

The Relationship between Digital Reading Disposition and Internet-based Reading Motivation: A Study on Pre-service Teachers

Umut Birkan Özkan, National Defence University, uozkan@msu.edu.tr  0000-0001-8978-3213

Keywords

Digital reading
Internet-based reading
Perceived competence
Digital reading disposition
Teacher training

Article Info:

Received : 04-03-2022
Accepted : 21-07-2022
Published : 04-08-2022

Abstract

This study focuses on the relationship between pre-service teachers' digital reading disposition and internet-based reading motivations, and in this context, it is aimed to examine the predictors of pre-service teachers' internet-based reading motivations on digital reading disposition. A quantitative research approach, using a relational survey design, was performed. The sample of the present study is the 401 pre-service teachers of Turkey. Correlation analysis and multiple linear regression analysis were used in the analysis of data obtained from two different scales. In the study, Digital Reading Disposition Scale and Internet Based Reading Motivation and Engagement Scale were used. Pre-service teachers' digital reading disposition were examined and it was found that the pre-service teachers' disposition towards digital reading were moderate. Besides, it was found that pre-service teachers considered themselves to be moderately competent and dedication in reading on the internet. The findings showed that digital reading disposition could be explained by pre-service teachers' perceived competence for internet-based reading. Although pre-service teachers' perceptions of difficulty towards internet-based reading were found to be related to digital reading disposition, it was not found to be a significant predictor. In addition, there was no significant relationship between pre-service teachers' digital reading disposition and their dedication and avoidance motivation to internet-based reading. The study concludes with a discussion of the meaning of the findings for educational implications and future research.

DOI: 10.52963/PERR_Biruni_V11.N2.11

To cite this article: Özkan, U. B. (2022). The relationship between digital reading disposition and internet-based reading motivation: A study on pre-service teachers. *Psycho-Educational Research Reviews*, 11(2), 172-183. doi: 10.52963/PERR_Biruni_V11.N2.11

INTRODUCTION

Information and communication technologies (ICT) and especially the internet have tremendous effects on each single part of our lives, how we behave and react. More and more people are using ICT and internet for various purposes. The number of internet users is known to be nearly 3 billion all over the World (Yaghi & Abdullah, 2020). Access to information has increased as there is at least one computer or mobile device in almost all houses (Bruce, 1997; Cuban et. al., 2001; Madden et. al., 2005; Mikulecky & Kirkley, 1998; Yaghi & Abdullah, 2020). Becoming such common, internet and computers have enabled everyone to reach the data they search for quite easily, which has made them to be the most reliable and trusted sources of data (Coiro & Dobler, 2007; Lewis, 2007; McKenna et. al., 1995). As a result, digital documents that can be accessed online and read from a screen have dominated in recent years (Buzetto-More et.al., 2007; Coiro, 2011; Putro & Lee, 2017), replacing printed materials that have been used as a means of intellectual communication and literacy for over five centuries (Rose & Dalton, 2009). This brings digital reading to the fore.

Digital reading “combines reading strategies of books and understanding the features of the Internet, ICT, or digital reading environment” (Chen, 2017, p. 333). Baron (2017) and Tanner (2014) define digital reading as reading on a digital screen while it is described as “reading involving hypermedia technology” by Singer and Alexander (2017, p. 1011). Therefore, digital reading includes various forms such as hypertexts, hyperlinks, hypermedia (Coiro, 2011), printed or digital texts, animations, online tables and diagrams (Chen, 2017). Larson (2010, p. 21) suggested that these various forms “have the potential to unveil an array of new teaching and learning possibilities as traditional and new literacy skills are integrated in meaningful ways”. Guthrie et al. (2004) and Popham (2009), on the other hand, mention that positive disposition is essential in effective learning in this digital age. So, a concept emerges that needs to be considered with digital reading: digital reading disposition (DRD).

The term disposition was defined as “tendency to edit, select, adapt, and respond to the environment in a recurrent, characteristic kind of way” (Carr & Claxton, 2002, p. 13). In Yaghi and Abdullah’s (2020) study, five important dispositions were pointed out as “persistence, flexibility, collaboration, reflection and critical stance” (p. 76). The term which defines how people behave during digital reading is DRD (Yaghi & Abdullah, 2020). According to O’Byrne and McVerry (2009), who consider DRD more broadly, DRD is “attitudes and beliefs that lead to patterns of behavior that promote gains in the acquisition of knowledge” (p. 364). Researchers conducted studies to understand, measure, and explore DRD (Bulut & Karasakaloğlu, 2018; Coiro, 2012; O’Byrne & McVerry, 2009; Putman, 2014; Yaghi & Abdullah, 2020) and found that “reflection, persistence, and collaboration were significant within the development of digital reading disposition” (Putman, 2014, p. 6). In these studies, some of the suggestions to coming research were to analyze the relationships of other cognitive and affective factors with DRD. Although it is inherent in digital reading, one of the factors whose relationship with DRD has not been investigated until now is internet based reading motivation (IBRM).

