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The Effect of Digital Texts on Primary Students' Comprehension, Fluency, and Attitude*

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ABSTRACT

Purpose: In today's world, the rapid spread of technology affects educational life. It has become common place in many countries to read digital texts on tablet computers, preferred for their portability, and long charging times; projects are done to improve educational quality in many countries. However, research is limited about how reading digital texts affects reading skills of primary students. The aim of this study is to investigate the effect of digital text readings on reading comprehension, reading fluency, and reading attitude of 4th grade students.

Research Methods: The mixed method, in which quantitative and qualitative research methods are used together, has been employed in the research. The reading levels of 75 students attending 4th grade in four primary schools were determined by pre-test, and the 30 students with the lowest scores were selected. An experimental and a control group were formed by randomly assigning the students to one of the two groups. Each group contained 15 students. **Findings:** The quantitative findings showed that the use of digital texts had influence on improving fluency and reducing reading mistakes, while it did not affect students' reading attitudes and its effect on comprehension lasted a short time. According to qualitative findings, students were eager and excited. **Implication for Research and Practice:** If educational environments are inevitably influenced by technological devices, it becomes crucial to use technological devices in a planned and appropriate manner. We suggest that teachers also apply reading activities with digital texts to improve the reading achievement of primary students.

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Introduction

New technologies are increasingly prevalent in all parts of life throughout the world. Mobile devices in particular are used for learning purposes both in and out of school, and they have been quite beneficial (Wagner, Castillo, Murphy, Crofton, & Zahra, 2014). Tablet computers especially have a significant role in increasing the effectiveness and efficiency of educational activities (Gungoren, Bektas, Ozturk & Horzum, 2014). In this regard, education and the use of technology in education have been two concepts that are not considered separately from each other (McCannon & Crews, 2000; Komis, Ergazakia & Zogzaa, 2007). Using technology has brought many benefits to educational environments, such as improving students' critical thinking (Jonassen, 1999), making their preferred learning models more effective (Quintina & Donovan, 2013), and removing the limitation of only written words and images in traditional texts (Larson, 2010). These advantages should be made available to students.

Students in advanced societies are interacting with information and communication technologies. While technology and the internet have continued to change the learning and development of students, educators can use various materials in reading education, from digital texts to the internets. (Thoermer & Williams, 2012). Students are increasingly taking advantage of the technological materials in learning to read and write (Walsh & Simpson, 2013), both outside of school (Jahson, Adams & Cummins, 2012) and within the classroom (Akbar, Taqi, Dashti & Sadeq, 2015). If students have a choice, they prefer to do these activities on the internet or on the phone instead of listening to the teacher or reading the written materials in the classroom (Tolani, McCormac & Zimmermann, 2009). In this regard, technology is becoming an indispensable part of education.

As mentioned above, researches support this situation. When the related studies were examined, Leu, O'Byrne, Zawilinski, McVerry and Everett-Cacopardo (2009) found that students improved their reading skills if they were constantly using web-based literacy activities; Sackstein, Spark and Jenkins (2015) ascertained that most of the participants read faster with the iPad as a result of their work and VanAken (2014) also found that reading e-books or printed texts influenced reading attitudes and reading level, but not reading skills. In the lights of these findings, it is clear that technology does not only make it possible to reach out to the rest of the world, but has become necessary as a tool in education and training (Luke, 2012). Furthermore, motivation and reading fluency of learners are improving in educational environments where digital texts are used (Thoermer & Williams, 2012). It can be seen that technological tools positively affect reading skills.

When we also review the relevant literature in our country, we see that no research reveals the effect of digital texts on reading fluency, reading comprehension and reading attitudes of elementary school students. In this regard, A time when reading comprehension skills are so important for students, it is thought that determining level of reading comprehension skills and reading fluency skills of students who regularly perform reading activities on tablet computers will contribute to the field.

The main purpose of the study is to answer the question "What is the effect of digital texts on the reading comprehension, reading fluency and reading attitude of 4th grade primary school students?" In accordance with this purpose, this study aims to answer the following research questions:

1. Is there a significant difference between reading comprehension scores of the experimental group of students using digital texts and the control group students using printed texts?
2. Is there a significant difference between fluent reading skills scores of the experimental group of students using digital texts and the control group of students using the printed texts?
3. Is there a significant difference between the reading attitude scale scores of the experimental group students using digital texts and the control group students using the printed texts?
4. Is there a significant difference in correcting reading errors between the experimental group of students using digital texts and the control group of students using printed texts?
5. What are the opinions of students in the experimental group on using digital texts in the reading process?
    - The situation of facilitating reading and comprehension,
    - The situation of liking and resuming reading,
    - The situation of facilitating / complicating reading process.

