

## The Books or the Computers: An Attitude Comparison Study from Rural Areas

### Kitaplar veya Bilgisayarlar: Kırsal Bölgelerden Bir Tutum Karşılaştırma Çalışması

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**Öz:** Bilgi ve İletişim Teknolojileri, insan yaşamını derinden değiştirmiştir. Öte yandan, herkesin gelişen bu teknolojilere erişmek ve kullanmak adına yeterince şanslı olmadığı da görülmektedir. Bu anlamda insanlık sadece teknolojik gelişmelere değil, aynı zamanda dijital bölünmelere de tanık olmaktadır. Literatür, dijital uçurumun (ya da bölünmenin), cinsiyet, yaşanılan yer, sosyo-ekonomik durum veya eğitim geçmişi gibi faktörlere bağlı olarak çeşitlendiğini göstermektedir. Bu çalışma, lise öğrencilerinin (n = 412) kitap ve bilgisayarlara karşı tutumlarını karşılaştırarak kırsal alan bağlamında dijital bölünme konusuna odaklanmaktadır. Teknolojiler ışığında, kırsal alanlardaki dijital bölünmeyle halihazırda dezavantajlı duruma gelen öğrencilerin bilgisayarlarla daha iyi öğrenenler olup olmayacağı konusunda önemli tartışmalar sürmektedir. Çalışmanın veri kaynağı olan ölçek; (i) demografik bilgiler, (ii) bilgisayarlara (21 madde) ve kitaplara (21 madde), karşı ayrı ayrı tutum soruları (42 madde), ve (iii) kitaplara göre bilgisayarlardaki tercihler (17 madde) olmak üzere üç bölümden oluşmaktadır. Kolay erişilebilir örnekleme yöntemiyle toplanan veriler analiz edilmiş ve öğrenme etkinlikleri için kitaplara, eğlence amaçlı etkinlikler için ise bilgisayarlara yönelme olduğu tespit edilmiştir. Cinsiyet (erkek - kadın), kayıtlı okul türü (genel veya meslek), evde kütüphane veya kişisel bilgisayar sahibi olma ve yaşadığı yer (köylere karşı ilçe merkezi) kırsal alandaki tutumlara yönelik diğer değişkenler olarak çalışmada incelenmiştir.

**Anahtar sözcükler:** Sayısal uçurum, kırsal bölge, tutum, bilgisayar, kitap

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## UZUN ÖZ

### Giriş

Bilgi ve İletişim Teknolojilerinin (BİT) insan yaşamını derinden etkileyip değiştirdiği bu yüzyıl içerisinde yine de herkesin bu teknolojilere erişim ve kullanım şansına sahip olmadığını görmekteyiz. Bu anlamda insanlık sadece teknolojik gelişmelere değil, aynı zamanda dijital bölünmelere de (digital divide) tanıklık etmektedir. Literatür çalışmalarına bakıldığında, dijital uçurumun (ya da bölünmelerin), kişinin yaşadığı yere, cinsiyetine, sosyo-ekonomik veya eğitim geçmişine bağlı olarak değiştiği ortaya çıkmaktadır. Böylesi bir durumda, Türkiye genel profiline bakıldığında dijital bölünmenin sadece Doğu Batı ekseninde gerçekleştiği düşünülmektedir. Bu çalışma içerisinde bunun aksine sayısal uçurumun ülke genelinde her yerde oluştuğunu ve kişiler üzerindeki etkisini göstermek amacıyla ülkenin batısında yer alan bir ilinden seçilmiş bir ilçesine odaklanılmaktadır. Odak kitle olarak ise değişimin en çok etkilediği bugünün gençleri, özellikle de orta öğrenim (lise) öğrencileri seçilmiştir.

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Seçilen kırsal alan orta öğrenim öğrencilerine son on yılın en büyük tartışmalarından birisi olan kitaplara karşı bilgisayarlar konusunda sorular yöneltilmiştir. Zira günümüzde insanların artık kitaplar yerine bilgisayarlardan öğrenmesinin daha iyi olacağına dair bir söylem gittikçe yoğunluk kazanmaktadır. Dijital bölünmenin sonucu olarak kırsal alanlardaki teknoloji erişim ve kullanım sorunları bağlamında bu söylemin dezavantajlı bir gençlik grubu ortaya çıkarabileceği de düşünülmektedir. Bu konuda son sözün aslında öğrenme sürecinin en değerli parçası olan öğrencilerde olduğunu varsayarak onların tutumlarının ölçülmesinin önemli olduğu üzerinde durulmaktadır. Bu nedenle, bu çalışma, orta öğrenim öğrencilerinin (n = 412) kitap ve bilgisayarlara karşı tutumlarını karşılaştırarak kırsal alan bağlamında sayısal uçurum konusuna odaklanmaktadır.

## **Yöntem**

Bu çalışma deneysel olmayan nicel yöntem üzerinden ölçek ile veri toplanması üzerine inşa edilmiştir. Araştırmacılar daha önceki çalışmalar hakkında derin bir literatür taraması yaptıktan sonra Noyes ve Garland (2006) tarafından tasarlanan ölçeği uygulamaya karar vermişlerdir. Anketin ilk bölümü olan temel demografikler, okullaşma ve öğrencilerin yaşadığı yer gibi araştırma içeriğinin gerçeklerine uyarlanmıştır. Anketin ikinci bölümünde toplamda 42 madde, bilgisayarlara (21 maddeye) ve kitaplara (21 maddeden) karşı tutumu ölçen aynı cümleler ayrı ayrı verilmiştir. Bir diğer deyişle aynı cümle iki farklı özne alarak (kitap ya da bilgisayar) sorulmaktadır. Üçüncü bölüm, öğrencilerin kişisel olarak tercihlerini bilgisayarlardan mı yoksa kitaplardan mı yapacağına yönelik 17 maddeden oluşmaktadır. İkinci ve üçüncü bölümler, kesinlikle katılma ve kesinlikle katılmama üzerine 5'li Likert ölçeğine dayanmaktadır. Bir Türk dili uzmanı tarafından tasarlanan ölçek kontrol edilmiş ve hatalardan arındırılmıştır. Sonrasında araştırmacılar veri toplama izni için başvuru yaparak gerekli düzenlemeler içerisinde veriyi toplamışlardır.