The concept of IBRM is a result of the ICT and screens that the 21st century has made indispensable in our lives (Güzel & Elkiran, 2021). Reading motivation “can be defined as the extent of his or her intention to read a specific text in a given situation” (Schiefele et. al, 2012, p. 429). However, internet-based reading “may involve other processes of reading motivation and engagement than reading” printed texts (Brandmo & Braten, 2021, p. 34). Thus, it should not be overlooked that motivation has both positive and negative aspects (Braten et. al., 2019). For example, someone who does digital reading may perceive themselves as competent for reading and learning from what they read on the Internet and still perceive the digital texts they read as difficult and complex. Another issue that should not be overlooked is that reading motivation is differently concerned with reading for scholarly purposes and reading for relief (Schiefele et al., 2012). This

distinction is meaningful due to the importance of the internet in accessing information is increasing, and students of different education levels are “increasingly using the Internet for academic purposes” (Brandmo & Bråten, 2021, p. 23). Therefore, IBRM may be a more important factor for DRD.

Although there is no study in the literature on the relationship of IBRM with DRD, some studies have examined the relationship between motivation and general reading (Ahmadi et. al., 2013; Anmarkrud & Braten, 2009; Sun et. al., 2018; Yaghi et. al., 2019). Ahmadi et. al. (2013) reported that “reading motivation could have a positive impact on students’ reading comprehension” (p. 15). Anmarkrud and Braten's (2009) study showed that motivation is important in reading competency of reader. The study of Sun et al. (2018) “reveals that highly motivated students exhibited a relatively serious reading pattern in a multi-tasking learning environment” (p. 209). According to the results of Yaghi et al.'s (2019) study on 170 university students, “students show carelessness toward the impact of motivation on online reading, however, they connected their motivation for online reading with the purpose of reading” (p. 49). Considering the results of previous studies pointing out the relationship between reading motivation and reading, and considering that digital documents are most easily accessible on the internet, it can be inferred that DRD may be related to IBRM.

Based on this background analysis, the current research was designed to obtain empirical evidence aimed at revealing the relationship between DRD and IBRM. Moreover, with the global COVID-19 epidemic, it can be said that the transfer of teaching activities from the traditional pattern designed as face-to-face activities in classrooms to the digital medium has brought DRD of pre-service teachers (PTs) to the fore. This evident change during the pandemic process makes it important to find out the relationship between DRD of PTs and technological advances, especially the internet which enables the fact that “a classroom is no longer the only venue where learning can take place” (Srijamdee & Pholphirul, 2020, p. 2934). The relationship between communication technologies and education becomes more important (Oliver, 2002), especially in the new era as the integration of the digital world and education has accelerated dramatically due to COVID-19. Consequently, teaching and learning is tried to be supported by written digital materials provided over the internet. When the role of the internet in facilitating access to readable materials is considered, finding out the relationship between PTs and DRD increases the importance of the study. Another important contribution of this study to the literature is that it presents a predictive model to show the contribution of IBRM on the DRD of PTs. Moreover, it contributes to filling in an important gap in this area by focusing on the relationships between DRD and IBRM in order to a supporting to efforts that can improve the performance of PTs in distance learning processes. All in all, since there is no study examining the predictions of IBRM on DRD in the literature review, it is thought that conducting a research on this subject will be a source of new research in the literature.

This study aims to examine the relationship between the DRD of PTs and their IBRM. Thus, an attempt was made to seek answers to the following research questions:

- (1) Is there a statistically significant correlation between DRD of PTs and their IBRM?
- (2) Are IBRM of PTs statistically significant predictors of their DRD?

METHOD

In this study, a quantitative research design in relational survey type was chosen. The study was carried out in January-February 2021 via an online learning portal. In the model of the research, there were five variables, one of which is independent (digital reading disposition) and four were dependent (perceived competence, perceived difficulty, dedication, avoidance). Besides determining the relationship between dependent and independent variables; it was also investigated how much the independent variables explain the change in the dependent variable (variance).

POPULATION AND SAMPLING

Target population of the study involves 3300 PTs studying in various academic programs at an education faculty of a state university in the northwest of Turkey in the 2020-2021 academic year. The study was carried out with a sample from the target audience using the convenience sampling method. The main reason for this is that PTs cannot be reached face-to-face due to the COVID-19 pandemic. As a result of the calculations made using Cochran's (1962, p. 56) formulas $n_0=t^2.S^2/d^2$ and $n=n_0/[1+(n_0/N)]$ were used in calculating the sample size for continuous variables; the minimum sample size representing the population unit of 3300 was found to be 344 for the error margin of .05 (d), the standard deviation score of .5 (S), the confidence level of .95 (t = 1.96). It can be said that a total of 401 participants, 309 (77.1%) female and 92 (22.9%) male, from whom the data were collected in this study, provided an adequate sample.

DATA COLLECTION

The data of the current study were gathered using two scales: Digital Reading Disposition Scale (DRDS) designed by (Bulut & Karasakaloğlu, 2018), which aims to determine PTs' disposition towards digital reading as opposed to printed reading material preference; and the Internet Based Reading Motivation and Engagement Scale (IBRMES) developed by Braten et. al. (2019) and adapted into Turkish by Ata & Alpaslan (2019).

