Digital Reading and Writing Attitudes of Preservice Elementary Teachers: A Correlational Research

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ABSTRACT

This study aims to examine the relationship between digital reading and digital writing attitudes of preservice elementary teachers. The sample of the research consists of 294 preservice elementary teachers studying at the faculty of education. The research sample was determined using the convenience sampling method. Attitude Scale for Digital Writing, Attitude Scale towards Digital Reading, and Personal Information Form were used as data collection tools. Data were analysed using R Studio software. Independent sample t-test, one-way ANOVA and simple linear regression analysis were used in the analysis process. The findings indicated that the reading attitudes and writing attitudes scores of the preservice elementary teachers did not differ according to gender, age, and grade level. However, it was found that the preservice teachers who stated that they read digital books had a higher level of reading and writing attitudes than the preservice teachers who stated that they did not read. It has been determined that there is a high level of significant relationship between digital reading and writing attitudes. According to the results of the simple linear regression analysis, it was found that the writing attitudes of the preservice elementary teachers who had high digital reading attitude levels were also high. As a result, it can be said that as the digital reading attitudes of the preservice elementary teachers increase, their attitudes towards writing will also increase. Experimental studies can be conducted to determine the effect of reading digital books on digital writing attitudes.

Key words: Digital Reading, Digital writing, Attitudes, Preservice teachers

INTRODUCTION

In today's world, which is constantly changing and developing, there are changes and developments in education systems as well as advances in science. Now, the use of technology in education and daily life is increasing, and it has become a part of education and daily life (Erdoğan, 2020). In this context, technological tools, which are more accessible every day, provide many opportunities as well as increasing communication and interaction (Akpınar, 2005).

With the advancement of technology, innovations have also occurred in education. Teachers' adaptation to these innovations is very important for teachers to be more beneficial to their students and to reach competence in their profession. It can be argued that teachers' being technology literate by including technology in education and adapting to technological developments, and planning and conducting the education and training process accordingly can increase the effectiveness of education (Sarıçoban & Bakla, 2012). As a reflection of this, different methods and applications in education systems are also striking. The innovations and transformations recorded in technology affect the linguistic skills of individuals by settling in their habits. This can be seen particularly in reading and writing attitudes.

Among the linguistic skills, reading is a very important skill in acquiring and interpreting information and in making new meanings out of what an individual reads. In order to be sustained in reading, reading motivation must be formed (Geçgel et al., 2020). Reading motivation is a significant element in the formation and maintenance of interest in reading. In the meantime, intrinsic and extrinsic motivation comes into play in reading. While intrinsic motivation reflects the interest in reading, extrinsic motivation stands out as a process that develops depending on external factors and rewards. Although intrinsic and extrinsic motivation differ from each other, it can be argued that both can be head for reading (Yıldız, 2013). Therefore, reading motivation is crucial in terms of turning reading into action, and the active realization of interest, attitude and desire. In addition, motivation in general is also effective in terms of continuous interest and need (Kızgın & Baştuğ, 2020).

Although today, with the advancement of technology, reading attitudes change from being more physical to digital, reading somehow takes place in the world of the individual. Especially technological phones, tablets and computers direct individuals to digital reading. Since digital reading is thought to be easier and more accessible and relatively more enjoyable, it has become quite common. This situation

has led to a change in the reading behaviors of individuals (Odabaş et al., 2018). However, in digital reading, students need to develop reading strategies not only to search for specific information, but also to make inferences, create complex arguments and process information (Lim & Toh, 2020).

Among the linguistic skills, writing are also an important skill. However, acquiring writing skills requires a certain level of education. In this respect, it can be said that the writing skill develops with the writing education and the infrastructure is formed with the education received (Göçer, 2014). Generally writing is creating a text with rules and integrity. The information structured in the mind with the training for writing is written down as a result of various mental processes and a meaningful integrity is revealed (Çeçen, 2014). Attitudes towards reading and writing are important when these linguistic skills are used. Individuals' evaluations of a subject, thought or situation are defined as attitudes (Susar Kırmızı, Kapıkıran, & Akkaya, 2021). Attitudes consist of three components: cognitive, behavioral and affective. There are two types, positive and negative attitudes. Positive attitude is effective in maintaining the tendency, desire and interest of the individual in literacy, but also improves the individual academically. On the contrary, negative attitudes can lead to a decrease in success in literacy and loss of interest in these skills (Kaplan Alptekin, 2022).

