INVESTIGATION OF THE RELATIONSHIP BETWEEN TEACHERS' USE OF EDUCATIONAL TECHNOLOGIES AND NOMOPHOBIA

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Abstract:

The aim of this study is to investigate the relationship between nomophobia and the level of using educational technologies in teachers working in the centre of Zonguldak. A total of 274 teachers, 128 female and 146 male, participated in this study which was conducted by using a relational survey model. "Scale for Determination of Level of Teachers' Educational Technology Usage" and "Nomophobia Scale" was used in the study as data collection instruments. T-test and one-way ANOVA were used to determine whether teachers' educational technologies usage and nomophobia levels differed in terms of different variables. The relationship between teachers' educational technologies usage and nomophobia levels was examined with Pearson Correlation Analysis. According to the results obtained from data analysis, while significant difference was found between teachers' educational technologies usage levels in terms of the variables of gender, level of education, age and in-service training received on technology; no significant difference was found in terms of the variable of the length of service. In the scores obtained from the nomophobia scale given to teachers, no significant difference was found in terms of the variables of gender, length of service, level of education, age and in-service training received on technology. However, no significant relationship was found between teachers' educational technologies usage and nomophobia levels. In the light of results obtained from the study, it is recommended to give in-service trainings to teachers where current technologies are introduced due to the rapid development of technology.

Keywords: educational technology, nomophobia, teachers

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1. Introduction

Technological developments and innovations affect all institutions and societies in the world. Educational institutions and stakeholders related to education are among those most affected by these developments. Especially with information technologies rapidly finding a place for themselves within education, the number of technological devices used in the classroom for the benefit of education has increased. It is important for teachers to use information technologies actively for the educational process to be more functional and faster (Pollock and Al-Bataineh, 2018). Within the last three decades, classrooms hosted many technological devices. Tools such as typewriters, video cassettes, televisions, overhead projectors, projectors, computers, dot matrix printers, inkjet printers, laser printers, scanners, tablets, smartboards, 3D printers and smartphones have taken many roles in education. Teachers may develop an addiction to technology since these changing and renewed technological tools make their work easier (Ertemel and Aydın, 2018; Erdoğan and Eker, 2020).

With the practicality of developing technologies, teachers use technology in their classes without requiring expertise. While teachers adapt themselves to this new process, it won't be unusual for students to be proficient in technology. In their study, Hoper and Rieber (1995) stated that teachers won't be indifferent to students' predisposition to technology and having such a command of technology. When the technological infrastructure in recent years is considered, problems may also occur in the use of appropriate educational technology tools (İnce and Akdemir, 2013). Although education still focuses on the traditional pattern in the Republic of Turkey, the efforts to develop modern and new curricula have gained importance in recent years (MoNE, 2018).

The classroom environment requires a dynamic process with the techniques and methods used in lessons, the presentation of subjects to students and the tools and materials used to provide interaction. The competence to use technological tools in education, which is one of the biggest challenges, is important for teachers to overcome the difficulties they encounter in the teaching process (Lim and Khine, 2006; Eker, Akar, Kamar and Kamar, 2019). In the developing century, teachers' technological competencies and their levels of using these have become important. More frequent use of mobile learning by people today requires some technological competencies. Ministry of National Education (MoNE) gives importance to in-service training and organizes trainings for teachers to have these competencies.

Smartphones are important technological devices teachers have with their practicality and portability. The enriched contents of smartphones create new opportunities for people and enable them to access education and training opportunities through mobile learning whenever they want (Attewell and Savill, 2004). Many jobs and actions in the world and limits of learning have started to get rid of the concept of space by coming out of walls. Educational opportunities that come with mobile technologies create alternatives to learning environments and individuals benefit from these

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opportunities thanks to mobile technologies whenever they want to learn in their daily lives (Klopfer and Squire, 2002).

The spread of learning through mobile devices and their non-educational features may lead to an increase in the usage time of smartphones. Teachers' spending more time with their smartphones may cause them to develop an addiction to these devices. Nowadays, when mobile learning and mobile phones have taken so much space in the lives of teachers, the feelings of trust and dependence on mobile phones can be mixed with each other. In the literature review, it was found that while there were many studies on the use of educational technologies by teachers, no studies were found on the relationship between teachers' demographic characteristics and technology use levels and their nomophobia levels. Examining the relationship between teachers' technology use levels and nomophobia levels and the results found will provide new solutions in preventing or decreasing the effects of nomophobia that may occur in teachers against technology and smartphones, which are the most used devices of technology.