Method

Research Design

This research uses the convergent parallel mixed method, in which quantitative and qualitative research methods are used together. Mixed methods contribute greatly to the researcher's ability to minimize the bias that can arise from the nature of the researcher or from the nature of the research in the research process. Furthermore, diversifying the data sources in the study allows the results to be more valid (Yildirim, 2010). The mixed method involves collecting and analyzing qualitative and quantitative data together during the research process (Creswell, 2003). The reason for choosing the mixed method is to make the results more understandable by supporting the quantitative data with qualitative data.

Research Sample

The study was conducted with seventy five-4th grade students, who studied in four different elementary schools selected among the eight primary schools and who were in the same socio-economic status in the Kaman county center of Kirsehir province in the fall semester of the 2016-2017 academic year. The reason for choosing these schools

includes the appropriateness of the physical possibilities of the schools. Moreover, student achievements in these schools are lower than in other schools in the county.

Fluent reading scores were determined of all 75 students who regularly attended the 4th grade in the designated schools. The texts were selected from the Turkish lesson theme section on the "Morpa Campus" education site, which was also used during the study period when fluent reading scores were determined. Media scale and vocalizing scale scores were determined with the selected text "Icimizdeki Guzellikler", and the comprehension scores were determined with the selected text "Ah Su Gorgu Kurallari". These scores are also pretest scores of the study group. As a result of the scanning, the 75 students' fluent reading scores were ranked from the highest to the lowest, and the 30 students with the lowest scores were selected for the study. The student with code Y17 was excluded from the study, because the fluent reading score (110) of the student was too low and the reading was too slow; and the next lowest student was included in the study instead of this student. The names of these selected students were written down and put into a bag and 15 students were assigned to the experimental group and 15 students to the control group by drawing names from the bag.

Table 1

Distribution of Students Participating in the Survey According to Schools

Schools	Students being scanned		Participants	
	f	%	f	%
C. Primary School	25	33.3	10	33.3
G. Primary School	20	26.6	8	13.3
V. Primary School	13	17.3	2	6 .6
Y. Primary School	17	22.6	9	30
Total	75	100	30	100

Research Instrument and Procedure

The study used, Error Analysis Inventory, Reading Comprehension Scale and Reading Attitude Scale of the convergent mixed model to obtain quantitative data. The Semi-structured Student Interview Form was used to collect qualitative data. The names of the schools in which the survey conducted were coded with letters. For the four schools; - School-C, School-G, School-Y, and School-V- codes were used. All the schools have full-time schooling, and the course starts at 08.30 and ends at 14.30. There is one hour break for lunch from 12.00 and 13.00. The school library in School-C on Monday, the teacher's room in School-G on Tuesday, a vacant class not used in School-Y on Wednesday and the school library in School-V on Thursday were used with the study group for 14 weeks. The work was carried out at noon or during the appropriate class hours. The research was carried out by the researcher in the fall semester of the 2016-2017 academic year. Table 2 presents the number of experimental and control group students according to the schools.

Table 2

Distribution of Students by Schools

Groups	Schools			
	School-C	School-G	School -Y	School-V
Experimental Group	4	4	5	2
Control Group	6	4	5	-
Total	10	8	10	2

Table 2 shows the distribution of experimental and control group students across the schools. It is seen that School-C and School-Y had the highest number of participating students, whereas school-V had the minimum number of participants in the study. While there are no control group students in School-V, this school has at least experimental group students.

Before practice, the class teachers were given detailed information about the study and teachers were reminded that any reading activity should not be done with the students. The students of the experimental and control group were kept on their education within the curriculum framework. Digital texts were selected from three types of Turkish lesson themes, including storytelling, informative and poetic texts from Morpa Campus education site. Experimental group students read these digital texts. A tablet with a 9.7 inch screen was selected. In this way, students could have the opportunity to read on a wide screen. The control group students read the same texts in print. Experimental and control group pupils could access the texts used in the study with Morpa Campus membership; however, this membership has a subscription fee, therefore none of the students have a membership. Teachers can use this site free of charge with teacher login. Teachers were asked to not use the texts in the classroom during the course and the teachers complied with request.