Veri toplandıktan sonra güvenilirlik analizleri yapılmıştır. İkinci kısım için Cronbach Alfa değeri 0,75 (42 maddeli n = 390); kitaplar üzerine maddeler 0,73 (21 maddeli n = 397) ve bilgisayarlar üzerine maddeler 0,71'dir (21 maddeyle n = 402). Bu sayılar iç tutarlılık güvenilirliğinin iyi bir düzeyde olduğunu gösterdi. Üçüncü bölüm için Cronbach's Alpha değeri, iyi bir iç tutarlılık güvenilirliği düzeyi de göstererek 0,79 (n = 405 ile 17 madde) olarak hesaplanmıştır.

Uygun örnekleme ile toplanan veriler analiz edilmiş ve öğrenme etkinlikleri için kitaplara yönelme, eğlence amaçlı etkinlikler içinse bilgisayarlara yönelme gibi bir eğilimi tespit etmiştir. Cinsiyet (erkek - kadın), kayıtlı okul türü (genel ya da meslek lisesi), evde kütüphane veya kişisel bilgisayar sahibi olma ve yaşadığı yer (köylere karşı ilçe merkezi) kırsal alandaki tutumlara yönelik diğer değişkenler olarak dikkate alınarak ileri analizler yapılmıştır.

## **Bulgular ve Tartışma/Sonuç**

Çalışmanın genel sonuçları, çalışma katılımcılarının, bilgisayarların kitaplara kıyasla avantajlarını ve dezavantajlarını tanıdığını göstermiştir. Ayrıca, bilgisayar ve kitaplarda aynı maddeler için ortalama puanlar kontrol edildiğinde, kırsal alan öğrencilerinin bir öğrenme aracı olmaları ve kolay erişilebilir özellikleri ile ilgili kitapları vurguladıkları gözlenmiştir.

Çalışma daha önceki literatür sonuçlarına paralel bir şekilde kırsal alanlarda kadın-erkek arasında teknolojiye erişim bazında yoğun bir farkın olduğunu tespit etmiştir. Erişememe sorunu kullanım sorununu da doğurarak diğer farklı psikolojik etkenleri de tetiklemektedir. Örneğin, kırsal alanda yaşayan bir kız öğrencinin bilgisayara erişmemesi onun bilgisayarı kullanırken daha fazla heyecanlı ve gergin olmasına sebep olacak ve bu durum öğrenmede sorun yaşamasına da yol açacaktır.

Cinsiyet değişkeni gibi, meslek veya genel liseye devam ediyor olmak da tutum ve duygular üzerinde önemli bir fark yaratmıştır. Kitaplarla ilgili tutum öğeleri bilgisayar öğelerinden çok daha yüksek olsa da, farklılık gösteren her şey sadece kitaplarla ilgilidir. Nitekim, bulgular düz liseye devam eden öğrencilerin bu maddelerin ortalama puanlarının meslek lisesi öğrencilerinden daha yüksek olduğunu göstermiştir. Literatürde, kitapların bazı durumlarda bilgisayarların bireyler tarafından hala tercih edildiğini vurgulayan araştırmalar bildirilmiştir.

Köyde ya da ilçe merkezinde yaşamının bilgisayara veya kitaplara karşı herhangi bir tutum değişikliği göstermediği tespit edilmiştir. Cruz-Jesus, Vicente, Bacao ve Oliveira (2016), gelir, yaş, eğitim ve diğerleri gibi sosyo-ekonomik unsurların BİT benimsemesinde ve kullanılmasında bir asimetrinin oluşmasında hayati bir rol oynadığını belirtmiştir. Benzer şekilde, bireylerin sosyal ve iletişim işlevselliği, alışkanlık, gelir, cinsiyet ve yaş gibi özellikleri BİT'in kabul görmesinin ana

etkenleri olabilir (Chipeva ve diğeri, 2018). Bu nedenle, değişkenleri ortaya çıkarmak için diğeri değişkenlerle olan etkileşimi de araştırılmalıdır.

Ayrıca, öğrencilerin evinde bir kütüphane veya kişisel bir bilgisayara sahip olmak, bilgisayar ve kitaplara yönelik tutumlar açısından bir fark yaratmaktadır. Genelde bilgisayar tutumları ile bilgisayar deneyimi arasındaki pozitif ilişki literatürde vurgulanmıştır (Garland ve Noyes, 2004; 2008).

Son olarak, öğrencilerin büyük çoğunluğu, hem kitapların hem de bilgisayarların bir öğrenim ortamı olarak düşünülebileceğini belirtmiştir. Ayrıca, bilgisayarları bir öğrenme aracı olarak tercih eden öğrenci sayısı, tercihleri kitaplara olan karşıtlarından çok daha yüksektir. Bu sonuçlar, literatürde öne sürülen, potansiyel bir fayda olarak bilgisayar platformlarının, motivasyon sağlayan yenilikçi etkileşimden faydalanma ve öğrenme materyallerine ulaşma esnekliği ve gelişmiş etkileşime sahip olma avantajına sahip olduğunu desteklemektedir (Valentine ve ark., 2017).