With the change and development of today's technological possibilities, the writing activity is not limited to the physical use of paper and pencil. In this sense, a new breath has come to writing with the use of screens and keyboards in the writing activity. It can be argued that in the future, the weight of physical tools for writing will decrease and move towards an increasingly digital medium. In this context, it can be said that the importance of digital tools has increased by increasing the interest and need for technological tools in educational environments and processes (Baştuğ & Keskin, 2017). Thanks to the developing technological opportunities, it can be said that students have started to prefer electronic books instead of physical books, and the printed materials in educational environments are gradually decreasing and they are moving towards educational environments where paper is not used (Pardede, 2019). In addition, various Web 2.0 tools for digital writing in today's technology improve writing skills, and are very effective in reaching wider audiences in a shorter time, keeping the individual's motivation high, expressing personal thoughts more easily and creating an interaction environment (Baş & Turhan, 2017).

When the relevant literature is examined, no study has been found that directly examines the attitudes of preservice elementary teachers towards digital reading and digital writing. As a similar study, Elkıran (2021) examined the relationship between preservice teachers' digital writing and reading attitudes, and found that their digital writing attitudes and digital reading attitudes were at a high level. Yamaç (2019), on the other hand, examined the perceptions of preservice elementary teachers regarding the use of digital technologies in literacy education. As a result of the study, preservice elementary teachers stated that despite the negative aspects of information and communication technologies, they increased reader-text interaction, provided access to a large

number of resources, motivated students, improved research skills of writing online content, increased interaction and expanded the target audience. Maden (2018) examined the digital reading habits of preservice teachers and developed a digital reading habits scale to determine the digital reading habits of them. As a result of the study, it has been determined that the psychological factors for reading are effective in the using of digital media by preservice teachers, and they frequently use digital media, they read digital media articles for information and entertainment, and having a web page and social media account is effective in gaining digital reading habits. Ustabulut (2021) determined the opinions of preservice teachers about digital writing. As a result of the study, it was determined that preservice teachers generally use digital writing, digital writing provides convenience, and it is easier to write in digital environment. Baki (2019) carried out a study to examine the effect of digital stories on the creative writing skills of preservice teachers and their ability to create digital stories. As a result of the study, it was determined that preservice teachers' digital story creation skills were at a good level and digital stories positively affected their creative writing skills. Uğur Göçmez and Ünal (2021), on the other hand, examined the opinions of preservice elementary teachers about the problems encountered in the first literacy teaching in the digital education process. As a result of the study, it was determined that the students had letter deformities, mixing sounds, not forming syllables, and having problems with spelling. Atabek (2020) carried out a development study of the digital writing scale for preservice teachers.

In general, it can be argued that learning environments where technological opportunities are offered make lessons and teaching more efficient (Aydın & Ciğerci, 2020, p. 1080). Therefore, it can be said that a technologically rich learning environment contributes positively to learning and interest. In addition, due to the intense and active use of technology outside of the classroom, it emerges as a significant factor in terms of concentration of attention and permanent learning (Dola & Aydın, 2020, p. 18). In this context, it can be said that teachers' enrichment of learning environments with technological tools and materials by adapting to the changing and developing conditions of the todays will both contribute to the linguistic skills of the students and enable the education to become more effective and efficient. Therefore, it is important to determine the attitudes of preservice teachers, who are the teachers of the future, towards digital environments (Susar Kırmızı & Yurdakal, 2021). Especially in primary education, which is the first step of education, elementary teachers play an important role in this regard. In primary education, which is the most effective education level in terms of acquiring knowledge and gaining skills, the attitudes of elementary teachers to today's technological conditions stand out as a significant factor. Therefore, in this study, it is of great importance to determine the attitudes of preservice elementary teachers who will start their profession towards digital reading and writing.