DIGITAL READING DISPOSITION SCALE

DRDS developed by Bulut & Karasakaloğlu (2018) was used to determine the DRD of PTs in educational environments. This 5-point Likert type scale (ranging from 1 = totally inappropriate for me to 5 = totally appropriate for me) consists of a total of 12 items. As a result of exploratory factor analysis (EFA) the scale was found to be explaining 57.31% of the total variance. In Bulut & Karasakaloğlu's (2018) study, Cronbach's Alpha internal consistency coefficient was .952 whereas it was found to be .543 for all items in this study. Although there is much debate among researchers about which value is appropriate and acceptable for reliability, it can be said that the Cronbach's Alpha internal consistency coefficient between 0.50 and 0.70 indicates "moderate reliability" (Hinton et. al., 2004, p. 364). Similarly, George & Mallery (2020, p. 244) state "there is no set interpretation as to what is an acceptable alpha value", and values above 0.50 show acceptable reliability.

INTERNET BASED READING MOTIVATION AND ENGAGEMENT SCALE

IBRMES was developed by Braten et al., (2019) and its Turkish version (Ata & Alpaslan, 2019) was used to find out PTs' levels of IBRM and interaction in educational matters. A 10-point Likert-type rating (1= strongly disagree, 10= strongly agree) was used in this scale which consists of 12 items and 4 factors (perceived competence, perceived difficulty, dedication, and avoidance) without any reverse scoring items. The scale explained 64.89% of the total variance in the EFA. Cronbach's Alpha values of the sub-factors of the scale are given in Table 1.

Table 1. Cronbach's alpha values of IBRM and engagement scale sub-factors

<i>Scale</i>	<i>Factor</i>	<i>Cronbach's Alpha</i>
	Perceived competence	.793
Internet Based Reading Motivation and Engagement	Perceived difficulty	.797
	Dedication	.825
	Avoidance	.795

In the original scale, Cronbach's Alpha values were reported as .76 for perceived competence, .79 for perceived difficulty, .76 for dedication, and .83 for avoidance (Braten et al., 2019). In the Turkish adaptation of the scale, Cronbach's Alpha values were found to be .82 for perceived

competence, .84 for perceived difficulty, .86 for dedication, and .83 for avoidance. The results given in Table 1 show that the sub-dimensions of the scale are "highly reliable" (Hinton et al., 2004, p. 364).

DATA ANALYSIS

The data were analyzed using IBM SPSS Statistics 22 program. Before performing statistical analysis, the data set was examined in terms of faulty coding, missing or outlier values. It was seen that there was no missing value in the data set. The skewness and kurtosis values were examined to see whether the data obtained in this study showed normal distribution. Table 2 shows the skewness and kurtosis values.

Table 2. Skewness and kurtosis values of the variables

<i>Variables</i>	<i>Skewness</i>	<i>Kurtosis</i>
Digital reading disposition	.02	.167
Internet-specific reading motivation and engagement	.43	2.00

The skewness and kurtosis values are given in Table 2 range from .02 to 2.00. The studies of Morgan et. al. (2004), George and Mallery (2020), and Tabachnick and Fidell (2013) indicate that the skewness and kurtosis ranges can be between -1 and +1, -2 and +2, and -3 and +3, respectively, to provide the assumption of normal distribution. According to these values, it can be said that the assumption of normal distribution was met in this study. Pearson Product-Moment Correlation Coefficient Analysis (PPMCCA) was used to determine the relationships between variables, and Multiple Linear Regression Analysis (MLRA) was used to examine the predictor variables. Also, to test the assumptions of Regression analysis; the tolerance, variance inflation factor (VIF), and condition indices (CI) and values of the predictor variables in the analysis are shown in Table 3.

Table 3. Tolerance, VIF and CI values of the predictive variables

<i>Variables</i>	<i>Tolerance</i>	<i>VIF</i>
Perceived competence	.743	1.346
Perceived difficulty	.786	1.271
Dedication	.710	1.409
Avoidance	.748	1.336

Durbin-Watson: 2.08

CI: Dimension 1= 1.00, Dimension 2= 3.73, Dimension 3= 6.08, Dimension 4= 9.51, Dimension 5= 12.78

When the values presented in Table 3 are examined, it is clear that the tolerance value of the independent variables is greater than .20, the VIF value is below 10, the Durbin-Watson coefficient is between 1.5-2.5, and the CI value is less than 30 (Petrini et. al., 2012; Robinson & Schumacker, 2009).

FINDINGS

This section includes analyzes for the sub-problems of the research.

RELATIONSHIP BETWEEN DIGITAL READING DISPOSITION AND INTERNET-BASED READING MOTIVATION DIMENSIONS

To find out the relationship between PTs' DRD and the sub-dimensions of IBRM, PPMCCA was conducted and the results are given in Table 4.

Table 4. The arithmetic mean and standard deviation values of variables and correlations between variables

	\bar{X}	S	1	2	3	4	5
Digital Reading Disposition (1)	3.06	.49	1	.20**	-.11*	.05	-.07
Perceived competence (2)	6.40	1.72		1	-.08	.49**	-.20**
Perceived difficulty (3)	3.58	1.74			1	.05	.43**
Dedication (4)	5.30	1.86				1	-.24**
Avoidance (5)	2.46	1.62					1

**p<.01; *p<.05

Table 4 shows that PTs' DRD ($\bar{X} = 3.06$) are at a medium level. In addition, it was found out that PTs had a moderate level of motivation to read internet-based educational texts in the competence ($\bar{X} = 6.40$) and dedication ($\bar{X} = 5.30$) sub-dimensions while they had a low level of motivation in the avoidance ($\bar{X} = 2.46$) and perceived difficulty ($\bar{X} = 3.58$) sub-dimensions. When the standard deviation values were examined, it was seen that the most homogeneous distribution was in DRD (S = .49).