Nicel analizlerin ötesinde, altta yatan nedenleri ortaya çıkarmak için derinlemesine nitel çalışmalar yapılmalıdır. Seçilecek olan farklı yerleşim yerleri ve demografikler üzerinden çalışmanın sahası genişletilmelidir.

## 1. INTRODUCTION

With the advancement of innovative computer technologies, it is possible to assert that we live in a world of everlasting changes. Although the Internet and broadband penetration have expanded and information and communication technology (ICT) have become more widespread through the world, it would be claimed that limited use and access to these technologies have been still prevailed (Cruz-Jesus, Vicente, Bacao, & Oliveira, 2016). Although general statistics from many countries demonstrate an escalation about ICT possession and utilization, equal access related differences still stay the same in many countries all around the world. These differences in “access information, the Internet, and other digital technologies, in skills, knowledge and ability to use information and other technologies based on race, gender, geography, economic status and physical ability” (Rao, 2005, p.3) should be the derived components for the clarification of the digital equity.

In addition to these factors, geographic location (rural versus urban) and personal attributes (age, gender, educational status, and individual qualities) are important factors to be investigated for depicting digital divide. (Hohlfeld, Ritzhaupt, Dawson, & Wilson, 2017). As Park (2017) stated people living in rural areas have been at a persistent digital disadvantage compared to urban counterparts.

Although the use of computers and related technologies have increased tremendously, the literature reports that the preference of computers over books has been considered as a controversial topic (Sharifirad & Sharifirad, 2011). Advances in ICT have extraordinarily altered the way people interact with technological devices and the way that people shape their attitudes. Increasing dependence on the Internet and computer technologies in all elements of life, most particularly in education, business and recreational areas (Garland & Noyes, 2004), the need to explore people’s attitudes affecting subsequent behaviors regarding computers and books have been becoming more vital (Sharifirad & Sharifirad, 2011). When addressing the inequalities with regard to ICT access, this need becomes remarkable among economically and sociologically disadvantaged individuals and areas.

Digital divide studies are not only important for underdeveloped or developing, but also for (highly) developed countries. By realizing this fact, the examination of rural-urban digital divide takes an important position in the current European Union studies (Szeles, 2018). In the literature, there has been an increasing interest towards the possible impact of digital connectivity on attributes of life in rural locations (Erdiaw-Kwasie & Alam, 2016). In that sense, comparison studies on the preference of computers over books and attitudes towards both media in these groups and with the main factors might come into prominence in the literature.

Therefore, this study focuses on the dilemma of books versus computers in a rural area context. The location of the study is restricted with the west of Turkey where people believe that digitalization has been fulfilled. In that sense, this study will serve two purposes: (i) to examine whether the attitude differences toward books and computers work in the favor of computers in so-called ICT dominant decade, and (ii) to unfold the myth that digital divide in the western part of Turkey is less than the eastern part.

### **1.1. Digital Divide**

In the 21<sup>st</sup> century, the growth and development for countries and societies are strongly associated with their pervasive adoption and utilization of ICT (Cruz-Jesus et al., 2016). Especially, the gap between developing and developed countries regarding the level of technological advances reflects on many socioeconomic factors such as income and educational attainment (Nishijima, Ivanauskas, & Sarti, 2017). Therefore, a resolution on bridging the digital divide will help for economic growth recovery, sustainable development, poverty and inequality reduction (Szeles, 2018).

While traditional definition of the digital divide involves primarily the question of access (Hohlfeld et al., 2017), the term has been defined as “the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access ICT and to their use of the Internet for a wide variety of activities” (OECD, 2001, p. 5). The description of the digital divide at first stressed only PC ownership and the Internet access, then the accessibility of the Internet connections and the types of online usages have been attached to the term (Cruz-Jesus et al., 2016). Digital disparities like social inequality point out the differences in technology access, skills and use (Goncalves, Oliveira, & Cruz – Jesus, 2018; Hohlfeld et al., 2017). Nowadays, the indicators have been extended to cover new technologies, software and applications (Chipeva, Cruz-Jesus, Oliveira, & Irani, 2018), and the content (Erdiaw-Kwasie & Alam, 2016).

In rural regions, many problems have been encountered with the development initiatives (Erdiaw-Kwasie & Alam, 2016). To illustrate, area of residence as one of the main components of digital divide has been discussed in the literature (Park, 2017; Szeles, 2018). More specifically, Cruz-Jesus et al. (2016) point out that economically and sociologically disadvantaged people experience a lot of difficulty in access and use of ICT. By their remoteness and other social exclusion parameters such as ages, incomes, educational levels (Park, 2017), area of residence, and occupation (Goncalves et al., 2018; Nishijima et al., 2017) have been listed as other factors leading to digital divide.

### **1.2. Attitudes toward Books and Computers**

The analyses conducted to find out attitudes toward books and computers have based on many different approaches from diverse fields. For example; in order to discover different attitudes, researchers have been carrying out comparison based studies on books and papers that focus on the consequences of preferences for reading from computer screen. Although there is no agreement for the definition of computer attitude in the literature (Noyes & Garland, 2005), attitudes toward computers that reveal users’ computer experiences have continued to attract research interest since 1980s (Garland & Noyes, 2008). While several researchers have tried to find out physiological consequences (Beckers & Schmidt, 2003; Mayes, Sims, & Koonce, 2001), other researches have focused on the relationship between computer experience and anxiety (Bozionelos, 2001; Garland & Noyes, 2004), the predictors of computer anxiety and anger (Wilfong, 2006), and others have attempted to develop and investigate the relevance of computer attitude scales (Garland & Noyes, 2008; Smith, Caputi, & Rawstorne, 2007).