Raising awareness in teachers on nomophobia may be effective in preventing this disorder, which is more common in younger age groups. This study is important in terms of evaluating the nomophobia levels of teachers of the Ministry of National Education, who use educational technologies in lessons, against smartphones which are the most used technological tool by teachers. In addition, the results obtained from this study will be a source of data for the ministry and stakeholders related to education in forming education programs and in teacher training programs. It is also important for teachers who use educational technologies frequently to protect their health against these technologies. This study is important in terms of preventing nomophobia from finding a place in teacher training programs as a preventive activity.

The aim of this study is to examine the relationship between nomophobia and the level of using educational technologies in teachers of the Ministry of National Education working in the centre of Zonguldak. The study also examined teachers' use of educational technologies and nomophobia levels in terms of different variables. For this purpose, answers were sought to the following sub-problems.

1) Do teachers' use of educational technologies and nomophobia levels differ significantly in terms of;
    a. Gender,
    b. Length of service,
    c. Educational level,
    d. Age.
    e. In-service training received on technology?
2) Is there a significant relationship between teachers' use of educational technologies levels and nomophobia?

2. Methods

2.1. Research Model
In this study, "relational survey" model was used to find out the relationship between teachers' use of educational technologies levels and nomophobia. A survey model is a research approach that aims to describe a past or existing situation as it is. Relational survey model, which is a type of survey model, tries to determine the presence and/or degree of covariance between two or more variables (Karasar, 2005).

2.2. Participants
The study group consists of 274 teachers, 128 females and 146 males, working in schools of the Ministry of National Education in the central district of Zonguldak province. Table 1 shows the information on demographic distribution.

Table 1: Demographic distribution of the teachers in the study

Gender	n	%
Female	128	46.7
Male	146	53.3
Total	274	100
Length of service	**n**	**%**
1-5 Years	9	3,3
6-10 Years	22	8
11-15 Years	44	16.1
16-20 Years	73	26.6
21 Years and longer	126	46
Total	274	100
Level of education	**n**	**%**
Undergraduate	234	82,91
Postgraduate	40	17.09
Total	274	100
Age	**n**	**%**
≤35	44	16,2
36-40	57	20.8
41-45	57	20.8
46-50	63	22.9
≥51	53	19.3
Total	274	100
The state of having received in-service training	**n**	**%**
Yes	235	85.8
No	39	14.2
Total	274	100

2.3. Data Collection Tools
The study data were obtained by using "Personal Information Form", "Scale for Determination of Level of Teachers' Educational Technology Usage" and "Nomophobia Scale".

Personal Information Form: This form included information about gender, length of service, age, educational level, in-service technology training received and type of school teachers in the study worked in.

Scale for Determination of Level of Teachers' Educational Technology Usage: Scale for Determination of Level of Teachers' Educational Technology Usage developed by Bayraktar (2015) consists of 38 items and 4 sub-factors. In this study, analyses were made by using the total score of the scale. As a result of the analyses, the reliability coefficient of the overall scale was found as 0.97. As a result of the reliability analysis conducted for this study, the Cronbach alpha coefficient was found as 0.96 for the overall scale and it was concluded that the scale is reliable.

Nomophobia Scale: Turkish adaptation of the Nomophobia Scale developed by Yıldırım and Correia (2015) was conducted by Yıldırım, Sumuer, Yıldırım and Adnan (2016). The 20-item 5-Likert type scale consists of 4 sub-factors. The total score of the scale was used for this study. In their study, Yıldırım and Correia (2015) found Cronbach Alpha value as 0.95 for the reliability coefficient of the scale. As a result of the reliability analysis conducted for this study, the Cronbach Alpha value of the scale was found as 0,94 for the overall scale and it was concluded that the scale is reliable.

2.4. Data Analysis

T-test and one way ANOVA methods were used in the study to determine whether teachers' educational technologies usage and nomophobia levels differed significantly in terms of gender, length of service, level of education, age, and in-service training received. The relationship between teachers' educational technologies usage and nomophobia levels was examined with Pearson Correlation Analysis. IBM SPSS Statistics 20,0 program was used for analyses.

3. Results

In this part of the study, it was examined whether teachers' educational technologies usage and nomophobia levels differed significantly in terms of the variables of gender, length of service, level of education, age and in-service training received. Lastly, the relationship between teachers' educational technologies usage and nomophobia levels was examined. T-test results for the variable of gender are shown in Table 2.