Various correlations were found between PTs' DRD and internet-based reading motivation and engagement sub-dimensions. There was a low level of positive correlation between DRD and perceived competence (r = .20; p <.01). There was a low-level negative relationship between DRD and perceived difficulty (r = -.11; p <.05). No statistically significant relationship was found between DRD and dedication and avoidance.

THE PREDICTION LEVEL OF INTERNET-BASED READING MOTIVATION AND ENGAGEMENT DIMENSIONS OF DIGITAL READING DISPOSITION

The results of MLRA regarding whether the sub-dimensions of PTs' IBRDM are significant predictors of DRD are given in Table 5.

Table 5. The results of MLRA

Predictors	R= .23 F _(4,396) = 5.411		R ² = .05 p= .000		
	Coefficients				
	B	Std. Error	Beta	t	Sig.
Perceived competence	.063	.016	.220	3.879	.000
Perceived difficulty	-.027	.015	-.095	-1.722	.086
Dedication	-.015	.015	-.056	-.964	.336
Avoidance	.001	.017	.005	.087	.931

As shown in Table 5, there was a low level and significant relationship between PTs' internet-based reading motivation and engagement and their DRD (R = .23; R² = .05; F_(4,396) = 5.41; p = .000). These predictive variables explained about 5% of the variance regarding PTs' DRD. When the results regarding the regression coefficients were examined, it was found that perceived competence for internet-based reading (t = 3.88; p <.01) was a significant predictor of PTs' DRD. The perceived difficulty, dedication, and avoidance towards internet-based reading were not significant (p > .05) predictors of PTs' DRD.

DISCUSSION AND CONCLUSION

The present study focused on the relationship between PTs' DRD and IBRM. Even the way we teach, learn or work has significantly changed due to Internet. Parallel to this, our reading and writing habits have also changed (Leu et. al., 2004; San Miguel, 1996). In other words, “the existence and prevalence of technology and the Internet tempt people to alter their ways of reading” (Yaghi & Abdullah, 2020, p. 74). As denoted by Leu et al. (2004), new literacies such as digital reading are going under major changes and literacy and technology such as the internet are highly interconnected. The results of the study provided empirical evidence to support these opinions.

In this research, PTs' DRD were examined and it was found that the PTs' disposition towards digital reading were moderate. A few studies in the literature support this result (Bulut & Karasakaloğlu, 2019; Elkiran, 2021). As a result of the research of Bulut and Karasakaloğlu (2019), it was seen that the DRD of the PTs were at a moderate level. In Elkiran's (2021) study, it was found that the DRD of pre-service Turkish teachers were at a moderate level. One of the reasons why PTs' DRD are moderate may be that digital reading does not have a clear advantage or disadvantage compared to reading on printed materials. While reading long and complex texts from printed materials instead of reading from the screen helps to remember better, the convenience of digital reading with different text editing and search tools (Farinosi et. al., 2016) may have suppressed the PTs' reading disposition towards digital. Besides, that Turkey where the research sample was selected hasn't got the desired potential in terms of owning the necessary equipment for digital reading (Şen & Akdeniz, 2012; Toso et. al., 2015), when it comes to the materials such as course books which have numerous pages, digital materials cause more eye strain and other serious reading problems when compared to the printed ones (Vernon, 2006), students prefer reading in digital media for academic purposes (Keskin et. al., 2016) may also be the reasons for PTs' DRD to remain at a moderate level.

In the study, sub-dimensions of PTs' IBRM (perceived competence, perceived difficulty, dedication, and avoidance) were examined. The results of the research showed that while the perceived competence and dedication levels of the PTs were at a medium level, their motivation in the sub-dimensions of avoidance and perceived difficulty was at a low level. According to this result, PTs consider themselves to be moderately competent in reading from what they read on the internet. However, PTs allocate moderate time, persistence and effort while reading on the internet. They also do not perceive what they read on the internet as difficult or complicated and do not hesitate to read online. These findings were supported by Ata and Alpaslan's (2019) study in which they found out that pre-service teacher' perceived competence and dedication levels were medium, while their motivation in the sub-dimensions of avoidance and perceived difficulty was found to be low. In addition, in the study of Güzel and Elkiran (2021), which examined the motivation of Turkish teacher candidates for internet-based reading, the level of dedication of teacher candidates was moderate, similar to this study. However, unlike the findings of this study, the perceived competence levels of Turkish teacher candidates were high, while the levels of avoidance and difficulty were moderate (Güzel & Elkiran, 2021). In the study carried out by Maden (2018) with PTs, the findings showed that the participants were interested in reading on digital screens and they often understood the content better and quicker. This finding is consistent with those reported by Doty et. al. (2001). Considering the findings of other studies and that the majority of young people use the internet and most of them see the internet as their primary learning tool (Putman, 2014), it can be said that result of the present study is not surprising. However, the fact that self-regulated reading processes and inferential reasoning strategies are necessary for successful internet reading experiences (Coiro & Dobler, 2007) and the complexity of the internet's being large, variable, nonlinear, multimodal, unfiltered and unlimited (Dobler & Eagleton, 2015) may have caused PTs' levels of perceived competence and dedication to remain at a moderate level.