The literature also mentions certain reasons why people choose books over computers. First is related to the comfort provided by the security feature of papers that many people doubt until the information is retrieved from the hard disks for electronic documents; however, the paper is always physically there. In other words, papers are considered more tangible than electronic data (Mayes, Sims, & Koonce, 2001). Secondly, as Noyes and Garland (2008) noted in their study, papers have been favored over computers resulting in studies that used the metrics of speed, accuracy and comprehension.

Another study conducted by Noyes and Garland (2005) tries to explore people’s attitudes toward books and computers with focusing the aesthetic qualities. According to their results, books are more preferable medium for learning than computers and, as for learning purposes, individuals would learn more from books rather than computers. According to the study of Sharifirad and Sharifirad (2011), college students (n=127) preferred learning from books to computers because they believed that books have more reliable information than computers. Moreover, they further argued that easy use of books and type of information contained in books have an effect on the preference over computers.

Similarly, Mangen, Walgermo, and Brønnick (2013) concluded from their study that participants reading from printed materials performed better than the participants in the computer-reading group did. As Noyes and Garland (2005) asserted; the physical attributes of papers create more satisfaction

for readers in a learning context. Conversely, it can be concluded from the literature that display-related factors such as display orientation, polarity, and optical discomfort also play roles for individuals' unwillingness to study on computer screen (Ackerman & Lauterman, 2012).

Although early studies have indicated that papers demonstrated superiority over computers, mixed and inconsistent findings have been also presented in the literature (Burt, 2006; Hermena et al., 2017). More specifically, a recent longitudinal study investigating university students' preferences of reading from paper or digital screen shows that participants' preference of reading on papers or digital platforms did not significantly change from 2008 to 2011 (Kazanci, 2015).

Moreover, Mayes, Sims and Koonce (2001) claimed that there is no significant difference between individuals' reading pace and recalling the information whether a video display terminal (computer monitor) or a piece of paper is used. Another study conducted by Noyes, Garland, and Robbins (2004) stated that there was no significant difference in the comprehension scores or the overall workload scores for the two media. It is possible to conclude from the findings that with the development of display screen technology, more valid studies might be conducted highlighting visual quality of technological tools (Noyes & Garland, 2008).

With the advent of the Internet, there is no need to have physical access to material because of the fact that complete books and other paper-based materials can be located in the Internet where the users have a chance to access easily and ubiquitously (Noyes & Garland, 2005). Mangel, Walgermo, and Bronnick (2013) asserted that screen reading rather than reading from paper has become a new paradigm, especially for young generations. Motivational benefits play an instrumental role in the preferences for digital texts (Singer & Alexander, 2017b). Although new generation has abilities to use new media effectively, some students have been more engaged with the text than their peers (Pervez, 2018).

Although, rapid and widespread access to ICT have been witnessed through the societies, little is still known about the implications of learning from text and digital devices such as computers, tablets, and smart phones providing access for reading (Singer & Alexander, 2017a). The attitudes play a vital part in the explanation of the difference between books and computers (Sharifirad & Sharifirad, 2011). Indeed, Valentine, Balski, and Hamilton (2017) stated that exploring the differences from users' perspective is vital to evaluate the difference between text and computer platforms.

Although the contributions from digital divide studies and the comparison of attitudes and toward books and computers have been extensive in the literature, empirical evidence regarding these topics from rural areas is still rare. Therefore, this paper contributes to the emerging scholarly discourse by exploring attitudes toward books and computers of high school students from rural areas.

## 2. METHOD

### 2.1. Participants

This study included 412 high school students from a county of a city situated in Aegean Region of Turkey, which is known as a rural area in that region. The sample was limited to that group for two specific reasons; (a) showing digital divide is not only about the eastern part of Turkey, but exists all around the country, (b) the age group has official computer courses in their school highlighting some extent of accessing computers. There has been only one high school in the county, which was selected as a field for this study. Table 1 shows cross-tabulation of gender and grades in the high school. The number on Table 1 show that there are more female students in the school than males. Furthermore, the number of 9<sup>th</sup> graders is higher than the other grades.

**Table 1.** Cross-tabulation of gender and grades

Gender	Grade 9	Grade 10	Grade 11	Total
Female	109	53	66	228
Male	88	34	62	184
<b>Total</b>	197	87	128	412

Moreover, the average age of students was calculated as 15.7 with a standard deviation of 1.14 (n=407). The students were registered to two different types of high school (regular and vocational including three departments; Electricity, Accounting and Clothing & Apparel) which shared the same building the center of county. As the number on Table 2 display, more students were registered to

regular high school than the vocational school. Moreover, Table 2 also shows that 158 students were still living in the villages situated around the county when the study was conducted.

**Table 2.** Cross-tabulation of departments and accommodation places

Types of High School & Departments	Accommodation Place		Total	
	County Center	Village		
High School Regular	140	109	249	
Vocational Electricity	6	6	12	
High School Accounting	11	11	22	
	Clothing & Apparel	93	32	125
<b>Total</b>	250	158	408	

The students were asked to point out their parents' educational background. Table 3 reveals that most of the students' families are graduates of elementary schools.

**Table 3.** Cross-tabulation of schooling levels and family educational background

Levels of Schooling	Mother's Background		Father's Background	
	n	%	n	%
Elementary School	299	72.6	215	52.2
Secondary School	64	15.5	101	24.5
High School	34	8.3	62	15.0
University	7	1.7	27	6.6
Master Degree	-	-	1	0.2
PhD	1	0.2	-	-
<b>Total</b>	405	98.3	406	98.5

Besides, family educational background, the students were asked to state whether they had a library and/or personal computer at home. Table 4 shows that half of the students reported that they have library at their home (51.5%) whereas most of the students do not have any personal computer (83.5%). Table 5 shows that 37% of students have more than 20 books in their personal libraries.