In the application process, the experimental and control group students read 14 texts, one text every week. The title of these reading texts were "Ataturk'un Insan Sevgisi", "Cay Agaci", "Cocuklar Buyudugu Zaman", "Evliya Celebi", "Fiyonk Makarna", "Gelin Geldi Golu", "Hasta", "Ilk Hava Sehidimiz", "Karli Yollarda", "Kuslar ve Yemek Arkadaslari", "Kutuphanedeki Kedicik", "Mustafa'nin Dogusu", "Mutlu Adam" and "Okula Donus".

The texts used for the measurements in the evaluation process are as follows. Texts read for the pre-test were "Icimizdeki Guzellikler" for vocalizing and, "Ah Su Gorgu Kuralları" for comprehension questions; texts read for the mid-test were "Atatürk ve Koylu" for vocalizing and "Durak Usta" for comprehension questions; texts read for the post-test were "Bebek Takimi" for vocalizing and "Mustafa Kemal'in Anadolu Yolculugu" for comprehension questions. The audio recorder was used and the students were recorded while they read the texts. The students were asked 3 non-text questions and 3 in-text questions after they had read the comprehension texts. In order to collect the data in the study, the readings of the students were recorded by voice recorder. Voice recordings of the participants were listened to by the investigator and processed into the wrong analysis inventory.

In the study, the "False Analysis Inventory" adapted from Ekwall and Shanker (1988) by Akyol (2008: 237) was used to determine the level of comprehension and reading fluency. Scale consists of environment, vocalizing and question scale. The scales are scored within themselves, and the scores of the three scales are summed up as fluent reading scores.

In the determination process of reading attitudes, the "Adolescent Reading Attitude Scale", which was developed by McKenna, Conradi, Lawrence, Jang and Meyer (2012) and adapted into Turkish by Bastug and Keskin (2013) was used. The reading attitude scale consists of 7 items and with a 6-point Likert type measuring instrument. The answers range from 'very good' to 'very poor' and are scored by choosing one of 6 values. Number of errors made during reading were indicated with Error Ratio = Error Number Mean / (Number of words × Average of Reading Time) formula.

Data Analysis

The Mann Whitney U-Test was used to analyze the pre-test and post-test scores of the students in the experimental and control groups. The Wilcoxon Signs Rank test was used when the experimental group and the control group students were evaluated within themselves. The significance level in the comparison was taken as 05. Descriptive analysis was used while analyzing the qualitative data obtained as a result of the research. The data obtained according to this approach are summarized and interpreted below.

Results

Quantitative data related to pretest, mid-test, and post-test scores of the experimental and control group students and qualitative data and interpretations are given below.

Table 3

Comparison of Reading Comprehension, Reading Fluency and Reading Attitude Pre-test Scores of the Students in the Experimental and Control Group

	Groups	n	Mean Rank	Total Rank	U	*p*
Reading Comprehension	Experimental	15	16.80	252.00	93.00	.406
	Control	15	14.20	213.00		
Reading Fluency	Experimental	15	17.60	264.00	81.00	.190
	Control	15	13.40	201.00		
Reading Attitude	Experimental	15	15.67	235.00	110.00	.917
	Control	15	15.33	230.00		

p>.05

The results of the Mann Whitney U-Test on reading comprehension, fluent reading and reading attitude pre-test scores of the participants according to the experimental and

control groups are given in Table 3. The analysis results show that reading comprehension, fluent reading, and reading attitudes pre-test scores do not differ significantly between the experimental and control groups. According to the results, reading comprehension is (U = 93.00, p>.05), fluent reading is (U = 81.00, p>.05), and reading attitude is (U = 93.00, p>.05). This finding shows that experimental and control groups' reading comprehension, fluent reading, and reading attitude pre-test scores were equal.

Table 4

Comparison of Reading Comprehension and Reading Fluency Mid-test Scores of the Students in the Experimental and Control Groups

	Groups	n	Mean Rank	Total Rank	U	p
Reading Comprehension	Experimental	15	19.17	287.50	57.500	.019
	Control	15	11.83	177.50		
Reading Fluency	Experimental	15	18.23	273.50	71.500	.088
	Control	15	12.77	191.50		

p>.05

The results of the Mann Whitney U-Test on reading comprehension, fluent reading, and reading attitude mid-test scores of the participants according to the experimental and control groups are given in Table 4. The results of the analysis show a significant difference in reading comprehension mid-test scores (U = 57.500, p <.05) while the reading fluency mid-test scores (U = 71.500, p>.05) did not differ significantly between the experimental and control groups. According to these results, it can be said that reading the digital texts has no significant effect on the fluent reading of experimental group students, while it positively affects reading comprehension.