Within the framework of reviewable resources, the present study was the first to examine the relationship between DRD and sub-dimensions of IBRM. The results of the study showed that there was a positive, significant, and low-level correlation between PTs' DRD and perceived competence, which is one of the sub-dimensions of IBRM while its correlation with perceived difficulty was low level and negatively significant. Since the efficiency of performances such as digital reading depends on whether the competencies perceived by individuals are high or low (Senko, 2016), the existence of this relationship can be considered reasonable. In addition, the fact that individuals give importance to the competencies they perceive most and how much they strive to do it when they explain the things they can do may also support this fact (Graham & Taylor, 2016).

Another result reached in this study was that the perceived competencies of PTs, which is one of the sub-dimensions of IBRM, statistically significantly and positively predicted their DRD. It can be said that the results of Ng's (2012) study showing that improving young people's competencies in using technologies such as internet improves their digital literacy support this finding. In this respect, Coiro (2003) denoted that successful readers show persistency, flexibility, patience, creativity and confidence while online reading. These two studies provide sufficient support in discussing why perceived efficacy is a reasonable predictor, however, it should be discussed why the other three sub-dimensions were not statistically significant predictors of DRD. In this regard, the results of the studies conducted by Odabaş et. al. (2019) with university students, Maden (2018) with PTs, and Dağtaş (2013) with teachers can be helpful. The participants of these three studies were also from Turkey, as in the current study. In the study which Odabaş et. al. (2019) conducted to find out whether university students preferred digital text / electronic books or traditional reading environments, 63.7% of the participants stated that reading on printed book and / or paper text is fun and 80.4% stated that they found it more relaxing. In their studies, Dağtaş (2013) and Maden (2018) found that participants mainly preferred to read printed materials. Therefore, university students and teachers in Turkish society do not favor digital reading and internet-based reading anyway. Thus, perceived difficulty, dedication, and avoidance variables for internet-based reading may not be statistically significant predictors for digital reading.

Various implications can be made in the light of the results and discussions of the study. In the present study, it was found that the PTs' disposition towards digital reading and perceived competence and dedication towards internet-based reading were moderate. This result is extremely meaningful for teachers educating schools. Bibby et. al. (2009), Leu et al. (2004), and Liu (2005) assert that reading texts online is regarded as an alternative way of reading in the 1990s but it is being preferred more and more by the younger generations. To catch up with the contemporaries, teachers should learn and use digital texts and communicate on internet. The motto "we learn to read, then we read to learn" evolved into "we learn to read, and then we read to learn online" in today's online information age (Leu et. al., 2015, p. 139). This is what we need to keep in mind when working on pre-service teachers' disposition towards digital reading and some practical inferences can be made from this point of view. It seems necessary to increase their DRD, foster their positive attitudes towards digital reading and help them perceive themselves as more competent in internet-based reading during teacher education. For this, courses can be added to the teacher training curricula, where PTs can learn internet-based software that they can use in their professional life in the future. Moreover, PTs should be given some courses on digital literacy during undergraduate education. It is essential for them to be able to catch up with the latest technology, updating curricula, textbooks and course materials.

The current study found that the perceived competence of PTs for internet-based reading was positively correlated to their DRD, and Margaryan et. al. (2011) revealed that university students' learning attitudes are influenced by the teaching approaches of lecturers. Therefore, if the lecturers design activities to improve PTs' competencies for internet-based reading, they can increase their DRD. For this, lecturers can help PTs to incorporate internet-based reading materials into their learning processes (for example, discussing a digital article in lectures, reviewing an e-book assignment or other digital reading resources).

Revealing the relationship between PTs' motivations for internet-based reading and DRD further emphasizes the importance of focusing on individual differences in teacher training programs. Knowing these relationships can be very useful when designing curricula for education faculties. PTs with different DRD levels may have varied demands and be precise to dissimilar educational methods. For instance, PTs who perceive themselves as competent in internet-based reading may be genuinely enthusiastic about digital reading and inspire PTs with low perception of competence who seem willing to interact with digital reading materials in their lessons. For PTs who do not see themselves competent in Internet-based reading, it may be beneficial to explore and read

subjects that they are interested in, such as reading digital texts about their hobbies. In addition, considering that encouraging and supporting student-centered discussion around books encourages reading (Merga, 2015), organizing similar experiences by lecturers may have a significant role in helping PTs to find, select and read digital reading materials online.

For sure, more research can be done to examine the value and effectiveness of these proposed activities. Determining PTs' DRD during their education and after graduation can provide longitudinal data that will help us understand if pre-service teachers' disposition towards digital reading will change over time. In addition, it seems useful to examine the variables that may be related to PTs' DRD. Future research to be conducted with variables regarding individual differences and heterogeneous pre-service groups can provide the necessary perspective for training teachers with a DRD. As the purpose of reading may highly influence the preference of reading style (Brandmo & Braten, 2021; Schiefele et. al, 2012), further studies may “compare students' motivation and their engagement when reading on the Internet for academic purposes” (Brandmo & Braten, 2021, p. 37) with that for non-academic ones. When the highly growing demand for technology in both education and daily life is taken into account, it is significant to provide all the PTs with all the necessary 21st century skills. Thus, it is recommended that further studies should be carried out in order to show the attitudes and capabilities of PTs in using technology especially in literacy as it is known that the attitudes and tendencies of the teachers towards technology affects its effective use.