**Table 4.** Having library or personal computer at home

Options	Library at Home		Personal Computer at Home	
	n	%	n	%
Yes, I have	212	51.5	68	16.5
No, I don't have	199	48.3	344	83.5
<b>Total</b>	411	99.8	412	100.0

**Table 5.** Number of books in the library at home

Interval	n	%
1-5	60	14,6
6-10	75	18,2
11-15	66	16,0
16-20	54	13,1
More than 20	153	37,1
<b>Total</b>	408	99,0

**2.2. Design of the Study & Instrumentation**

The researchers conducted a comprehensive literature review of the earlier studies. Afterwards, the researchers decided to apply the instrument designed by Noyes and Garland (2006). Basic demographics were adapted to the realities of the research context, such as schooling and accommodation. The second part includes the same sentences regarding the attitude toward computers (21 items) and books (21 items), separately (42 items in total). The third part covers 17 items regarding the preference of computers over books or vice versa. The second and third parts are based on a 5-Likert scale from strongly disagree to strongly agree. Content validity was obtained by three different expert views. A Turkish language expert primarily controlled the designed instrument. The researchers applied for data collection permission and followed the necessary regulations. The printed surveys were given to teachers to collect the data. Surveys were submitted to the researchers at the end of the week. The validity of the study is limited to the reliability of the instrument developed by the researcher and honesty of the study participants' answers.

Since the main aim of the study is to unfold how students perceive books and computers in rural areas in this modern era, non-experimental survey research method was utilized with a convenient sampling (Fraenkel & Wallen, 2009). The collected data was analyzed with SPSS program where parametric data analyses techniques were used throughout the study as a result of non-violation of the normal distribution assumption. In order to reveal statistical differences among students, t-tests and ANOVA were conducted.

**3. RESULTS**

Following the demographic questions, as the second part of the study, the students were given 21 items about books and 21 items about computers where only the tool was different within the sentences (Table 6). Over 21 items, only seven computer items were higher in terms of mean scores in comparison to books (higher mean scores on item comparisons were colored).

**Table 6.** Attitude items on computers and books

<b>Items about computers</b>	<b>n</b>	<b>M</b>	<b>S.D.</b>	<b>Items about books</b>	<b>n</b>	<b>M</b>	<b>S.D.</b>
C1. A computer is like a good friend.	411	3,46	1,11	B1. A book is like a good friend.	412	4,24	0,88
C2. A computer is like a tutor.	410	3,09	1,13	B2. A book is like a tutor.	411	3,63	1,03
C3. A computer overcomes my boredom.	412	3,59	1,15	B3. A book overcomes my boredom.	412	3,62	1,09
C4. Computers are fascinating.	411	3,51	1,26	B4. Books are fascinating.	411	3,63	1,05
C5. Computers are smarter than people are.	411	2,30	1,35	B5. Books are smarter than people are.	411	2,39	1,14
C6. Every home should have a computer.	412	4,08	1,06	B6. Every home should have a book.	412	4,66	0,66
C7. I use a computer easily.	409	3,78	0,95	B7. I use a book easily.	410	4,15	0,87
C8. I hope I never have a job that requires me to use computers.	410	1,79	0,95	B8. I hope I never have a job that requires me to use books.	411	1,72	1,11
C9. I learn more rapidly when I use a computer.	411	3,44	1,11	B9. I learn more rapidly when I use a book.	412	3,75	1,00
C10. I use a computer when I have nothing else to do.	409	3,37	1,18	B10. I read a book when I have nothing else to do.	409	3,62	1,06
C11. Interacting with a computer is a good way to pass the time.	409	3,23	1,29	B11. Interacting with a book is a good way to pass the time.	410	3,88	1,04
C12. One can learn new things from a computer.	411	4,21	0,83	B12. One can learn new things from a book.	411	4,31	0,84

Items about computers			Items about books		
	n	M S.D.		n	M S.D.
C13. People managed in the past without computers, so they are not really necessary now	409	2,08 1,03	B13. People managed in the past without books, so they are not really necessary now	410	1,61 0,93
C14. People who like computers are often not very sociable	410	2,39 1,00	B14. People who like books are often not very sociable.	410	1,86 1,04
C15. Computer-loving people like science.	410	3,65 1,03	B15. Book-loving people like science.	410	3,57 1,08
C16. A computer is a teaching tool.	412	3,91 0,89	B16. A book is a teaching tool.	411	4,28 0,74
C17. The computer is an effective learning tool.	410	3,70 0,96	B17. The book is an effective learning tool.	411	4,09 0,87
C18. A life without computers might be better.	410	2,17 0,96	B18. A life without books might be better.	411	1,61 0,93
C19. A computer broadens your horizons.	412	3,51 0,99	B19. A book broadens your horizons.	411	4,11 0,89
C20. You can get on in life without knowing about computers.	410	3,41 2,25	B20. You can get on in life without knowing about books.	410	2,40 1,13
C21. Using a computer gives me headache.	410	2,96 1,25	B21. Reading a book gives me headache.	409	2,17 1,16

Further analysis was conducted to see whether gender makes a significant difference on the attitudes. Independent sample t-test revealed that there were significant differences regarding the gender variable ( $p < .05$ ). Table 7 shows that eight computer related survey items significantly differ according to gender variable (female/male). Table 8 also demonstrates that seventeen book related survey items significantly differ according to gender variable (female/male).