The problem of the research is "Is there a relationship between the attitudes of preservice elementary teachers towards digital reading and digital writing?" seeks an answer

to the question. Based on this problem, results were obtained about the level of preservice teachers' attitudes towards digital reading and writing. In the research, it was also examined whether the digital reading and digital writing attitudes scores of the preservice elementary teachers make a difference according to gender, age, grade level and reading digital book. In accordance with this purpose, answers to the following sub-problems were sought:

1. Do preservice elementary teachers' attitude scores towards digital reading differ according to gender and reading digital book?
2. Do preservice elementary teachers' attitude scores towards digital reading differ according to age and grade level?
3. Do preservice elementary teachers' attitude scores towards digital reading differ according to gender and reading digital book?
4. Do preservice elementary teachers' attitude scores towards digital reading differ according to age and grade level?
5. Is there a relationship between attitude scores towards digital reading and digital writing?
6. Are the attitude scores towards digital reading a meaningful predictor of the attitude towards digital writing?

METHOD

Research Design

Correlational research design was used in the research. This design was used since the relationship between attitudes toward digital reading and digital writing of preservice elementary teachers were examined. It provides a quantitative description of the universe by using a sample selected from a specific universe (Creswell, 2020; Fraenkel, Wallen, & Hyun, 2012). With the design, the level, degree and direction of the relationship are tried to be determined. The researchers cannot have any effect on the process other than the application of data collection tools in this method (Büyüköztürk et al., 2018).

Sampling and Participants

The sample of this research consists of 294 preservice elementary teachers studying at the education faculty of a university in the Central Black Sea Region in the fall semester of the 2021-2022 academic year. All of the sample determined by the convenient sampling method are preservice elementary teachers. 220 (74.8%) of the students are female and 74 (25.2%) are male students. The students are distributed between the ages of 18-27, with a mean age of 20.68 ($SD = 1.70$).

Data Collection Procedure and Instruments

The data of this study were collected online via Google Forms. The research was conducted by observing ethical rules and the data were collected in the fall semester of 2021-2022 in line with the permission obtained from the Social Sciences Ethics Committee of Amasya University. The preservice elementary teachers were asked to respond by sending the form link. The students were informed about the possible risks and benefits, the purpose of the study and ethical rules. While sending the form link, it was stated that participation is voluntary and that they can leave whenever they want. The application period was approximately 10-15 minutes.

Personal Information Form: There are four different variables such as gender, age, grade level and reading digital book status, as demographic information in this form.

Attitude Scale Towards Digital Reading (DRAS): It was developed by Susar Kırmızı and Yurdakal (2021) in order to examine preservice teachers' attitudes towards digital reading. The measurement tool consists of two subscales and 31 items. A 5-point scale (strongly disagree, partially disagree, undecided, partially agree, strongly agree) is used in answering the DRAS. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were applied to test the construct validity. EFA analysis was carried out with data from 324 preservice teachers. Kaiser-Mayer-Olkin value was found 0.82; Barlett's Test of Sphericity was significant, factor loads were between 0.47 and 0.81, and the total variance explained was 54.30%. CFA analysis was performed with the data collected from 164 preservice teachers and it was stated that the fit indexes were at the accepted levels (x^2/df = 2.75, RMSEA = 0.012, NNFI =.92, GFI =.64, CFI =.92). In the reliability analysis, the Cronbach alpha coefficient was examined and found to be.96. In this study, the internal consistency coefficient was calculated as.94. These all results are an indication that the DRAS is valid and reliable.

