



## The Effect of Listening Activities Using Digital Texts on Fourth Grade Students' Listening and Reading Comprehension Skills\*

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### Abstract

The purpose of this study is to examine the effect of listening activities conducted using digital texts on the listening and reading comprehension skills of fourth-grade primary school students. A pretest–posttest control-group quasi-experimental design was used for the study. The research was conducted among 42 students attending a state school in Kastamonu, selected via convenience sampling, namely 21 students in the experimental group and 21 in the control group. Data were collected using the Listening Skills Scale and the Reading Comprehension Test and analyzed using statistical software. The findings indicated that listening activities using digital texts significantly improved students' listening skills; however, they did not significantly affect their reading comprehension.

**Keywords:** Primary school, digital text, listening comprehension, reading comprehension

### Dijital Metinlerle Yapılan Dinleme Etkinliklerinin Dördüncü Sınıf Öğrencilerinin Dinleme ve Okuduğunu Anlama Becerilerine Etkisi

#### Öz

Bu araştırmanın amacı, dijital metinler aracılığıyla yürütülen dinleme çalışmalarının ilkökul dördüncü sınıf öğrencilerinin dinleme ve okuduğunu anlama becerilerine etkisini incelemektir. Çalışmada ön test–son test kontrol gruplu yarı deneysel desen kullanılmıştır. Araştırma, Kastamonu’da bir devlet okulunda öğrenim gören ve uygun örnekleme yöntemiyle belirlenen toplam 42 öğrenci ile yürütülmüş; öğrencilerin 21’i deney, 21’i kontrol grubunda yer almıştır. Veriler Dinleme Becerisi Ölçeği ve Okuduğunu Anlama Testi aracılığıyla toplanmış ve istatistik programı ile analiz edilmiştir. Bulgular, dijital metinlerle gerçekleştirilen dinleme etkinliklerinin öğrencilerin dinleme becerilerini anlamlı düzeyde geliştirdiğini, ancak okuduğunu anlama becerileri üzerinde anlamlı bir etki oluşturmadığını göstermiştir.

**Anahtar Kelimeler:** İlkokul, dijital metin, dinlediğini anlama, okuduğunu anlama

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### **Introduction**

Listening is a fundamental language skill that encompasses perceiving sound stimuli in one's environment, interpreting them, and responding appropriately. Comprehension of what is heard is defined as the ability to grasp, interpret, and evaluate the content of the message that is heard (Doğan, 2017; Özbay, 2009). This skill is considered a cornerstone of language acquisition and has a critical impact on an individual's academic success and social development. Listening is not only the most frequently used language skill in daily life but also forms the basis of all learning processes from the pre-school period onwards (Calp, 2010). Reading comprehension is the process of meaning-making through interaction with a text. This process involves decoding, interpreting, and analyzing the text and plays a decisive role in an individual's academic success (Akyol, 2016). Reading comprehension skills directly affect students' success in all subjects and form the basis of lifelong learning processes (Güneş, 2014).

Listening skills are recognized as one of the language skills that plays an important role in life, from communication to psychology, from education to everyday life. Listening skills are learned first and form the basis of other language skills (reading, speaking, writing) (Özbay, 2009). The literature emphasizes that listening skills are among the most frequently used language skills across every stage of human life, from the womb to death (Osada, 2004; Altuntaş and Akyüz, 2015; Kodan and Özdemir, 2016).

Various approaches to defining listening skills exist in the literature. Calp (2010) defines listening as the process of focusing one's attention on the speaker's utterances in order to perceive their sounds, understand the information conveyed, and retain what is deemed necessary in one's mind. Güneş (2013), on the other hand, views listening as a complex process of interpretation carried out jointly by the ear and the brain in response to auditory stimuli such as sound, music, noise, and speech. Tüzel (2014) characterizes listening as a fundamental language skill frequently used for communication and learning, involving mental processes such as selection, matching, and perception, with conscious meaning-making at its core. Ünal and Özer (2014) explain listening as the process by which the brain controls and perceives stimuli from the individual's environment.

Definitions particularly emphasize that listening is a conscious process, beginning with hearing and ending with comprehension. Generally, explanations of listening skills highlight two fundamental dimensions: first, the physiological aspect of listening (distinguishing it from hearing and perception); second, its functional aspect (comprehension, evaluation, and communication). Within this framework, functional listening can be defined as the interpretation and analysis of stimuli heard or perceived during interaction, along with the response given at the end of this process (Erdem and Erdem, 2015; Gürel and Tat, 2012; Maden, 2013).

Listening skills are a critical ability that we encounter at every moment of human life and that directly affects our quality of life. From a baby recognizing its mother's voice to a student understanding their teacher in class, from expressing oneself in a job interview to the emotional bonds formed with loved ones, listening skills shape individuals in every area of life. Karadüz (2010) emphasizes that individuals interpret the sounds they hear throughout their lives, store them in their memory, and acquire a large part of their experience and knowledge through listening, stating that listening is a fundamental element of the learning process.

It has been observed that students today experience significant difficulties with listening and reading comprehension. Research has shown that students experience distractions during listening and are unable to comprehend what they hear effectively, which negatively affects their academic achievement (Aşılıoğlu, 2009; Doğan, 2010). Similarly, students also experience deficiencies in higher-level skills, such as grasping the main idea in texts, making inferences, and critically evaluating texts in reading comprehension (Ergen and Batmaz, 2019).