**Table 7.** Independent sample t-test on gender variable according to computer attitude items

Items	Gender	<i>Levene's test for equality of variance</i>		M	S.D.	t	p
		F	p				
C1	Female	0,905	0,342	3,32	1,11	-3,007	0,003
	Male			3,64	1,09		
C2	Female	5,482	0,020	2,98	1,09	-2,157	0,032
	Male			3,23	1,17		
C3	Female	2,447	0,119	3,44	1,14	-3,021	0,003
	Male			3,78	1,13		
C7	Female	9,249	0,03	3,63	0,97	-3,628	0,000
	Male			3,97	0,89		
C10	Female	7,133	0,008	3,19	1,21	-3,573	0,000
	Male			3,60	1,10		
C11	Female	5,002	0,026	2,96	1,32	-5,031	0,000
	Male			3,58	1,18		
C20	Female	0,404	0,525	3,46	1,10	3,059	0,002
	Male			3,13	1,09		
C21	Female	3,008	0,84	3,18	1,27	4,041	0,000
	Male			2,69	1,17		



**Table 8.** Independent sample t-test on gender variable according to book attitude items

Items	Gender	<i>Levene's test for equality of variance</i>		M	S.D.	t	p
		F	p				
B1	Female	0,006	0,940	4,43	0,75	4,965	0,000
	Male			4,01	0,97		
B2	Female	1,008	0,316	3,72	1,01	1,979	0,048
	Male			3,52	1,05		
B3	Female	3,221	0,073	3,83	1,05	4,467	0,000
	Male			3,36	1,08		
B4	Female	0,620	0,431	3,86	1,01	5,048	0,000
	Male			3,34	1,04		
B5	Female	2,007	0,157	2,58	1,13	3,890	0,000
	Male			2,15	1,10		
B6	Female	21,926	0,000	4,76	0,55	3,236	0,001
	Male			4,54	0,75		
B7	Female	0,578	0,447	4,30	0,78	3,847	0,000
	Male			3,97	0,94		
B8	Female	6,965	0,009	1,55	1,02	-3,389	0,001
	Male			1,92	1,18		
B10	Female	3,662	0,056	3,79	1,02	3,747	0,000
	Male			3,40	1,06		
B11	Female	12,043	0,001	4,09	0,93	4,600	0,000
	Male			3,62	1,10		
B12	Female	0,150	0,699	4,41	0,79	2,883	0,004
	Male			4,17	0,87		
B13	Female	7,346	0,007	1,53	0,84	-2,009	0,045
	Male			1,72	1,03		
B16	Female	1,478	0,225	4,38	0,61	3,078	0,002
	Male			4,16	0,85		
B17	Female	0,106	0,745	4,20	0,82	2,741	0,007
	Male			3,96	0,92		
B18	Female	4,862	0,028	1,50	0,85	-2,709	0,007
	Male			1,75	1,01		
B19	Female	0,609	0,436	4,25	0,80	3,549	0,000
	Male			3,94	0,97		
B20	Female	1,651	0,200	2,26	1,10	-2,895	0,004
	Male			2,58	1,16		

Moreover, the same items were analyzed by independent sample t-test according to accommodation places (county center versus village). The results showed that two items in computer and two items in book have significantly differed according to accommodation place variable (Table 9).

**Table 9.** Independent sample t-test on accommodation place variable

Items	Accommodation Place	Levene's test for equality of variance		M	S.D.	t	p
		F	p				
C7	County Center	0,33	0,855	3,86	0,97	2,120	0,035
	Village			3,66	0,89		
C13	County Center	1,891	0,170	1,97	1,01	-2,564	0,011
	Village			2,24	1,03		
B13	County Center	8,430	0,004	1,53	0,82	-2,052	0,041
	Village			1,73	1,03		
B19	County Center	0,637	0,425	4,19	0,84	2,165	0,031
	Village			4,00	0,92		

Similarly, the students' answers were statistically examined by utilizing independent sample t-tests (yes/no levels) to figure out whether having a library or personal computer at home makes a significant difference or not. Results on Table 10 display that three computer items and three book items differed significantly in terms of having a library at home variable. Additionally, Table 11 also shows that four computer items and three book items differed significantly in regards to having a personal computer at home variable.

**Table 10.** Independent sample t-test on having a library at home variable

Items	Having a library at home	Levene's test for equality of variance		M	S.D.	t	p
		F	p				
C7	Yes	20,277	0,000	3,95	0,86	3,861	0,000
	No			3,59	1,01		
C11	Yes	0,165	0,685	3,09	1,32	-2,441	0,015
	No			3,40	1,25		
C12	Yes	0,002	0,963	4,29	0,79	1,982	0,048
	No			4,13	0,86		
B6	Yes	12,953	0,000	4,73	0,55	2,115	0,035
	No			4,59	0,75		
B14	Yes	0,450	0,503	1,76	1,01	-2,092	0,037
	No			1,97	1,07		
B17	Yes	0,153	0,696	4,18	0,77	2,198	0,028
	No			3,99	0,97		

**Table 11.** Independent sample t-test on having a personal computer at home variable

Items	Having a personal computer at home	<i>Levene's test for equality of variance</i>		M	S.D.	t	p
		F	p				
C3	Yes	12,549	0,000	3,99	1,04	3,319	0,001
	No			3,52	1,15		
C4	Yes	6,177	0,013	3,87	1,14	2,799	0,006
	No			3,43	1,27		
C7	Yes	1,507	0,220	4,15	0,87	3,517	0,000
	No			3,71	0,95		
C10	Yes	17,061	0,000	3,87	1,02	4,245	0,000
	No			3,28	1,19		
B10	Yes	0,093	0,761	3,34	0,97	-2,391	0,017
	No			3,67	1,06		
B14	Yes	5,783	0,017	1,52	0,82	-2,932	0,004
	No			1,93	1,07		
B19	Yes	0,040	0,841	4,34	0,78	2,300	0,022
	No			4,07	0,91		

The survey items were also analyzed by independent sample t-test to examine whether the type of high school (regular versus vocational) caused a significant difference or not (Table 12). The results showed two computer related items and five book related items that caused a significant difference among the groups.