Attitude Scale for Digital Writing (DWS): The measurement tool was developed to determine preservice teachers' attitudes towards digital writing (Susar Kırmızı, Kapıkıran, & Akkaya, 2021). During the scale development process, data were collected from 1501 preservice teachers. EFA and CFA analysis were used to examine the construct validity of DWS. As a result of the analysis, it was found that three subscales (convenience, motivation, and effect) and a 25-item structure were formed. It was found that the total variance explained was 38.31%, and the factor loads were between 0.41 and 0.68. As a result of the DFA analysis, it was stated that the fit indices (x^2/df = 1.89, RMSEA =.063, NNFI =.94, GFI =.91, CFI =.94) were acceptable (Brown, 2015; Hu & Bentler, 1999; Kline, 2015, Tabachnick & Fidell, 2014). A 5-point scale (strongly disagree, disagree, partially agree, agree, strongly agree) is used in answering DWS. In the reliability analysis, the Cronbach alpha coefficient was examined and found to be.83. In this study, the internal consistency coefficient was calculated as.93. These all results are an indication that DWS is valid and reliable.

Data Analysis

Since the data of this research was collected online, the data set available in Google Form was first added to the R Studio software. The data was analysed with the R Commander module package included in this software. With the statistical analysis included in the package, first of all, the accuracy of

the data was examined with descriptive statistics. Normality tests were performed on the data set without missing data, and it was observed that the skewness- kurtosis coefficients were in the range of ±2, and it was found that the data had a distribution close to normal (Tabachnick & Fidell, 2014). Independent sample t-test was used to examine the difference between preservice teachers' digital reading attitude and writing attitude scores according to gender and reading digital book status variables in two groups; One-Way Analysis of Variance (ANOVA) was used to examine the differentiation of three or more groups according to grade and age level.

Pearson's Product-Moment correlation was used to analyse relationships between independent and dependent variables. Normality, linearity (correlation), normality of regression errors, covariance and multiple linearity assumptions were examined for the assumptions of simple linear regression analysis (Tabachnick & Fidell, 2014). Scatter diagrams were checked and it was determined that the data showed linear relationships. Regression errors showed a distribution close to normal. By examining the scatter diagrams consisting of standardized values of the predicted variable and standardized regression residuals, it was found that covariance was provided. The Variance Inflation Factor (VIF) and tolerance values were examined and it was found that they took values close to 1, as a result of which there was no multicollinearity. As a result, all these provided assumptions showed that the data were convenience for analysis. All statistical analysis were evaluated at the.05 significance level.

RESULTS

Digital Reading Attitude Scores for Demographic to Variables

Independent sample t-test and one-way analysis of variance (ANOVA) were used to test the changes in preservice teachers' attitudes towards digital reading according to gender, age, grade level and reading digital book status. Analysis results are given in Table 1 and Table 2.

According to Table 1, it was found that there was no difference preservice teachers' attitudes towards digital reading ($t_{(292)} = 1.40$, $p > .05$) in terms of gender, although females have higher attitudes than males. However, a significant difference was observed in the digital reading ($t_{(292)} = 5.50$, $p < .001$) scores according to the variable of digital reading

books. It was found that this difference was in favor of preservice teachers who stated that they read digital books.

According to Table 2, it was found that there was no difference in digital reading ($F_{(2, 291)} = .54$, $p > .05$) of preservice teachers according to age level. No difference was observed in the attitude scores towards digital reading ($F_{(3, 290)} = .46$, $p > .05$) according to grade level.

Digital Writing Attitude Scores for Demographic to Variables

Independent sample t-test and one-way analysis of variance (ANOVA) were used to test the changes in preservice teachers' attitudes towards digital writing according to gender, age, grade level and reading digital book status. Analysis results are given in Table 3 and Table 4.

According to Table 3, it was found that there was no difference preservice teachers' attitudes towards digital writing attitude scores ($t_{(292)} = .30$, $p > .05$) in terms of gender, although females have higher attitudes than males. However, a significant difference was observed in the writing attitude ($t_{(292)} = 2.73$, $p < .01$) scores according to the variable of digital reading books. It was found that this difference was in favor of preservice teachers who stated that they read digital books.