Table 5

Comparison of Reading Comprehension, Reading Fluency and Reading Attitude Post-test Scores of the Students in the Experimental and Control Groups

	Groups	n	Mean Rank	Total Rank	U	p
Reading Comprehension	Experimental	15	18.03	270.50	74.500	.107
	Control	15	12.97	194.50		
Reading Fluency	Experimental	15	18.70	280.50	64.500	.046
	Control	15	12.30	184.50		
Reading Attitude	Experimental	15	16.30	244.50	100.500	.618
	Control	15	14.70	220.50		

p>.05

The results of the Mann Whitney U-Test on reading comprehension, fluent reading, and reading attitude post-test scores of the participants according to the experimental and control group are given in Table 5. Analysis results indicate that the reading fluency scores differ significantly while the reading comprehension and reading attitude scores of the post-test do not change significantly between the experimental and control groups. According to the results, reading comprehension is

(U = 74.500, p>.05), reading fluency is (U = 64.500, p<.05), and reading attitude is (U = 100.500, p>.05). This finding shows that digital reading has a significant effect on reading fluency, while it has no significant effect on the reading comprehension or reading attitude of the experimental group. In other words, it can be said that reading digital texts has an impact on reading, but it does not influence reading comprehension or reading attitude.

Table 6

Experimental Group Students' Reading Comprehension Scores Wilcoxon Signed Ranks Test Results

		n	Mean Rank	Sum of Rank	z	*p*
Pre-Test Mid-Test	Negative Rank	2	3.50	7.00	-2.103	.035
	Positive Rank	8	6.00	48.00		
	Equal	5				
Mid-Test Post-Test	Negative Rank	3	5.33	16.00	-1.181	.238
	Positive Rank	7	5.57	39.00		
	Equal	5				
Pre-Test Post-Test	Negative Rank	0	.00	.00	-3.076	.002
	Positive Rank	12	6.50	78.00		
	Equal	3				

p>.05

Table 6 shows the results of the Wilcoxon sign test, which indicates whether there is a significant difference between pre-test, mid-test and post-test scores of the experimental group students' reading comprehension. The results of the analysis show that a significant difference between the pre-test and mid-test scores of the students in the experimental group (z = -2.103, p<.05); there is also a significant difference between pre-test and post-test (z = -3.076, p<.05). There is no significant difference between mid-test and post-test (z = -1.181, p>.05). These findings show that the digital text reading activity applied to the students improves their reading comprehension. It can be said that the longer the activity lasts, the lower the overall effect of reading digital text on the students' reading comprehension.

Table 7

Experimental Group Students' Reading Comprehension Scores Wilcoxon Signed Ranks Test Results

		n	Mean Rank	Sum of Rank	z	*p*
Pretest-Midtest	Negative Rank	2	6.00	12.00	-1.587	.112
	Positive Rank	8	5.38	43.00		
	Equal	5				
Midtest Posttest	Negative Rank	1	10.00	10.00	-2.284	.022
	Positive Rank	11	6.18	68.00		
	Equal	3				
Pretest-Posttest	Negative Rank	2	4.75	9.50	-2.875	.004
	Positive Rank	13	8.50	110.50		
	Equal	0				

p>.05

Table 7 indicates the results of the Wilcoxon sign test, which reveal whether pre- test, mid-test, and post-test scores of the control group students differed significantly in their comprehension. The results of the analysis show no significant difference (z = -1.587, p>.05) between the pre-test and the mid-test scores of the control group students participating in the study and, but a significant difference between the mid-test and post-test (z=-2.284, p<.05), and a significant difference between pre-test and post-test (z=-2.875, p>.05). These findings show that the activity of reading printed text, which was applied to the control group, has a significant effect on reading comprehension skills when the process is extended, while this activity has not positive effect in the short term.

Table 8

Experimental Group Students' Reading Fluency Scores Wilcoxon Signed Ranks Test Results

		n	Mean Rank	Sum of Rank	z	*p*
Pretest-Midtest	Negative Rank	2	5.50	11.00	-2.784	.005
	Positive Rank	13	8.38	109.00		
	Equal	0				
Midtest Posttest	Negative Rank	3	5.33	16.00	-2.503	.012
	Positive Rank	12	8.67	104.00		
	Equal	0				
Pretest-Posttest	Negative Rank	0	.00	.00	-3.415	.001
	Positive Rank	15	8.00	120.00		
	Equal	0				

p>.05

The results of the Wilcoxon Signs test in Table 8 show whether there is a significant difference between pre-test, mid-test, and post-test reading scores of the experimental group students. The results of the analysis show a significant difference between pre-test and mid-test scores (z = -2.784, p <.05), mid-test and post-test scores (z = -2.503, p<.05), and pretest and post test scores (z = -3.415, p < 05) of experimental group students. If these findings are taken into consideration, it can be said that the activity of reading digital text, which was applied to the experimental group, has an important effect on improving students' reading fluency skills.