Table 2: Analysis results of teachers' educational technologies
usage and nomophobia levels in terms of gender variable

	Gender	n	$\bar{X}$	sd	t	df	p
Technology usage score	Female	128	3,60	1,03	-3,142	272	,002*
	Male	146	3,91	0,98			
Nomophobia score	Female	128	2,89	0,96	,416	272	,678
	Male	146	2,84	1,04			

*p<0,05

According to Table 2, when technology usage levels are examined, it can be seen that male teachers had a mean score of (X=3.91), while female teachers had a mean score of (X=3,60). As a result of t-test analysis, this difference was found to be significant and male teachers were found to have higher technology usage levels in lessons than female teachers. When the mean scores taken from nomophobia scale were examined, no statistically significant difference was found between female (X=2.89) and male (X=2.84) teachers. Anova results for the variable of the length of service are shown in Table 3.

Table 3: Analysis results of teachers' educational technologies
usage and nomophobia levels in terms of length of service variable

		n	Mean	Standard deviation	f	df	p
Technology usage levels	1-5 Years	9	3,92	0,96	1,790	4; 269	,131
	6-10 Years	22	4,07	0,88			
	11-15 Years	44	3,94	1,10			
	16-20 Years	73	3,71	0,97			
	21 + Years	126	3,67	0,97			
	Total	274	3,86	1,02			
Nomophobia levels	1-5 Years	9	2,98	1,02	,615	4; 269	,653
	6-10 Years	22	3,08	0,96			
	11-15 Years	44	2,91	0,97			
	16-20 Years	73	2,79	1,02			
	21 + Years	126	2,84	1,03			
	Total	274	2,92	0,93			

When Table 3 is examined, one way ANOVA results show that there are no significant differences between teachers' educational technologies usage and nomophobia levels in terms of length of service variable. T-test results for the variable of level of education are shown in Table 4.

Table 4: Analysis results of teachers' educational technologies
usage and nomophobia levels in terms of level of education variable

		n	X	sd	t	df	p
Technology usage levels	Undergraduate	234	3,70	1,07	-2,980	272	,003*
	Postgraduate	40	4,12	0,98			
Nomophobia levels	Undergraduate	234	2,87	1,01	,260	272	,795
	Postgraduate	40	2,83	0,91			

*p<0,05

In Table 4, when technology usage levels were examined, the mean score of undergraduates was found as (X=3.70), while mean score of postgraduates was found as (X=4.12). As a result of t-test analysis, this difference was found to be significant and it was found that teachers with an undergraduate degree had higher technology usage levels than teachers with a postgraduate degree. In terms of mean scores from

nomophobia scale, no statistically significant difference was found between teachers with an undergraduate degree (X=2.87) and teachers with a postgraduate degree (X=2.83). Anova results for the variable of age are shown in Table 5.

Table 5: Analysis results of teachers' educational technologies
usage and nomophobia levels in terms of the variable of age

		n	$\bar{x}$	sd	f	df	p
Technology usage levels	≤35	44	3,98	0,98	2,519	4; 269	,042*
	36-40	57	3,96	1,04			
	41-45	57	3,68	1,10			
	46-50	63	3,64	0,97			
	≥51	53	3,61	0,94			
	Total	274	3,61	1,02			
Nomophobia levels	≤35	44	2,94	0,98	,213	4; 269	,931
	36-40	57	2,9	1,02			
	41-45	57	2,81	1,03			
	46-50	63	2,87	0,96			
	≥51	53	2,81	0,98			
	Total	274	2,86	1,07			

*p<0,05

When Table 5 is examined, as a result of the one-way ANOVA, a significant difference was found between teachers' technology usage levels and the variable of age. Tukey test was conducted to find out between which age groups this difference was. As a result of the analysis, it was found that this difference was between teachers who were 35 years of age and younger and those who were 51 years of age and older. According to this result, the technology usage levels of teachers who were 35 years of age and younger were significantly higher than those who were 51 years of age and older. It was found that nomophobia levels of teachers did not differ significantly in terms of the variable of age. T-test results of teachers for the variable of in-service training received are shown in Table 6.