According to Table 4, it was found that there was no difference in writing attitudes ($F_{(2, 291)} = .96$, $p > .05$) of preservice teachers according to age level. No difference was observed in the attitude scores towards writing attitudes ($F_{(3, 290)} = .63$, $p > .05$) according to grade level.

Table 2. Digital reading attitude results of age and grade level

Variable	n	*M*	*ss*	*SD*	F	*p*
Age						
18-20	94	108.33	23.08	2	0.54	0.59
21-23	167	106.49	19.19	291		
24-27	33	110.12	21.77			
Grade level						
1st grade	49	108.90	23.52	3	0.46	0.71
2nd grade	62	105.08	20.27	290		
3rd grade	84	108.74	21.17			
4th grade	99	107.22	19.40			

Table 1. Digital reading attitude results of gender and digital reading book

Variable	n	*M*	*ss*	*SD*	*t*	*p*
Gender						
Female	220	108.46	21.23	292	1.40	0.163
Male	74	104.57	19.16			
Reading digital book						
No	202	103.20	20.15	292	5.50	0.001***
Yes	92	116.89	19.01			

*p < .001***

Table 3. Digital reading attitude results of gender and digital reading book

Variable	n	*M*	*ss*	*SD*	*t*	*p*
Gender						
Female	220	101.47	14.30	292	0.30	0.77
Male	74	100.91	13.50			
Reading digital book						
No	202	99.83	14.16	292	2.73	0.007**
Yes	92	104.61	13.40			

*p < .01**

The Relationship between Digital Reading and Writing Attitude

Pearson's product moment correlation coefficient analysis was conducted to determine whether there are significant relationships between preservice teachers' attitudes towards digital reading and writing. Analysis results are given in Table 5.

As can be seen in Table 5, there is a significant relationship between the attitude scores towards digital reading and digital writing. The relationship between digital reading and writing attitude scores was found to be positive and moderate significant ($r = .57$, $p < .01$). These findings show that as the preservice elementary teachers' attitude scores towards digital reading increase, their writing attitude scores also increase. In addition, it can be said that as the digital writing attitude scores increase, reading attitudes will also increase. It was found that the average of the total attitude scores of the preservice elementary teachers towards digital reading was at the level of $M = 107.48$; for digital writing was at the level of $M = 101.33$. Finally, simple linear regression analysis was tested to determine to what extent and in what direction the preservice teachers' attitude scores towards digital reading predicted their writing attitudes. Simple linear regression analysis change statistics are shown in Table 6, and simple linear regression analysis results are shown in Table 7.

Prediction of Digital Writing Attitudes by Reading Attitudes: Simple Linear Regression Analysis

As a result of the simple linear regression analysis, it was found that in Table 6, the preservice elementary teachers' attitude scores towards digital reading explained 33% of the change in the scores of digital writing ($F(1, 292) = 141.23$, $p < .001$, $\Delta R^2 = .32$). The model created for digital writing

attitude scores was found to be significant and it has a medium effect size. In other words, when other variables were controlled in this sample, preservice elementary teachers with high digital reading attitude levels also have high writing attitudes.

As seen in Table 7, digital reading attitude scores are positively related to writing attitude scores ($\beta = .57$, $t(292) = 11.88$, $p < .001$). This result shows that a one-unit increase in reading attitude scores is associated with a .39-unit increase in writing attitude scores. In the light of this result, it can be said that the digital reading attitudes of preservice elementary teachers are a significant predictor of their writing attitudes.

DISCUSSION AND CONCLUSION

In this research preservice elementary teachers' attitudes in digital read and writing examined. For this purpose, firstly attitudes in digital read and writing scores change examined by gender, age, class level, and reading digital book variables. It was found significant relationship between attitude of reading and writing variables by using simple linear regression analysis. After the significant relationship determined between the two variables, the predictiveness of reading attitudes in writing attitudes was tested using simple linear regression. In this section, the comparison and interpretation of the sub-problems with the relevant literature are given according to the findings.