Table 9

Control Group Students' Reading Fluency Scores Wilcoxon Signed Ranks Test Results

		n	Mean Rank	Sum of Rank	z	*p*
Pretest-Midtest	Negative Rank	3	7.17	21.50	-2.189	.029
	Positive Rank	12	8.21	98.50		
	Equal	0				
Midtest Posttest	Negative Rank	3	5.17	15.50	-2.530	.011
	Positive Rank	12	8.71	104.50		
	Equal	0				
Pretest-Posttest	Negative Rank	1	1.00	1.00	-3.352	.001
	Positive Rank	14	8.50	119.00		
	Equal	0				

p>.05

The results of the Wilcoxon Signs test shown in Table 9 indicate whether there is a significant difference between pre-test, mid-test and post-test reading scores of the control group students. The results of the analysis reveal a significant difference between pre-test and mid-test scores (z = -2.189, p <.05), mid-test and post-test scores (z=-2.530, p<.05), and pre-test and post-test scores (z=-3.352, p<.05) of control group students. When these findings are taken into consideration, it can be said that the activity of reading printed text, which was applied to the control group, has an improving effect on the reading fluency skills of the students.

Table 10

Experimental Group Students' Reading Attitude Scores Wilcoxon Signed Ranks Test Results

		n	Mean Rank	Sum of Rank	z	*p*
Pretest-Posttest	Negative Rank	9	5.39	48.50	-.655	.513
	Positive Rank	6	11.92	71.50		
	Equal	0				

p>.05

The results of the Wilcoxon Signs test shown in Table 10 reveal whether there is a significant difference between experimental group students' reading attitude scores obtained before and after application. The results of the analysis show no significant difference between the pre-test and post-test scores (z = -655, p>.05) of the experimental group students. It can be thus observed that the digital text reading activity did not change students' reading attitudes in these findings.

Table 11

Control Group Students' Reading Attitude Scores Wilcoxon Signed Ranks Test Results

		n	Mean Rank	Sum of Rank	z	*p*
Pretest-Posttest	Negative Rank	7	5.50	38.50	-.039	.969
	Positive Rank	5	7.90	39.50		
	Equal	3				

p>.05

Wilcoxon signed rank test results are given in Table 11, indicating whether there is a significant difference between pre-test and post-test reading attitude scores of control group students. The results of the analysis show no significant difference between the pre-test and post-test scores (z = -039, p>.05) of the control group students. It can be understood that the printed text-reading activity does not change the reading attitudes of the students, according to these findings.

Table 12

Average Results of Experimental and Control Group Students' Reading Errors

	Experimental Group			Control Group		
	Pre-test	Mid-test	Post-test	Pre-test	Mid-test	Post-test
Number of Word	196	238	216	196	238	216
Average Reading Time	3.0	2.98	2.50	3.89	3.67	3.23
Average Number of Error	20.2	14.2	10.9	25.3	25.4	18.0
Error Rate	0.0343	0.0200	0.0201	0.0331	0.0290	0.0258

When Table 12 is examined, it can be seen that error rates are determined by taking the average of reading errors in the texts, which are found in the pre-test, mid-test, and post-test measurements of the experimental and control group students. It can be seen that the pre-test error averages of the experimental group are close to the averages of the control group. In the implementation process, it can be seen that the error rates of the experimental group decreased significantly as compared to the control group. In other words, reading digital text is more effective than reading printed text in reducing the number of words read incorrectly.

Opinions of the Experimental Group Students on Using Digital Texts in the Reading Process

The opinions of the experimental group students were taken in accordance with the fifth sub problem, expressed as "What are the opinions of students in the experimental group on using digital texts in the reading process?". Thus, quantitative data collected during the implementation process can be supported by qualitative data. In this context, the following questions were answered in interviews with the experimental group students.

- Facilitating reading and comprehension,
- Liking and resuming reading,
- Facilitating and enforcing the reading process.

Questions were asked to the students (n = 15) in the experimental group, in order to get their views on the application. When asked "How do you like the idea of reading digital text on a tablet?" before the activity, the students (n=12) said that they would be excited, pleased, well and happy. Student C16, G10, and C23 expressed their thoughts by saying, "I like it a little, I did not like it once", "Tablet is not good, book is better", and "I like to read the book."