Table 6: Analysis results of teachers' educational technologies usage
and nomophobia levels in terms of the variable of in-service training received

		n	$\bar{x}$	sd	t	df	p
Technology usage levels	No	39	3,39	1,06	-3,042	272	,003*
	Yes	235	3,83	0,98			
Nomophobia levels	No	39	3,02	0,98	1,249	272	,213
	Yes	235	2,84	1,02			

*p<0,05

In Table 6, when technology usage levels were examined, mean scores of teachers who received in-service training on technology were (X=3.83), while mean scores of teachers who did not receive in-service training on technology were (X=3.39). As a result of the t-test analysis, it was found that this difference was significant and teachers who received

in-service training on technology had higher technology usage levels than teachers who did not receive in-service training on technology. When mean scores from nomophobia scale were examined, no statistically significant difference was found between teachers who received in-service training (X̄=2.84) and those who did not receive in-service training (X̄=3.02). Finally, the analysis results regarding the relationship between teachers' technology usage and nomophobia levels are shown in Table 7.

Table 7: Pearson Correlation Analysis results between teachers'
educational technologies usage and nomophobia levels

	n	Pearson Correlation (r)	p
Technology usage levels	274	,104	,085
Nomophobia levels	274		

When the Pearson Correlation Analysis results in Table 7 were examined, no statistically significant relationship was found between teachers' educational technologies usage and nomophobia levels.

5. Discussion and Conclusion

This part focuses on the results obtained from the study and the evaluation of these results with the relevant literature.

When the difference between educational technologies usage levels of the teachers in the study was examined in terms of gender, a significant difference was found in favor of male teachers. It was found that educational technologies usage tendencies of male teachers working in the state schools of Zonguldak central district were higher than those of female teachers. There are studies in the literature that support this finding (Çelik, 2019; İşman, 2002). In different studies examining attitudes towards technology, significant differences have been found in favor of male teachers (Şahin and Namlı, 2019; Aktürk and Delen, 2020; Kabataş and Yılmaz, 2018; Gökbulut and Çoklar, 2017). As a result of the independent t-test they conducted on the state of using technology in lessons, Safa (2019) and Durudu et al. (2014) found significant differences in favor of male teachers. In the results of a similar study conducted, female teachers were found to have lower computer attitudes than male teachers (Ibanez and Saez, 2010). Thomson (2019) explained this situation as the fact that with the introduction of personal computers to homes starting from 1980s, computers were introduced as an electronic toy designed for men and parents generally kept computers in the rooms of male children. The fact that generally men work in jobs requiring computer use and they use the computer more in working life may have caused this result in favor of male teachers.

When the differences in nomophobia levels of teachers were examined in terms of gender, no statistically significant difference was found between female and male teachers. Similarly, Öz and Tortop (2018) found that nomophobia scores of university students did not differ in terms of gender. As a result of t-test they conducted in their studies, Arslan, Tozkoparan and Kurt (2019); Yıldız, Çengel and Alkan, (2020) found that

nomophobia levels did not differ in terms of gender. In another study, Avcı (2020) did not find a statistical difference in terms of nomophobia score and other sub-factors. There are also studies that have found significant differences between nomophobia levels. In their study, Ercan and Tekin (2019) found that females had higher nomophobic tendencies than males.

When the results of the study were examined in terms of length of service variable, no statistically significant difference was found between teachers' educational technologies usage levels in terms of length of service. When the length of service was examined in teachers who participated in the study, the lowest length of service was found as between 1 and 5 years with a rate of 3.3%. It was found that 8% of the teachers had a length of service between 6 and 10 years, 16.1% had a length of service between 11 and 15 years, 26.6% had a length of service between 16 and 20 years and the highest length of service was found as between 21 years and more with a rate of 46%. Similar to the results of the study, Yılmaz (2012); Çobanoğlu (2018); Hatipoğlu (2018) and Safa (2019) found that there were no statistical differences between teachers' length of service and their use of technology in lessons. Güneş and Buluç (2017); Çelik (2019) and Karasakallıoğlu et al. (2011) concluded that there were no significant differences between the length of service and teachers' technology usage levels. The result that there were no differences in terms of length of service can be explained by the fact that the Ministry of National Education increased in-service training on technology use in recent years and teachers of all age groups have been participating in these trainings. However, there are also studies in the literature which have found differences between teachers in terms of length of service factor. In their studies, Aktürk and Delen (2020); Ulaş and Ozan (2010); Kolburan and Gökdaş (2014) showed that teachers' rates of using technology in the classroom increased as their length of service increased.