An important limitation of this study is that its findings only apply to PTs studying at a university in Turkey. This may threaten the generalizability of the results to larger sampling that better represent the universe. Future research may reveal whether PTs' DRD exist in a larger sample group.

As a result, this study has emphasized that DRD can be explained by PTs' perceived competence for internet-based reading. Although PTs' perceptions of difficulty towards internet-based reading were found to be related to DRD, it was not found to be a significant predictor. In addition, there was no significant relationship between PTs' DRD and their dedication and avoidance motivation to internet-based reading. Further studies can provide new perspectives to understand PTs' DRD, which is increasingly gaining more importance in today's education system.

REFERENCES

- Ahmadi, M. R., Ismail, H. N., & Abdullah, M. K. K. (2013). The relationship between students' reading motivation and reading comprehension. *Journal of Education and Practice*, 4(18), 8-17.
- Anmarkrud, Ø., & Bråten, I. (2009). Motivation for reading comprehension. *Learning and Individual Differences*, 19(2), 252-256. <https://doi.org/10.1016/j.lindif.2008.09.002>
- Ata, R., & Alpaslan, M. M. (2019). Turkish adaptation of internet based reading motivation and engagement scale and an examination with pre-service teachers. *Educational Technology Theory and Practice*, 9(2), 522-538. <https://doi.org/10.17943/etku.557780>
- Baron, N. S. (2017). Reading in a digital age. *Phi Delta Kappan*, 99(2), 15–20. <https://doi.org/10.1177/0031721717734184>
- Bibby, R. W., Russell, S., & Rolheiser, R. (2009). *The emerging millennials: How Canada's newest generation is responding to change & choice*. Project Canada Books.
- Brandmo, C., & Braten, I. (2021). Measuring internet-specific reading motivation and engagement in an academic domain. *Nordic Journal of Literacy Research*, 7(1), 21-44. <https://doi.org/10.23865/njlr.v7.2215>
- Braten, I., Brandmo, C., & Kammerer, Y. (2019). A validation study of the internet-specific epistemic justification inventory with Norwegian preservice teachers. *Journal of Educational Computing Research*, 57(4), 877-900. <https://doi.org/10.1177/0735633118769438>
- Bruce, B. C. (1997). Critical issues literacy technologies: What stance should we take? *Journal of Literacy Research*, 29(2), 289-309. <https://doi.org/10.1080/10862969709547959>
- Bulut, B., & Karasakaloglu, N. (2018). Digital reading disposition scale: A study of validity and reliability. *Universal Journal of Educational Research*, 6(4), 613-618. <https://doi.org/10.13189/ujer.2018.060404>

- Bulut, B., & Karasakaloğlu, N. (2019). Öğretmen adaylarının dijital okuma eğilimleri ile okuma ilgileri arasındaki ilişki. In E. Babaoğlu, Çelik, E. Kırıl & A. Çilek. (Eds.), *Eğitim Araştırmaları [Educational Research]-2019* (pp. 136-147). Eyuder Yayınları.
- Buzzetto-More, N., Guy, R., & Elobaid, M. (2007). Reading in a digital age: E-books are students ready for this learning object? *Interdisciplinary Journal of E-Learning and Learning Objects*, 3, 239–250.
- Carr, M., & Claxton, G. (2002). Tracking the development of learning disposition. *Assessment in Education: Principles, Policy & Practice* 9(1), 9-37. <https://doi.org/10.1080/09695940220119148>
- Chen, S. F. (2017). Modeling the influences of upper-elementary school students' digital reading literacy, socioeconomic factors, and self-regulated learning strategies. *Research in Science & Technological Education*, 35(3), 330–348. <https://doi.org/10.1080/02635143.2017.1314958>
- Cochran, W. G. (1962). *Sampling techniques*. John Wiley & Sons.
- Coiro, J. (2003). Exploring literacy on the internet: Reading comprehension on the internet: Expanding our understanding of reading comprehension to encompass new literacies. *The Reading Teacher*, 56(5), 458-464. <https://doi.org/10.1177/1086296x11421979>
- Coiro, J. (2011). Predicting reading comprehension on the Internet: Contributions of offline reading skills, online reading skills, and prior knowledge. *Journal of Literacy Research*, 43, 352-392. <https://doi.org/10.1177/1086296x11421979>
- Coiro, J. (2012). Understanding disposition toward reading on the internet. *Journal of Adolescent & Adult Literacy*, 55(7), 645–648. <https://doi.org/10.1002/jaal.00077>
- Coiro, J., & Dobler, E. (2007). Exploring the online reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the Internet. *Reading Research Quarterly*, 42(2), 214-257. <https://doi.org/10.1598/RRQ.42.2.2>
- Cuban, L., Kirkpatrick, H., & Peck, C. (2001). High access and low use of technologies in high school classrooms: Explaining an apparent paradox. *American Educational Research Journal*, 38(4), 813-834. <https://doi.org/10.3102/00028312038004813>
- Dağtaş, A. (2013). On-printed page and screen reading preferences of teachers with their views on the use of electronic text in education. *Turkish Studies*, 8(3), 137-161.
- Dobler, E., & Eagleton, M. B. (2015). *Reading the web: Strategies for Internet inquiry*. The Guilford Press.
- Doty, D. E., Popplewell, S. R., & Byers, G. O. (2001). Interactive CD-ROM storybooks and young readers' reading comprehension. *Journal of Research on Computing in Education*, 33(4), 374–384. <https://doi.org/10.1080/08886504.2001.10782322>
- Elkiran, Y. M. (2021). Examining the relationship between pre-service Turkish teachers digital writing attitudes and digital reading tendencies. *International Journal of Progressive Education*, 17(4), 437-450. <https://doi.org/10.29329/ijpe.2021.366.26>
- Farinosi, M., Lim, C., & Roll, J. (2016). Book or screen, pen or keyboard? A cross-cultural sociological analysis of writing and reading habits basing on Germany, Italy and the UK. *Telematics and Informatics*, 33(2), 410-421. <https://doi.org/10.1016/j.tele.2015.09.006>
- George, D., & Mallery, P. (2020). *IBM SPSS statistics 26 step by step: A simple guide and reference* (sixteenth edition). Routledge.
- Graham, S., & Taylor, A. Z. (2016). Attribution theory and motivation in school. In K. R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 11-33). Routledge.
- Guthrie, J. T., Wigfield, A., & Perencevich, K. C. (2004). Scaffolding for motivation and engagement in reading. In J. T. Guthrie, A. Wigfield, & K. C. Perencevich, (Eds.), *Motivating reading comprehension: Concept-oriented reading instruction* (55-86). Lawrence Erlbaum Associates, Inc. <https://doi.org/10.4324/9781410610126>
- Güzel, A., & Elkiran, Y. M. (2021). Türkçe öğretmeni adaylarının internet tabanlı okuma motivasyonu ve etkileşim ile mobil öğrenme tutumları arasındaki ilişkinin incelenmesi. *RumeliDE Dil ve Edebiyat Araştırmaları Dergisi*, 24, 324-341. <https://doi.org/10.29000/rumelide.996583>
- Hinton, P., Brownlow, C., McMurray, I., & Cozens, B. (2004). *SPSS explained*. Routledge.