When the question "How was it to read digital texts on the tablet?" was asked to the students (n = 12) after the application, they said it was good, they liked it, it was fun and it was nice to read. C16 said that "I had read on a small screen tablet before and did not like it very much but now I like to read and read comfortably because the screen was large". G10 expressed that his idea had not changed and that reading printed text was better than tablet, and C23 said that he liked it and his negative idea had changed.

When the students were asked, "Let's say you will read a story; you have a tablet and a story book on your table, and both of them have the story you will read. Which one do you prefer to read? Why?", students (n = 10) said they would choose the tablet because it was fun and the pictures were more colorful, students (n = 2) expressed that they would choose both the paper and the tablet because both of them were nice, and students (n = 3) said that they would prefer paper because they would read more easily.

When asked that "Is there a physical fatigue such as eye pain, headache, back pain during reading?", student (n=12) expressed that, in general, the high color made it easier for them to read as opposed to giving them eye pain. G10 said that electronic devices hurt his eyes and he had headache when he (n=12) looked at the screen too much; V4 said that the screen strained his eyes a little, G7 expressed that he had a little eye pain.

When asked "Does reading digital texts through the tablet contribute to your comprehension of the text?", students (n = 10) said they remembered more easily when they read with the tablet, while students (n = 5) explained that there was no difference or if they read on paper that, they would understand better.

When asked "Is there any difficulty in reading with the tablet?, If so, what is it?", students (n=13) explained that, in general, it was easy and there was no difficulty. Y8 and C19 students said that they could not complete the reading process if the tablet battery was drained.

The experimental group students (n = 15) generally explained that they liked to read digital texts on tablets, that they found it entertaining and that it contributed to their comprehension of the texts. The period of application was limited to 14 weeks. During this time, no fuss was observed in the students. On the contrary, they said they waited enthusiastically for their weekly reading activity. It was observed that the reason of students' desire to not finish the reading hours was reading a different text on a different material, and this situation increased their desire to read.

Discussion and Conclusion

In this study, a significant difference was seen between the group reading digital text and the group reading printed text in 4th grade students. When the quantitative dimension of the research results is examined, it can be seen that the reading activities with digital texts developed fluent reading skills; the students' reading comprehension was positively influenced by the intermittent measurement results but the effect of the

application decreased with the prolonged application time. The activity had no significant effect on reading attitude, and the number of reading mistakes made by students decreased. As for the data related to the qualitative dimension of the study, the students generally stated that reading digital text on tablet was a positive experience, and that they read fondly.

These results are also supported by related studies. Although only few studies investigate the effect of digital texts on fluent reading skills, Akbar et al., (2015) conducted a study in which they investigated the effect of reading digital text on reading fluency. They found that effect of reading digital text on reading comprehension and reading attitudes was negative while it increased students' reading fluency. Schneps, Thomson, Sonnert, and Pomplun (2013) compared reading on printed material with reading on electronic devices in terms of levels of reading fluency and reading comprehension of students who had reading disabilities. According to the research results, reading on the device significantly influenced reading fluency and comprehension, although not for all of the group just a large part. In his study, Reichenberg (2014) examined the influence of second-grade students' reading on a tablet computer on reading comprehension. At the end of the study, no significant difference was found between the comprehension scores of the students in the experimental group and the control group. However, the test scores of the experimental group were higher than those of the control group.

Although our study has shown that reading on a tablet does not have a significant effect on reading attitude, studies are available in which this influence was indicated. Williams (2010) investigated the influence of tablet computer use on reading comprehension and attitudes towards the lesson. The students in the experimental group were applied a reading program using a tablet computer, and at the end of the study, a decrease was found in the students' reading comprehension tests scores and an increase was found in the attitudes towards the lessons.

Students' reading digital texts on tablets is a situation that students willingly encounter in their daily life or in our education system. Young age groups in particular seem to enjoy reading. It is also possible to see that tablet computers and digital texts have different effects on students. In his work with second grade students, Larson (2010) found that using digital reading devices developed new literacy practices and increased interaction between readers and reading. In addition, electronic devices and their features make it necessary to move these reading texts by hand. Larson has provided a distinctive contribution to the field by stating that this situation has increase the interaction between the reader and the reading material.

This study differs from other research in that it reveals the influence of digital texts on reading fluency skills. The lack of such studies in the related literature makes this study important. Even though technological products are used in the education system in our country, it can still be not used at the desired level in educational environments. One of the most important reasons for this situation is the lack of software programs suitable for our education system. It is possible to enrich the educational environment

by using facilities provided by the technology in a planned way, where these problems can be solved.