According to the results of the first and second sub-problem, it was found that the digital reading attitudes of the preservice teachers did not differ according to the variables of gender, age and grade level. Attitude scores towards digital reading differ in favor of preservice teachers who read digital books. These results show that the digital reading attitudes of the preservice teachers are similar regardless of their gender, age and grade level. Akkaya and Çıvğın (2020) concluded that male preservice teachers have higher digital reading proficiency than females. Karim and Hasan (2007) also found that male university students have higher digital reading proficiency than females. On the contrary, there are studies determined that female teacher candidates'

Table 4. Digital reading attitude results of age and grade level

Variable	n	*M*	ss	*SD*	F	*p*
Age						
18-20	94	99.78	15.44	2	0.96	0.38
21-23	167	101.83	12.95	291		
24-27	33	103.18	15.48			
Grade level						
1st grade	49	103.04	13.45	3	0.63	0.59
2nd grade	62	99.53	13.33	290		
3rd grade	84	101.92	15.46			
4th grade	99	101.10	13.68			

Table 5. Pearson's Product-Moment Correlations

Variables	DRAS	DWAS
Attitude towards digital reading (DRAS)	-	
Attitude towards digital writing (DWAS)	0.57**	-
M	107.48	101.33
SD	20.76	14.08

$p < .01**$ (n = 294)

Table 6. Change statistics for linear regression analysis

	R	*R²*	SH	Change Statistics				
				ΔR^2	ΔF	df_1	df_2	*p*
Model 1	0.57	0.33	8.20	0.32	141.23	one	292	0.001***

$p < .001***$

Table 7. Regression analysis results

	Unstandardized		Standardized		*p*
	B	SH	*β*	*t*	
Model 1					
Constant	59.71	3.56	-	16.74	0.001***
Digital Reading Attitude	0.39	0.03	0.57	11.88	0.001***

$p < .001***$

reading attitudes differ significantly (Akkaya & İşçi, 2018; Bölükbaş, 2006; Ross, 2002). However, there are also studies that indicate that teacher candidates' reading attitudes are generally positive (Akkaya & İşçi, 2018; Temizkan & Sallabaş, 2009). Technological developments in the 21st century and the increasing use of mobile devices have adapted preservice teachers to this process. Technology is an indispensable element in terms of facilitating and arranging human life (Alyılmaz, 1997). Digitalization has led to significant changes in the field of reading, as in almost every field (Çeliktürk Sezgin, 2022). Preservice teachers read more from electronic sources than printed ones today, and they think that, it is easier and more economical to do research in electronic environments, digital reading is fun (Coiro et al., 2014; Maden, 2018), and digital reading facilitates multi-dimensional analysis and research (Yamaç, 2019), supports this situation. It can be argued that reading on many subjects in the digital environment using a tablet, phone or computer may have produced these results. Although it is an expected result that the digital reading attitude levels of the preservice teachers who read digital books are higher, the increase in the reading attitudes of the preservice teachers as a result of the habit formed as they read may have given the result of this study. As a reflection of the development of today's technological opportunities, it can be said that the interest of preservice teachers in technological environments will continue to increase and they will use technology intensively in their professional lives. However, it is also very important for them to use technology in their professional lives and to carry out students' learning processes in a planned and conscious way, taking into account the curriculum (Tezel, 2020). In this sense, the teacher should make students active and responsible in the learning process. In addition, the teacher can provide effective and permanent learning with the use of technology in the learning environment and application activities that appeal to more senses (Dola & Aydın, 2020).

According to the results of the third and fourth sub-problem, it was found that the scores of preservice teachers' attitudes towards digital writing did not differ according to the variables of gender, age and grade level. However, Elkıran (2021) determined that the digital writing attitudes of Turkish preservice teachers differ significantly in favor of female and studying in lower grades. It can be argued that the preservice teachers' departments are different and the interests and needs of the sample group differ in digital environments in the formation of these differences. Similarly, Bölükbaş (2006) determined that the writing attitudes of female preservice teachers differed significantly. At the same time, Yamaç et al. (2016) determined that preservice teachers generally consider writing activity important. Learning tools in recent years have changed the way today's students read and construct process and transmit knowledge and information (Pardede, 2019). Today, the pages followed in digital environments, the active and intensive use of various social media channels, and the development of writing skills in digital environments have begun. There is a change in 21st century about digital writing and literacy types (International Reading Association, 2009; Leu et al., 2016). Most people

now engage in writing activities in digital environments. Therefore, the fact that preservice teachers have similar digital writing attitude levels according to demographic variables in this study can be explained by this. It can be argued that preservice teachers who read more in digital environments than in printed books, have higher digital writing attitudes as a result of enriching their vocabulary and improving their mental skills.

