICT tools can also increase students' cyberloafing behaviors (Akbulut et al., 2017). When students use such technology in the classroom, their attention may be distracted, leading to unfavorable outcomes, such as diminished interest in the course and poorer performance (Ergün & Altun, 2012; Karaoğlan et al., 2015; Yaşar & Yurdugül, 2013). Looking at the results of the current study, while the digital literacy level of gifted secondary school students was found to be high, the cyberloafing level in the compulsory remote teaching process was found to be low. In earlier research performed in SACs, it was discovered that gifted students had high levels of educational technology self-efficacy as well as information and technology literacy skills (Bayra, 2020; Nacaroğlu, 2020). Several educational process experiences that allow gifted students to adapt to new technologies, support their higher-order thinking, and empower them to use and generate with technology may have contributed to their digital literacy abilities (Avcu & Er, 2020a, 2020b; Avcu, Ayverdi, Ülker & Karakış, 2020; Ayverdi & Öz; 2021; Avcu & Ayverdi, 2022; Avcu & Yaman, 2022; Bozok, Geniş & Avcu, 2020; Çevik, 2021; Del Siegle, 2023; Önal & Önal, 2021). Following the findings of recent research, it can be concluded that gifted students acquired digital literacy, which is a 21st-century skills, through the education they received in SACs (Nacaroğlu, 2020).

Previous research has identified several characteristics that influence students' cyberloafing behavior. The first of these is the boredom they experience during class hours (Varol & Yıldırım, 2018). Students who are bored in class may engage in cyberloafing to alleviate their boredom (Fu et al., 2021; Pielot, Dingler, Pedro & Oliver, 2015). The second factor is that the student does not like or has a problem with the teacher. When students do not like a teacher, they prefer to participate in activities such as cyberloafing rather than paying attention in class. Another factor is that the content of the course is unappealing to the student. In this instance, students are more engaged with an activity that piques their interest (Dmour, 2021). In addition, students may be more engaged in their smartphones during class if they use them to get quick answers to questions they do not understand and that are directed by the teacher or if they do not have learning objectives (Alanoğlu & Karabatak, 2021).

The specific teaching strategies used by the teacher appear to be a significant factor in the cyberloafing behaviors of students (Yılmaz & Yurdugül, 2018). In addition, excessive internet usage can become a serious problem for children who lack self-control over time. In line with the results of a study, there is a negative correlation between the level of cyberloafing at work and self-control (Mercado, Giordano & Dilchert, 2017). If education suddenly switched to virtual learning environments, students with low self-control might confront the risks of not being able to handle their learning, falling behind, and dropping out

of school (Poon, Lee & Ong, 2012). Students who have an efficient learning management system will be able to continue their studies without being distracted by activities such as cyberloafing (Koay & Poon, 2022). Finally, Gerow, Galluch and Thatchar (2010) concluded that cyberloafing behavior is mostly driven by the individual, but can also be influenced by the environment. These factors may be associated with the low cyberloafing level of gifted students in the current study. Further research is required to determine the underlying causes of this finding.

Besides, the analyses revealed no significant correlation between gifted students' digital literacy level and cyberloafing level. There may be a correlation between gifted students' decreasing cyberloafing behaviors and their rising digital literacy skills. No other study evaluating the association between these two variables in a gifted student sample has been found in the literature. Although there was no significant correlation between these two variables, further research on the same topic with gifted students is necessary to generalize the results and make a more concise conclusion.

As a result of the research, it was determined that the level of digital literacy among gifted students were high, while the level of cyberloafing were low, and there was no significant relationship between these two variables. It is believed that cyberloafing among gifted students may be associated with other variables. Looking at the current research, it was understood that gifted students had high digital literacy and low cyberloafing levels. This study has been pioneering in terms of examining the cyberloafing behaviors of gifted students. More studies should be performed on this topic.

Limitations and Recomondations

Yet, this study has several limitations that may have an impact on its results. First, this study was conducted with 179 gifted students attending two Science and Art Centers (SACs) in the Mediterranean and Marmara regions of Turkey during the 2020-2021 academic year. Therefore, there are limitations to making generalizations regarding gifted students.

The current study attempts to gain a deeper understanding of cyberloafing among gifted secondary school students. It does not provide information on how cyberloafing changes in gifted students studying at different grades. Jin et al. (2020) reported that as students' grade levels increased, their digital literacy skills also increased. Additional studies may be conducted to examine the possible correlation that exists between rising levels of digital literacy and the cyberloafing behaviors of students in various age groups. More in-depth information on behaviors associated with cyberloafing may be obtained by carrying out subsequent research with gifted students from a variety of age groups and socio-cultural backgrounds. Studying the cyberloafing behavior of gifted students in different age groups might offer students the opportunity to take early preventive measures.

Cyberloafing habits may be influenced by variables such as students' interest in the course, their appreciation for the teacher, and the teaching methods employed by the teacher, which cannot be controlled. This situation may have affected students' responses. Finally, self-report scales were used to collect data. Students self-reported their cyberloafing habits by completing the scales online. Different forms of cyberloafing behavior might be perceived as socially unacceptable. Students may respond biased way due to social desirability. To address the limitations of the data collected through self-report scales, future research should focus on ascertaining the actual cyberloafing behaviors of students by actively

monitoring the duration and frequency of Internet usage unrelated to the course's scope during class hours. Moreover, causal inferences cannot be formed due to the data collection method of the current study. For the purpose of attaining a holistic understanding of the phenomenon of cyberloafing, researchers may utilize longitudinal data collection or a variety of other research methodologies, includng focus group interviews and semi-structured interviews.

Research on digital literacy and cyberloafing may be carried out in future studies using a variety of study groups and scales. To explore the digital literacy skills and cyberloafing practices of gifted students in-depth, qualitative research might be performed. With the pandemic, there has been a significant increase in the courses given on remote teaching platforms. Even though the impact of pandemic circumstances has diminished, certain departments, institutions, and organizations continue to offer remote teaching via digital platforms. In the education given on digital platforms, qualitative research may be conducted to evaluate the digital literacy practices of the students in-depth and whether or not they engage in cyberloafing throughout the course.

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