- Keskin, H. K., Baştuğ, M., & Atmaca, T. (2016). Factors directing students to academic digital reading. *Education and Science, 41*(188), 117-129. <https://doi.org/10.15390/EB.2016.6655>
- Larson, L.C. (2010). Digital readers: The next chapter in e-book reading and response. *The Reading Teacher, 64*(1), 15-22. <https://doi.org/10.1598/RT.64.1.2>
- Leu, D.J., Forzani, E., Timbrell, N., & Maykel, C. (2015). Seeing the forest, not the trees: Essential technologies for literacy in the primary-grade and upper elementary-grade classroom. *The Reading Teacher, 69*(2), 139-145. <https://doi.org/10.1002/trtr.1406>
- Leu, D.J., Kinzer, C.K., Coiro, J., & Cammack, D.W. (2004). Toward a theory of new literacies emerging from the Internet and other information and communication technologies. In R.B. Ruddell & N. Unrau (Eds.), *Theoretical models and processes of reading* (5th ed.) (pp. 1570–1613). International Reading Association.
- Lewis, C. (2007). New literacies. In M. Knobel, & C. Lankshear (Eds.), *A new literacies sampler* (pp. 229-237). Peter Lang Publishing, Inc.
- Liu, Z. (2005). Reading behavior in the digital environment: Changes in reading behavior over the past ten years. *Journal of Documentation, 61*, 700–712. <https://doi.org/10.1108/00220410510632040>
- Madden, A., Ford, N., Miller, D., & Levy, P. (2005). Using the Internet in teaching: The views of practitioners (A survey of the views of secondary school teachers in Sheffield, UK). *British Journal of Educational Technology, 36*(2), 255–280. <https://doi.org/10.1111/j.1467-8535.2005.00456.x>
- Maden, S. (2018). Digital reading habits of pre-service Turkish language teachers. *South African Journal of Education, 38*(2), 1-12. <https://doi.org/10.15700/saje.v38ns2a1641>
- Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? University students' use of digital technologies. *Computers & Education, 56*(2), 429-440. <https://doi.org/10.1016/j.compedu.2010.09.004>
- Maulana, R., Helms-Lorenz, M., & van de Grift, W. (2015). A longitudinal study of induction on the acceleration of growth in teaching quality of beginning teachers through the eyes of their students. *Teaching and Teacher Education, 51*, 225-245. <https://doi.org/10.1016/j.tate.2015.07.003>
- McKenna, M.C., Kear, D.J., & Ellsworth, R.A. (1995). Children's attitudes toward reading: A national survey. *Reading Research Quarterly, 30*(4), 934-956. <https://doi.org/10.2307/748205>
- Merga, M. K. (2015). "She knows what I like": Student-generated best-practice statements for encouraging recreational book reading in adolescents. *Australian Journal of Education, 59*(1), 35–50. <https://doi.org/10.1177/0004944114565115>
- Mikulecky, L., & Kirkley, J. R. (1998). Literacy instruction for the 21st-century workplace. *Peabody Journal of Education, 73*(3-4), 290-316. <https://doi.org/10.1080/0161956X.1998.9681896>
- Morgan, G. A., Leech, N. L., Gloeckner, G. W., & Barrett, K. C. (2004). *SPSS for introductory statistics: Use and interpretation* (2nd ed.). Lawrence Erlbaum Associates.
- Ng, W. (2012). Can we teach digital natives' digital literacy? *Computers & Education, 59*(3), 1065-1078. <https://doi.org/10.1016/j.compedu.2012.04.016>
- O'Byrne, W. I., & McVerry, J. G. (2009). Measuring the disposition of online reading comprehension: A preliminary validation study. In K. M. Leander, D. W. Rowe, D. K. Dickinson, M. K. Hundley, R. T. Jimenez, & V. J. Risko (Eds.), *National reading conference yearbook Vol. 58* (pp. 362-375). National Reading Conference, Inc.
- Odabaş, H., Odabaş Z. Y., & Binici, K. (2019). The effects of digital information sources and media on the reading behavior of university students. *Milli Eğitim, 49*(227), 89-116.
- Oliver, R. (2002, September). *The role of ICT in higher education for the 21st century: ICT as a change agent for education*. Paper presented at the International Conference on Higher Education for the 21st Century, Miri, Sarawak, Malaysia: Curtin University of Technology. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.83.9509&rep=rep1&type=pdf>
- Petrini, J., Dias, R. A. P., Pertile, S. F. N., Eler, J. P., Ferraz, J. B. S., & Mourão, G. B. (2012). Degree of multicollinearity and variables involved in linear dependence in additive-dominant models. *Pesquisa Agropecuária Brasileira, 47*(12), 1743-1750. <https://doi.org/10.1590/S0100-204X2012001200010>
- Popham, W. J. (2009). Assessment literacy for teachers: Faddish or fundamental? *Theory into practice, 48*(1), 4-11. <https://doi.org/10.1080/00405840802577536>