**Table 12.** Independent sample t-test on school type variable

Items	School Type	<i>Levene's test for equality of variance</i>		M	S.D.	t	p
		F	p				
C2	Vocational	0,594	0,441	2,91	1,15	-2,669	0,008
	Regular			3,21	1,10		
C4	Vocational	3,373	0,067	3,71	1,20	2,707	0,007
	Regular			3,37	1,28		
B2	Vocational	3,914	0,049	3,43	1,04	-3,109	0,002
	Regular			3,76	1,00		
B3	Vocational	0,124	0,725	3,48	1,07	-2,037	0,042
	Regular			3,71	1,09		
B4	Vocational	1,309	0,253	3,47	1,07	-2,446	0,015
	Regular			3,73	1,02		
B7	Vocational	1,467	0,227	4,02	0,98	-2,457	0,014
	Regular			4,24	0,78		
B10	Vocational	3,242	0,073	3,41	1,07	-3,277	0,001
	Regular			3,75	1,02		

Between the second and third parts, an intermediary question was given to students to find out which tool they preferred to learn something (Table 13). The responses to this question revealed that majority of the students preferred both tools as learning medium.

**Table 13.** The learning medium preference; book versus computer

<b>Learning options</b>	<b>n</b>	<b>%</b>
Books	21	5,1
Computers	69	16,7
Both books and computers	265	64,3
No idea	12	2,9
Missing	45	10,9
<b>Total</b>	<b>412</b>	<b>100,0</b>

After the second part of the study, the students were given 17 survey items on how students feel about books or computers on a 5-point Likert scale (from strongly disagree to strongly agree). Table 14 shows the survey items and their basic statistics.

**Table 14.** Survey items from third part of the study and their basic statistics

<b>Items</b>	<b>n</b>	<b>M</b>	<b>S.D.</b>
1. Books could be carried easier than computers.	410	3,82	1,13
2. Computer's voice distracts me.	409	2,44	1,06
3. Reading a book is more comfortable than using a computer.	410	3,68	1,02
4. It is easy to find information on computers.	410	4,30	0,89
5. Using a computer is difficult.	410	2,22	1,02
6. Books are more secure than computers.	411	3,41	1,07
7. Accessing information on books is faster than computers.	410	2,55	1,06
8. Computers provide lots of information from a variety of sources.	410	4,31	0,79
9. Books are more usable, since they are brought up with you all the time.	409	3,69	1,04
10. Computers can be time consuming.	410	2,18	1,07
11. Computers are more fun than books.	409	3,76	1,02
12. Information from books is more reliable	408	3,32	1,03
13. Information from computers is more up to date.	410	3,84	0,94
14. Books are easier to annotate, highlight, bookmark, and make notes from.	411	3,74	0,96
15. Books allow greater thought, imagination, and initiative.	411	3,85	1,00
16. Information from computers is not memorable.	410	2,78	1,05
17. Books are more personal, tangible, human, more appealing, like the feel and look.	412	3,69	1,03

Additional analysis was conducted to see whether gender caused a significant difference on the items (Table 15). Independent sample t-test revealed that six survey items significantly differed according to gender variable (female/male) ( $p < .05$ ).

**Table 15.** Independent sample t-test on gender variable

Items	Gender	<i>Levene's test for equality of variance</i>		M	S.D.	t	p
		F	p				
3	Female	9,635	0,002	3,87	0,95	4,228	0,000
	Male			3,44	1,06		
9	Female	13,393	0,000	3,83	0,94	2,960	0,003
	Male			3,52	1,14		
11	Female	4,219	0,041	3,64	1,04	-2,736	0,007
	Male			3,91	0,97		
14	Female	7,571	0,006	3,86	0,92	2,713	0,007
	Male			3,60	0,99		
15	Female	16,647	0,000	4,04	0,88	4,375	0,000
	Male			3,61	1,08		
17	Female	2,087	0,149	3,82	0,99	2,894	0,004
	Male			3,53	1,06		

Besides, accommodation place (county center versus village) variable was analyzed by independent sample t-test to examine whether it caused a significant difference among the items (Table 16).

**Table 16.** Independent sample t-test on accommodation place variable

Items	Accommodation place	<i>Levene's test for equality of variance</i>		M	S.D.	t	p
		F	p				
2	County Center	2,161	0,142	2,31	1,02	-3,091	0,002
	Village			2,64	1,09		
17	County Center	6,800	0,009	3,57	1,06	-3,099	0,002
	Village			3,89	0,94		

Having a library at home or personal computer variables were analyzed by independent sample t-test. The results showed that having a personal computer did not cause any significant difference on the items whereas only one single item on having a personal library made a significant difference (Table 17).

**Table 17.** Independent sample t-test on having a library at home variable

Items	Having a library at home	<i>Levene's test for equality of variance</i>		M	S.D.	t	p
		F	p				
2	Yes	12,341	0,000	2,32	0,96	-2,391	0,017
	No			2,57	1,15		

The items were also analyzed by independent sample t-test to investigate whether the type of high school (regular versus vocational) created a significant difference (Table 18).