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Dijital Metinlerin İlkokul Öğrencilerinin Okuduğunu Anlamasına, Akıcı Okumalarına ve Tutumuna Etkisi

Atıf:

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Özet

Problem Durumu: Eğitim öğretim denilince ilk akla gelen kavramlardan birisi ve belki de en önemlisi okumadır. Okuma becerisi ile ilgili çocuklar çok erken yaşlarda tanışmakta ve okuma işi ilgilerini çekmektedir. Günümüzde çocuklar okul çağına gelmeden okuma ve yazma becerilerini kazanabilmektedirler. Bunun en önemli sebebi ailelerin ilgisi ve çevre uyarıcıların fazlalığıdır. Okuma becerisini kazanan çocuklar ileriki yıllarda da bu beceriyi kullanmakta ve sürekli geliştirme durumunda kalmaktadır. Günümüzde bilgiye ulaşmanın çok farklı yöntemleri bulunmaktadır. Bu yöntemlerin başında ise teknoloji kullanımı gelmektedir. Kendini sürekli yenileyen teknoloji, çağın gereklerine hizmet etmek için en kullanışlı yol haline gelmiştir. Teknolojideki bu durum eğitim öğretim veren okullarımıza da yansımış ve her kademede kullanılmaya başlanmıştır. Öğrenciler ve öğretmenler gerek okul içerisinde gerekse okul dışında öğretme ve öğrenme etkinliklerini daha hızlı ve kalıcı hale getirmek için teknolojiyi kullanmaktadırlar. Bu bağlamda gelişmekte olan yeni okuryazarlığı faydalı ve etkili kullanmak için bazı becerilerin toplumun bireylerinde olması gerekmektedir. Kuşkusuz burada ki en büyük pay teknolojinin olacaktır. Günümüzde bilgisayarın bile artık demode olduğu, yerini dokunmatik tablet bilgisayarların ve akıllı cep telefonların aldığı bir süreçten geçilmektedir. İnternet kullanımının okul öncesi dönemlerde başladığı düşünüldüğünde teknolojinin getirdiği yenilikler hayatımıza çok erken yaşlarda girmeye başlamaktadır. Ülkemizde bu hızlı değişim karşısında farklı projeler geliştirmekte ve uygulamaktadır. Bu projeler arasında en kapsamlı olan FATİH (Fırsatlar Artırma ve Teknolojiyi İyileştirme Hareketi) projesi dikkat çekmektedir. Bu proje ile ilkokul, ortaokul ve lise öğrencilerinin tamamına kademeli olarak tablet dağıtımı gerçekleştirilecektir. Sınıflardan akıllı tahta ile birlikte de çalışabilecek olan bu tabletler, derslere yönelik dijital metinler ve ek çalışma kaynaklarının da sunulması ve etkileşimli bir sınıf ortamında eğitim-öğretim hizmetlerinin sürdürülmesi amaçlanmaktadır.

Araştırmanın Amacı: Bu araştırmanın temel amacı, dijital metinlerin ilkokul 4. sınıf öğrencilerinin okuduğunu anlama, akıcı okuma ve okuma tutumu üzerindeki etkisini ortaya koymaktır. Bu amaç doğrultusunda aşağıdaki sorulara cevap aranacaktır.

1. Dijital metinlerin kullanıldığı deney grubu öğrencileri ile basılı metinlerin kullanıldığı kontrol grubu öğrencileri arasında okuduğunu anlama puanları arasında anlamlı bir farklılık var mıdır?

2. Dijital metinlerin kullanıldığı deney grubu öğrencileri ile basılı metinlerin kullanıldığı kontrol grubu öğrencileri arasında akıcı okuma becerileri puanları arasında anlamlı bir farklılık var mıdır?

3. Dijital metinlerin kullanıldığı deney grubu öğrencileri ile basılı metinlerin kullanıldığı kontrol grubu öğrencileri arasında okuma tutum ölçeğinden aldıkları puanlar arasında anlamlı bir farklılık var mıdır?

4. Dijital metinlerin kullanıldığı deney grubu öğrencileri ile basılı metinlerin kullanıldığı kontrol grubu öğrencileri arasında okuma hatalarını düzeltmede anlamlı bir farklılık var mıdır?