When teachers' nomophobia levels were examined in terms of length of service variable, no statistically significant difference was found between teachers' nomophobia levels. In their studies, Arslan, Tozkoparan, Kurt (2019); Gezgin et al. (2020) concluded that teachers' nomophobia levels did not differ in terms of length of service. Similarly, Yıldız et al. (2020) showed that nomophobia levels of teachers did not have a significant effect on length of service. In a study on prospective teachers, Akhoroz (2019) showed that there were no significant differences between the nomophobia levels of prospective teachers who were 18-20 years old, those who were 21-24 years old and those who were older than 25 years old.

When the results of the study were examined in terms of the level of education, a significant difference was found between teachers' educational technologies usage levels in terms of the level of education. When the educational levels of teachers were examined, it was found that a great majority had an undergraduate degree with a rate of 82.91%. It was found that 17.09% of the participants had a postgraduate degree. In their studies, Safa (2019) found that 84.5% of the participants had an undergraduate degree, while Ozan and Ulaş (2010) found that 78.9% had an undergraduate degree. It was found that teachers with a postgraduate degree used educational technologies more when compared

with teachers with an undergraduate degree. It was concluded that as teachers' degrees increased, their dominance on educational technologies and their rates of adapting technological devices to lessons increased. The reason for this can be explained by the fact that teachers who receive postgraduate education have to use computers and their software more in their educational lives. Other studies have also reached similar results (Çelik, 2019; Bodur, 2019; İşman, 2002; Çobanoğlu, 2018; Uyduran, 2018; Cin and Yelken, 2019). However, Ozan (2009) showed that there were no significant differences in information technologies usage levels of primary school teachers in terms of their degrees. When teachers' nomophobia levels were examined in terms of their degrees, no statistically significant difference was found. Similarly, Yıldız et al. (2020) concluded that there were no significant differences in nomophobia levels in terms of participants' educational levels.

When the ages of the teachers in the study were examined, it was found that 16.2% were 35 and younger, 20.8% were between 36 and 40, 20.8% were between 41 and 45, 22.9% were between 46 and 50, and 19.3% were 51 and older. It was found that most of the teachers in the study were older than 40 years of age. It can be said that older teachers work in the central district. A significant difference was found between the educational technologies' usage levels of teachers in terms of different age levels. However, this difference was found only between the youngest and the oldest group. When the literature was reviewed, it was concluded in different studies that the variable of age did not cause a statistically significant difference in teachers' using a computer and internet-based technologies in education (Kaya, 2017; Ulaş and Ozan, 2010; Seferoğlu, 2014). Studies conducted by Ozan (2009) and Atlı and Akar (2019) showed statistically significant differences in educational technologies usage in terms of age. Since younger generations are more exposed to technology starting from their childhood, it is expected for younger age groups to have higher technology usage levels.

No significant differences were found when nomophobia levels were compared according to age. It can be said that the age factor does not have an effect on teachers' nomophobia levels. In their studies, Ramazanoğlu (2020); Adnan and Gezgin (2016) found that nomophobia levels of prospective teachers did not differ in terms of age. Similarly, Gezgin et al. (2020) found that nomophobia levels of prospective teachers did not differ significantly in terms of age. However, Yıldız et al. (2020) found that teachers between 21 and 25 years of age had significantly higher nomophobia levels than teachers who were older than 40 years of age.

When the results of the study were examined in terms of length of service variable, a significant difference was found between teachers' educational technologies usage levels in terms of their states of having received in-service training. It can be said that in-service trainings given to teachers about improving and changing educational technologies had an effect on this difference. It can be said that with more accessible online in-service trainings and courses in recent years, teachers had the opportunity to develop themselves and this caused an increase in their technology usage levels. It was found that 85.8% of the teachers in the study had received in-service training on

educational technologies. Similarly, Safa (2019) showed that 88% of the participants had received in-service training on educational technologies. It can be said that teachers who receive in-service training on educational technologies have higher educational technologies usage levels. When the literature was reviewed, studies with similar results were found (Çelik, 2019; Bodur, 2019; Uyduran, 2018). It can be said that in-service trainings have a positive effect on teachers' integration of technology. In their studies, Kaya (2017); Atlı and Akar (2019) concluded that teachers' states of having received in-service training did not cause a significant difference in their using educational technologies in lessons. When teachers' nomophobia levels were examined in terms of their states of having received in-service training, no significant difference was found. No studies were found in the literature which examined teachers' nomophobia levels in terms of their states of having received in-service training.