**Table 18.** Independent sample t-test on school type variable

Items	School Type	<i>Levene's test for equality of variance</i>		M	S.D.	t	p
		F	p				
3	Vocational	1,446	0,230	3,55	1,04	-2,068	0,039
	Regular			3,76	1,00		
7	Vocational	1,381	0,241	2,35	1,01	-3,118	0,002
	Regular			2,68	1,07		
9	Vocational	10,214	0,002	3,53	1,13	-2,506	0,013
	Regular			3,80	0,97		
14	Vocational	0,161	0,688	3,61	0,92	-2,253	0,025
	Regular			3,83	0,98		

#### 4. CONCLUSIONS & DISCUSSIONS

The overall study results show that study participants recognize the advantages and disadvantages of computers in comparison to books. Additionally, when mean scores were examined for the same items on computers and books, higher mean scores were observed for book items where the rural area students highlighted books being a learning tool and their easily accessible features. This finding confirms the theoretical argument that the youth of today could regard computers as toys or machines in which they can deal with non-academic works such as surfing on the Internet, playing games, or sending e-mails (Noyes & Garland, 2005). Even the early studies (such as Hellerstein, 1986) demonstrated that computers, as communication media, have been utilized for certain pleasure purposes.

As for gender variable, female and male students differed in many attitude items. Although the mean scores of some attitude items were diverged, the main differentiation was seen in book related items. Moreover, female students' mean scores for feeling factors for both computers and books were higher than male students except for one item referring to computers' joyfulness. In order to complement these findings and add a theoretical perspective, females have less opportunity to access digital technologies than males; which is especially valid for females from rural areas (Mumporeze & Prieler, 2017). In general, many studies have highlighted that the use of computer-based technology and performance tasks requiring computers have been affected by computer anxiety (Bozionelos, 2001). In their longitudinal study, Walstrom, Thomas and Weber (2010) explored that female participants were more pessimistic than male counterparts regarding the impact of computers because of the fact that males have more experience and/or contact with computers. Therefore, the female students from rural areas who have less computer access opportunities would feel more anxious about using them. That situation will clearly reflect on their attitudes and real life computer skills and knowledge. Therefore, it is possible to assert that the quality of females lives in rural areas could be improved by sustaining the equal access to computers and the Internet (Mumporeze & Prieler, 2017).

Like gender variable, being enrolled at a vocational or regular high school created a significant difference on attitude and feeling items. While attitude items regarding books were much higher than computer items, all statistically differed items for feeling to both medium were about only books. Indeed, the students' responses from regular high school showed that the mean score of these items were higher than students from vocational high school. Several studies have reported that books are still preferred by individuals over computers in some situations. Although it may be suggested that demand for books has been disappearing due to the advance of computer utilization, people still hold positive attitude to books for several reasons (Noyes & Garland, 2005). If individuals use computers with more time and have advanced skills, they might demonstrate superiority and less physiological issues toward computers (Beckers & Schmidt, 2003).

Living in a county center or village did not show any divergence to computers and books. Only four items for attitudes and two items for feelings differed statistically. Cruz-Jesus, Vicente, Bacao, and Oliveira (2016) noted that socio-economic elements such as income, age, education and others play a vital role in the formation of an asymmetry in ICT adoption and utilization. Similarly, individuals' features such as social and communication functionality, habit, income, gender, and age could be main

drivers of ICT acceptance (Chipeva et al., 2018). Therefore, other variables should be investigated to reveal the variabilities. To illustrate, having a library and a personal computer at students' home made a difference regarding attitudes for computers and books. Having a library at home highlighted the favorable attitude items for computers and books. Similar findings were valid for students who have a personal computer at home. Although spending more time with computers does not guarantee increased preference for achieving tasks using the technological devices (Valentine et al., 2017), income to fulfill financial requirements for obtaining ICT has been considered as one of the major factors for digital divide (Chipeva et al., 2018). In general, the positive correlation between computer attitudes and computer experience has been highlighted in the literature (Garland & Noyes, 2004, 2008). Consistent with the literature on the relationship between attitude and experience; therefore, these results support previous research and recommendations.

Lastly, the majority of the students remarked that both books and computers could be considered as a medium of learning. Moreover, the number of students who preferred computers as a learning medium were much higher than their counterparts whose preference were toward books. These results support the statements highlighted in the literature that as a potential benefit, computer platforms have an advantage of innovative interactivity providing motivation, and increased availability and flexibility to reach learning materials, and advanced interactivity (Valentine et al., 2017). Indeed, some people cultivate more effective reading habits on paper than screen as a display medium (Ackerman & Lauterman, 2012).

Although the idea of paperless classrooms using digital devices for reading has gained more attention (Singer & Alexander, 2017a), some individuals still think that books are considered as a more permanent and easily transferable reading medium (Noyes & Garland, 2005). As Noyes and Garland (2005) pointed out people have more favorable attitudes toward books than computers. They continue to assert that this attitude is valid in comparative conditions; otherwise, individuals do not hold negative feelings to computers.

Even though number of years of schooling, literacy rate and income are major drivers in the utilization of the ICT (Szeles, 2018), the contemporary perception of digital divide embodies access to computers and the Internet in the information society (Beckers & Schmidt, 2003). In fact, Mayes, Sims and Koonce (2001) predicted that excessive reading information from papers might change in the future. Therefore, other than forcing people to utilize computers other than books, it is important to reveal their preferences and attitudes toward these two media and create opportunities accordingly. Last but not least, providing more technology related opportunities to rural areas and females must be a priority of every state for fighting against adverse effects of digital divide.

#### **4.1. Limitations and Future Research**

The purposeful and convenient sample is not a representative of any larger population of Turkey. Thus, other counties from different regions must be selected by considering their socio-economic status. Hence, the results of this study cannot be generalized to other cases. Therefore, the study could be duplicated with different samples and analyzed by stronger statistical analysis.

Beyond quantitative analysis, in-depth qualitative studies should be conducted to reveal the underlying reasons of the quantitative findings. More theoretically, research in this area can be informed by longitudinally studying long-term effects of computer versus paper-based texts in educational settings (Pervez, 2018). Although many studies have been conducted to understand the process while either people process text printed or digital, there is lack of studies, which investigate the more beneficial medium in terms of when, for whom, and for what purposes (Singer & Alexander, 2017a).

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