Araştırmanın nicel boyutuyla ilgili araştırma sorularına ilişkin ulaşılan sonuçları desteklemek, ulaşılan sonuçların uygulanan yöntemden mi yoksa farklı değişkenlerin de bu süreçte etkili olup olmadığını ortaya koymak, araştırma sürecine ilişkin daha zengin ve derinlemesine bilgilere ulaşmak amacı ile araştırmada ayrıca aşağıdaki sorulara cevap aranacaktır. Açıklayıcı sıralı karma yöntemin nitel boyutuna ilişkin sorular aşağıdaki gibi ifade edilmiştir:

5. Deney grubundaki öğrencilerin okuma sürecinde dijital metinleri kullanmaya ilişkin görüşleri nelerdir?

- Okuma ve anlamayı kolaylaştırma durumu,
- Okumayı sevme, devam ettirme durumu,
- Okuma sürecini kolaylaştırma/zorlaştırma durumu.

Araştırmanın Yöntemi: Araştırmada nicel ve nitel araştırma yöntemlerinin bir arada kullanıldığı yakınsayan (eş zamanlı) paralel karma yöntem kullanılmıştır. Karma yöntemin seçilme nedeni, elde edilen nicel verilerin nitel veriler ile desteklenerek sonuçların daha anlaşılır olmasını sağlamaktır. Çalışma grubu, 2016-2017 eğitim-öğretim yılı güz döneminde Kırşehir ili Kaman ilçe merkezinde bulunan sekiz ilkokul arasından sosyo-ekonomik düzeyi denk olan dört ilkokulun 4. sınıfında öğrenim gören toplam 75 öğrenci üzerinde gerçekleştirilmiştir. Yapılan tarama sonucunda 75 öğrencinin akıcı okuma puanları yüksek puandan başlanarak sıralanmış ve puanı en düşük 30 öğrenci çalışma için seçilmiştir. Seçilen bu öğrencilerin isimleri yazılarak bir torbaya atılmış ve kura çekilerek 15 öğrenci deney grubuna, 15 öğrencide kontrol grubuna atanmıştır. Deney ve kontrol grubu öğrencilerinin ön test- ara test ve son test puanların analizinde Mann Whitney U-Testi kullanılmıştır. Deney grubu ve kontrol grubu öğrencilerini kendi içerisinde değerlendirirken Wilcoxon işaretler sıralar testi kullanılmıştır. Karşılaştırmalarda anlamlılık düzeyi .05 olarak alınmıştır.

Araştırmanın Bulguları: Araştırma sonucunda dijital metin okumanın öğrencilerin akıcı okuma becerilerinde, okuduğunu anlama becerilerinde ve okuma sırasında yaptıkları okuma hatalarında anlamlı düzeyde etkisinin olduğu bulunmuştur (p<.05). Ayrıca okuma tutumu üzerinde anlamlı bir etkinin olmadığı görülmüştür.

Araştırmanın Sonuçları ve Önerileri: Araştırma sonuçlarının nicel boyutuna ilişkin veriler incelendiğinde, dijital metinler ile yapılan okuma çalışmalarının akıcı okuma becerilerini geliştirdiği, öğrencilerin okuduğunu anlama becerilerini de aralıklı ölçüm sonuçlarına göre olumlu yönde etkilediği fakat uygulama süresinin uzamasıyla

etkisinin azaldığı, okuma tutumu üzerinde anlamlı düzeyde bir etkinin olmadığı ve öğrencilerin okuma sırasında yaptıkları okuma hatalarının sayısında da azalma olduğu bulunmuştur. Araştırmanın nitel boyutuna ilişkin veriler incelendiğinde öğrenciler genel olarak tablet ile dijital metin okumanın olumlu olduğunu, severek okuma yaptıklarını belirtmişlerdir. Araştırmanın diğer araştırmalardan farkı dijital metinlerin akıcı okuma becerileri üzerindeki etkisini ortaya koymasıdır. İlgili literatürde bu tür çalışmaların yok denecek kadar az oluşu bu çalışmayı sonuçları bakımından önemli kılmaktadır. Ülkemizde eğitim sistemimizde teknolojik ürünler kullanılmasına rağmen eğitim ortamlarında istenilen düzeyde istifade edilememektedir. Bu durumun en önemli sebeplerinden bir tanesi de eğitim sistemimize uygun yazılımsal programların eksikliğidir. Bu sorunun ortadan kalkması ile teknolojinin getirdiği imkânlar planlı bir şekilde kullanılarak eğitim ortamlarını zenginleştirmek mümkündür. Öğretmenlere öğrencilerin akıcı okumalarını geliştirmede ve okuduğunu anlamada dijital metinleri kullanmalarını öneririz.

Anahtar Kelimeler: Okuma becerileri, teknoloji, tekrarlı okuma.