6. Recommendations

In the study, when the correlation between teachers' educational technologies usage and nomophobia levels was examined, no statistically significant relationship was found between the two scales. Since studies on nomophobia are limited, variables related to nomophobia have not been revealed yet. It will be possible to contribute to the literature with future studies and examine the variables related to nomophobia. The increasing use of smartphones in the modern world will increase the importance of these studies.

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

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References

Adnan, M., & Gezgin, D. M. (2016). Modern Çağın Yeni Fobisi : Üniversite Öğrencileri Arasında Nomofobi Prevalansı, *Ankara Üniversitesi Eğitim Bilimleri Dergisi*, *49*(1), 141-158.

Akhoroz, M. (2019). *Examining The Relationship Between Personalıty Traıts And Nomophobıa Among Preservıce Teachers.* (Yayınlanmamış Yüksek Lisans Tezi). Orta Doğu Teknik Üniversitesi, Ankara.

Aktürk, A. O. & Delen, A. (2020). Öğretmenlerin Teknoloji Kabul Düzeyleri ile Öz-yeterlik İnançları Düzeyleri ile Öz-yeterlik İnançları, *Bilim Eğitim Sanat ve Teknoloji Dergisi*, 4(2), 67-80.

Arslan, H., Tozkoparan, S., & Kurt, A. A. (2019). Öğretmenlerde Mobil Telefon Yoksunluğu Korkusunun ve Gelişmeleri Kaçırma Korkusunun İncelenmesi, *Erzincan Üniversitesi Eğitim Fakültesi Dergisi*, 21(3), 237-256.

Attewell, J., & Savill, C. (2004). *Learning With Mobile Devices Research And Development, LSDA,* London.

Atlı, Y. & Akar, S. G. (2019). Sınıf Öğretmenlerinin Bireysel Yenilikçilik Özellikleri ile Derste Teknoloji Kullanımına Yönelik Eğilimleri Arasındaki ilişkinin İncelenmesi, *Uşak Üniversitesi Eğitim Araştırmaları Dergisi*, 5(2), 1-31.

Avcı, S., (2020). *Öğretmenlerin Nomofobi Düzeylerinin Sosyodemografik Değişkenler Açısından İncelenmesi,* (Yayımlanmamış Yüksek Lisans Tezi). Çağ Ünversitesi Sosyal Bilimler Enstitüsü, Mersin.

Bayraktar, R. (2015). *Öğretmenlerin Eğitim Teknolojileri Kullanım Düzeylerinin Belirlenmesi: Ölçek Geliştirme Çalışması.* (Yayımlanmamış Yüksek Lisans Tezi). Karadeniz Teknik Üniversitesi Eğitim Bilimleri Enstitüsü, Trabzon.

Bodur, E. (2019). *Öğretmenlerin Teknoloji Entegrasyonu Öz Yeterlilikleri ile Etkileşimli Tahtaya Yönelik Tutumları Arasındaki İlişki.* (Yayımlanmamış Yüksek Lisans Tezi). Abant İzzet Baysal Üniversitesi, Bolu.

Büyüköztürk, Ş. (2017). *Bilimsel Araştırma Yöntemleri.* Pegem Akademi, Ankara.

Cin, A. & Yelken, T. Y. (2019). Ortaokul Öğretmenlerinin Teknolojik Pedagojik Alan Bilgileri ile Bilişim Teknolojisi Kullanım Düzeylerinin İncelenmesi, *Uluslararası Sosyal Araştırmalar Dergisi*, 12(65), 741-755.

Çelik, A. (2019). *Öğretmenlerin Eğitim Teknolojileri Kullanım Düzeylerinin Belirlenmesi: Sakarya İli Örneği.* (Yayımlanmamış Yüksek Lisans Tezi). Sakarya Üniversitesi Eğitim Bilimleri Enstitüsü, Sakarya.

Çobanoğlu, A. O. (2018). *Öğretmenlerin Eğitim Teknolojileri Kullanım Durumları ile Sosyal Medya Alışkanlıkları Arasındaki İlişki,* (Yayımlanmamış Yüksek Lisans Tezi) Çanakkale Onsekiz Mart Üniversitesi, Çanakkale.