- Putman, S. M. (2014). Exploring disposition toward online reading: Analyzing the survey of online reading attitudes and behaviors. *Reading Psychology, 35*(1), 1-31. <https://doi.org/10.1080/02702711.2012.664250>
- Putro, N. H. P. S., & Lee, J. (2017). Reading interest in a digital age. *Reading Psychology, 38*(8), 778–807. <https://doi.org/10.1080/02702711.2017.1341966>
- Robinson, C., & Schumacker, R.E. (2009). Interaction effects: centering, variance inflation factor, and interpretation issues. *Multiple Linear Regression Viewpoints, 35*(1), 6-11.
- Rose, D., & Dalton, B. (2009). Learning to Read in the Digital Age. *Mind, Brain, and Education, 3*(2), 74-83. <https://doi.org/10.1111/j.1751-228x.2009.01057.x>
- San Miguel, C. (1996). Cultural influences on academic literacy: A case study. *Open Letter: Australian Journal for Adult Literacy Research and Practice, 6*(2), 31–43.
- Schiefele, U., Schaffner, E., Möller, J., & Wigfield, A. (2012). Dimensions of reading motivation and their relation to reading behavior and competence. *Reading Research Quarterly, 47*, 427-772. <https://doi.org/10.1002/RRQ.030>
- Senko, C. (2016). Achievement goal theory. In K.R. Wentzel & A. Wigfield (Eds.), *Handbook of motivation at school* (pp. 75-95). Routledge.
- Singer, L. M., & Alexander, P. A. (2017). Reading on paper and digitally: What the past decades of empirical research reveal. *Review of Educational Research, 87*(6), 1007-1041. <https://doi.org/10.3102/0034654317722961>
- Srijamdee, K., & Pholphirul, P. (2020). Does ICT familiarity always help promote educational outcomes? Empirical evidence from PISA-Thailand. *Education and Information Technologies, 25*, 2933-2970. <https://doi.org/10.1007/s10639-019-10089-z>
- Sun, J. C. Y., Lin, C. T., & Chou, C. (2018). Applying learning analytics to explore the effects of motivation on online students' reading behavioral patterns. *International Review of Research in Open and Distributed Learning, 19*(2), 209-227. <https://doi.org/10.19173/irrodl.v19i2.2853>
- Şen, A., & Akdeniz, S. (2012). Coping with digital gap: OECD trends and Turkey. *The Journal of Knowledge Economy & Knowledge Management, 7*(1), 53-75.
- Tabachnick, B.G., & Fidell, L.S. (2013). *Using multivariate statistics* (Sixth Edition). Pearson.
- Tanner, M.J. (2014). Digital vs. print: Reading comprehension and the future of the book. *iSchool Student Research Journal, 4*(2), 6-13. <https://doi.org/10.31979/2575-2499.040206>
- Toso, S., Atli, Ş. M., & Mardikyan, S. (2015). Digital divide among the regions of Turkey. *The Journal of Knowledge Economy & Knowledge Management, 10*(1), 41-49.
- Vernon, R. F. (2006). Teaching notes: Paper or pixels? An inquiry into how students adapt to online textbooks. *Journal of Social Work Education, 42*(2), 417-427. <https://doi.org/10.5175/JSWE.2006.200404104>
- Yaghi, E., T., & Abdullah, A. (2020). Understanding online reading disposition from the perspective of Saudi EFL learners. *International Journal of Interactive Mobile Technologies (IJIM), 14*(07), 73-87. <https://doi.org/10.3991/ijim.v14i07.11062>
- Yaghi, E. T., Abdullah, A., & Mustafa, Z. (2019). Investigation on motivation of online reading: A case study preparatory year students. *Turkish Online Journal of Educational Technology-TOJET, 18*(2), 40-51.

AUTHOR CONTRIBUTION

The author designed and directed the research, developed the theoretical framework, carried out the implementation, performed the calculations, analysed the data, wrote the manuscript.