According to the results of the "Is there a relationship between attitude scores towards digital reading and writing?" fifth sub-problem, a moderate significant positive correlation was found between the digital reading and writing attitudes of the preservice teachers. Similarly, Elkıran (2021) determined that there is a significant and moderate, positive relationship between Turkish preservice teachers' digital writing and reading attitudes. Reaching similar results in this study emerges as a result of the fact that preservice teachers even today's people, mostly write and read in digital environments. In support of this result, Ustabulut (2021) determined in his study that preservice teachers mostly prefer digital writing. There are studies which determines the views of teachers and preservice teachers about digital reading and writing (Hutchison & Reinking, 2011; Larson, 2012; Pierczynski, 2015). According to these studies, preservice teachers are willing to use the digital platforms for reading and writing. Besides they suggest that digital tools should be included in reading and writing education. This situation can be put forward as a reflection of the fact that digital writing is practical and fun as a result of today's changing technological advances (Baştuğ & Keskin, 2017) and technological tools are more involved in educational processes. At the same time, in the study conducted by Çetinkaya Özdemir and Kaya (2021), it was determined that the perceptions of preservice elementary teachers towards reading and writing were generally positive. Reading skill is closely related to other language skills (Arıcı & Taşkın, 2019). In this context, since reading and writing skills are two basic language skills that are closely related to each other, it can be said that writing skills develop as reading skills develop. It is known that reading attitude affects writing attitude (Ünal & İşeri, 2012). From this point of view, it is an expected result that preservice elementary teachers' attitudes towards digital reading and writing are related.

According to the results of the "Are the attitude scores towards digital reading a meaningful predictor of the attitude towards writing in the digital environment?" last sub-problem, the digital reading attitudes of the preservice elementary teachers are a significant predictor of the digital writing attitudes. In support of this result, it was determined that there is a reciprocal relationship between the digital writing and reading attitudes of Turkish preservice teachers (Elkıran, 2021). At the same time, studies revealing a relationship between reading and writing attitudes and skills (Ünal & İşeri, 2012; Eroğlu, 2013; Bölükbaş, 2006) also support this result. Akkaya and İşçi (2018) also determined that there is a low-level and positive relationship between preservice teachers' attitudes towards reading habits and their success in written expression.

As a result, digital reading and writing attitudes of preservice elementary teachers who have an important role in the acquisition and effective use of their students' reading and writing skills in their professional lives, were determined in this study. The research is important in that it presents findings about the use of reading and writing skills during the time spent on phones, tablets and computer devices that are frequently used in today's world (Susar Kırmızı & Yurdakal, 2021).

SUGGESTIONS

- In the light of the results obtained, reading and writing skills in the modern age are not only physically; at the same time, it has become a necessity to use it effectively in the digital environment.
- Within the scope of 21st century skills, it is expected that individuals will have acquired information and technology literacy and media literacy skills.
- It can be argued that the effective acquisition of these skills depends on the effective use of reading and writing skills and attitudes towards them.
- The fact that the study was carried out with preservice elementary teachers and at one university are one of the limitations. For this reason, examining the digital reading and writing attitudes of preservice teachers in different departments and universities can offer a broader perspective on the subject.
- In addition, a qualitative research on digital reading and writing can provide more in-depth data.
- Courses for the use of digital reading and writing in educational processes at the higher education level can be added to the curriculum.
- Finally, it can be ensured that teachers receive various in-service trainings on digital reading and writing.

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