Durudu, M., Gündüz, H. B., Titrek, O., & Hademoğlu, M. A. (2014). Eğitim Yöneticileri ve Öğretmenlerin Bilişim Teknolojilerini Kullanma Düzeyleri ve Bilişim Teknolojilerinden Yararlanmalarını Engelleyen Nedenler. *Sakarya Üniversitesi Eğitim Fakültesi Dergisi*, 0(4), 176-188.

Erdoğan, D., & Eker, C. (2020). Türkçe Öğretmen Adaylarının 21 yy Becerileri İle Yaşam Boyu Öğrenme Eğilimleri Arasındaki İlişkinin İncelenmesi. *Karaelmas Journal of Educational Sciences*, 8(1), 118–148.

Eker, C., Akar Elekoğlu, A., Kamar, P., & Kamar, M. (2019). Ortaokul Öğretmenlerinin 21 Yüzyıl Becerilerine yönelik Yeterlik Algılarının İncelenmesi. *Uluslararası Eğitim Bilimleri Dergisi*, (21), 26–37.

Ertemel, A. V. & Aydın, Gökhan (2018). Dijital Ekonomide Teknoloji Bağımlılığı ve Çözüm Önerileri. *Addicta-The Turkish Journal on Addictions*, 5(4), 665-690.

Ercan, Ö. & Tekin, N. (2019). Beden Eğitimi ve Spor Öğretmenlerinin Nomofobi Düzeylerinin İncelenmesi. *Journal of Global Sport and Education Research*, 2(1), 24-34.

Gezgin, D. M., Hamutoğlu, N. B., Basarmak, U. & Dağlı, E. S. (2020). Akıllı Telefon Kullanım Becerisi Bağlamında Okul Öncesi Öğretmenlerinin Nomofobi Eğilimlerinin İncelenmesi. *Akdeniz Eğitim Araştırma Dergisi*, 2(14), 1-16.

Gökbulut, B. & Çoklar, A. N. (2017). Bilişim Teknolojileri Rehber Öğretmenlerinin Teknoloji Koçluk Düzeyleri. *Türk Bilim Araştırma Vakfı*, 10(1), 126-138.

Güneş, A. M. & Buluç, B. (2017). Sınıf Öğretmenlerinin Teknoloji Kullanımları ve Öz Yeterlilik İnançları arasındaki İlişki, *Türk Bilim Araştırma Vakfı Dergisi*, 10(1), 94-113.

Hatipoğlu, S. (2018). *Öğretmenlerin Bilgi Teknolojileri Kullanımında Demografik Farklılıklar: Konya Meslek Liseleri Araştırması*, (Yayımlanmamış Yüksek Lisans Tezi). Selçuk Üniversitesi, Konya.

Hoper, S. & Rieber, L. (1995). Teaching: Theory Into Practice, *Department of Instructional Technology The University of Georgia*, 154-170.

Ibanez, M. S. & Saez, M. (2010). Gender differences in Computer Attitudes And The Choice of Technology-Related Occupations in a Sample of Secondary Students in Spain. *Computers ve Education*, 54(2), 578-587.

İnce, M., & Akdemir, Ö. (2013). The Investigations of Using Web 2 0 Technologies on English Writing Skills of Students with Different Learning Styles. *Egitim Arastirmalari-Eurasian Journal of Educational Research*, 53(13), 93–106.

İşman, A. (2002). Sakarya İli Öğretmenlerinin Eğitim Teknolojileri Yönündeki Yeterlilikleri. *Tojet, The Turkish Online Journal of Educational Technology*. 1(1), 72-91.

Kabataş, S. & Yılmaz, G. (2018). Öğretmenlerin Yaşam Boyu Öğrenme Tutumlarının Eğitim Teknolojileri Standartlarına Yönelik Öz-Yeterlikleri Açısından Değerlendirilmesi. *Bartin Üniversitesi Eğitim Fakültesi Dergisi*. 7(2), 588-606.

Karasar, N. (2016). *Bilimsel araştırma Yöntemi: Kavramlar İlkeler ve Teknikler*, Nobel Akademik Yayıncılık, Ankara.

Karasakallıoğlu, N., Saracaloğlu, S., & Uça, S. (2011). Türkçe Öğretmenlerinin Teknoloji Tutumları İle Bilgi Teknolojilerini Kullanma Düzeylerinin İncelenmesi. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*. 7(2), 26-36.

Kaya, B. (2017). *Sınıf Öğretmenlerinin Eğitimde Teknoloji kullanımına ilişkin Tutum Düzeyi İle Mesleğe Yönelik Tutumları Arasındaki İlişkinin İncelenmesi*. (Yayımlanmamış Yüksek Lisans Tezi). Ahievran Üniversitesi, Kırşehir.

Klopfer, E. & Squire, K. (2002). Environmental Detectives The Development of an Augmented Reality Platform For Environmental Simulations", *Educational Research Technology and Development*. 4(2), 1-50.

Kolburan, A. & Gökdaş, İ. (2014). Öğretmenlerin Bilgi ve İletişim Teknolojilerinden Yararlanma Durumlarının Bazı Değişkenlere Göre İncelenmesi. *Eğitim Bilimleri Araştırması Dergisi*. 4(1), 89-112.

Lim, C. P. & Khine, M. S. (2006). Managing Teachers' Barriers to ICT Integration in Singapore Schools. *Journal of Technology and Teacher Education. 17*(1), 97-125.

Milli Eğitim Bakanlığı, (2018). Eğitim Programları, (2020, November 11). Retrieved from http://mufredat.meb.gov.tr/Programlar. aspx: http://mufredat.meb.gov.tr/Programlar.aspx.

Ozan, C. & Ulaş, H. (2010). Sınıf Öğretmenlerinin Eğitim Teknolojileri Açısından Yeterlilik Düzeyi. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*. 14(1), 63-84.

Pollock, B. & Bataineh, A., (2018). Benefits Of Current Educational Technology: A Comparison Of Student And Teacher Preparations in Rural Illinois School District. *The Online Journal of Distance Education And E-Learning*, 3(1), 17-32.

Ramazanoğlu, M. (2020). Öğretmen Adaylarının Nomofobi Düzeylerinin Belirlenmesi. *Ekev Akademi Dergisi*. 3(81), 247-263.

Safa, B. S. (2019). *Sınıf Öğretmenlerinin Eğitim Teknolojileri Kullanım Düzeylerinin Bireysel Yenilikçilik Özellikleri Açısından İncelenmesi.* (Yayımlanmamış Yüksek Lisans Tezi). Aydın Adnan Menderes Üniversitesi Sosyal Bilimler Enstitüsü, Aydın.

Seferoğlu, S. S. (2014). *Öğretim Teknolojileri ve Materyal Tasarımı.* Pegem Akademi, Ankara.

Şahin, C. & Namlı, A. (2019). Öğretmen Adaylarının Eğitimde Teknoloji Kullanma Tutumlarının İncelenmesi. *Türkiye Sosyal Yardımlaşma Dergisi*, 2(1), 95-112.

Thomson, C. (2019). The Secret History of Women in Coding. *The New York Times Magazine*. 3(1), 1-19

Ulaş, H. & Ozan, C. (2010). Sınıf Öğretmenlerinin Eğitim Teknolojileri Açısından Yeterlilik Düzeyi. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*. 14(1), 63-84.

Uyduran, M. (2018). *Sınıf Öğretmenlerinin Bilişim Teknolojilerinin Farklı Değişkenler Açısından İncelenmesi.* (Yayımlanmamış Yüksek Lisans Tezi). Gaziantep Üniversitesi, Gaziantep.

Yıldırım, Ç., Evren, Yıldırım, S. & Adnan, M. (2016). A Growing Fear: Prevalence of Nomophobia Among Turkish College Students. *Information Development*. 3(1), 1322-1331.

Yıldırım, Ç. & Correia, A. P. (2015). Exploring The Dimensions of Nomophobia Development and Validation of a Self-reported Questionnaire. *Elsevier Computers in Human Behavior*. 3(7), 130-137.

Yıldız, E. P., Çengel, M. & Alkan, A. (2020). Öğretmenlerin Nomofobi Düzeylerinin Demografik Özelliklerine ve Akıllı Telefon Kullanım Alışkanlıklarina Göre İncelenmesi. *Ulusal Toplum Araştırmaları Dergisi*, 15(1), 5099-5120.

Yılmaz, M. (2016). *İlkokul Öğretmenlerinin Eğitimde Teknoloji Kullanımına İlişkin Bilgisayar Yeterliliklerinin ve Teknoloji Tutumlarının Değerlendirilmesi.* (Yayımlanmamış Yüksek Lisans Tezi). Mersin Üniversitesi Eğitim Bilimleri Enstitüsü, Mersin.