Children growing up in the digital age live in an environment intertwined with technology and show a strong interest in digital content. This situation makes the use of digital tools in educational processes inevitable (Prensky, 2001). Students' interest in digital environments and the natural connection they establish with these environments offer significant opportunities not only to increase their motivation to learn but also to sustain their attention. Unlike traditional printed texts, digital texts

can be multimodal. They combine visual and auditory elements to appeal to students' different learning styles (Kress, 2003). In this context, the use of digital texts has become increasingly important for addressing students' deficiencies in listening and reading comprehension and for supporting their development. Listening activities conducted with digital texts can capture students' attention, increase their motivation, and engage multiple senses. This approach is also supported by the theory of multiliteracies and cognitive load theory (Cazden et al., 1996; Sweller, 1988).

Research on the effectiveness of listening activities has gained increasing importance in Turkish language education in recent years (Çuhadar, 2012; Daşöz, 2013; Doğan, 2017; Kıvrak, 2019; Macit, 2024; Özmen, 2018). However, a review of the literature reveals few studies comprehensively examine the effects of listening activities with digital texts, on students' listening skills and reading comprehension particularly at the primary school level. This situation prevents the full potential of digital texts for developing language skills from being realized, leading to shortcomings in the development of effective teaching strategies in this area.

This research aims to fill an important gap in the existing literature and to reveal the multidimensional effects of digital texts on the development of language skills. It is believed that the research will make an original and meaningful contribution to the literature. Furthermore, by examining the relationship between listening skills and reading comprehension in a digital context through a holistic approach, the study will offer a new perspective in the field. When evaluated in terms of distance learning applications, distance learning has become an integral part of today's education systems, as clearly demonstrated by the COVID-19 pandemic. In this context, it is expected that the findings of this study will provide important insights into the effective use of digital texts, guiding the design of future distance learning applications and contributing to the development of hybrid learning models. From the students' perspective, the research results are anticipated to contribute to the identification of effective teaching approaches for developing the multiple literacy skills required in the digital age. The development of listening skills, in particular, is critical, as it forms the basis for other language skills, as emphasized by Özbay (2009) and Doğan (2017).

Based on this need, researching the effects of listening activities conducted using digital texts on elementary school students' listening and reading comprehension skills will not only contribute to theoretical knowledge but also facilitate the development of effective teaching methods that can be used in practice.

The primary aim of the study is to examine the effect of listening activities conducted using digital texts on the listening and reading comprehension skills of fourth-grade primary school students. In line with this aim, the study will seek answers to the following sub-questions:

1. Do digital text-based listening activities have a significant impact on students' listening skills?
2. Do digital text-based listening activities have a significant impact on students' reading comprehension skills?

## **Method**

### **Research Design**

In this study, a quantitative research design was adopted to determine the effects of listening activities conducted with digital texts on listening skills and reading comprehension among fourth-grade elementary school students. A pretest–posttest control-group quasi-experimental design was used for the study. A quasi-experimental design is a type of experimental research in which existing groups are used when participants cannot be randomly assigned to groups (Büyüköztürk et al., 2021; Karasar, 2022). In this design, the intervention is applied only to the experimental group, and the groups are compared (Creswell and Creswell, 2017).

### **Participants**

The sample for this research consisted of 42 students from two classes at a public elementary school in Kastamonu province, Türkiye, with one class selected as the experimental group ( $n = 21$ ) and the other as the control group ( $n=21$ ). When determining the groups, particular attention was paid to ensuring that the socio-economic levels of the school and the students were comparable. The students'

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parents were informed about the study, and the necessary support was provided. As participation in the study was voluntary, the researcher informed the students about the study. While all students in the experimental group participated in the study, two students in the control group did not participate because they chose not to.

The fourth-grade classes examined in the study were selected using convenience sampling, a non-random sampling technique. Convenience sampling is preferred, especially when resources are limited, and it is not possible to examine all possible individuals or situations (Büyüköztürk et al., 2021; Özen and Gül, 2007). In this method, individuals or situations that can provide the most appropriate information for the aims and needs of the research are consciously selected. The main objective is to identify participants who can provide the most comprehensive and in-depth answers to the research questions (Fraenkel and Wallen, 2006).

To enhance the internal validity of experimental studies, it is necessary to control all other factors that may influence the dependent variable (e.g., gender distribution, class size, academic achievement level) (Polit and Hungler, 1997). Therefore, particular attention was paid to ensuring that the experimental and control groups were similar with respect to these characteristics. The distribution of students in the sample group is presented in Table 1.

Table 1  
*Distribution of Students in the Sample Group*

| Variable | Control |    | Experimental |    | Total |    | Chi-square test |                                    |
|----------|---------|----|--------------|----|-------|----|-----------------|------------------------------------|
|          | n       | %  | n            | %  | n     | %  |                 |                                    |
| Gender   | Female  | 8  | 38.1         | 11 | 52.4  | 19 | 45.2            | $\chi^2(1) = 0.865$<br>$p = 0.352$ |
|          | Male    | 13 | 61.9         | 10 | 47.6  | 23 | 54.8            |                                    |
|          | Total   | 21 | 100.0        | 21 | 100.0 | 42 | 100.0           |                                    |

When examining the gender distribution of students in the sample group, there were 8 female students (38.1%) and 13 male students (61.9%) in the control group, and 11 female students (52.4%) and 10 male students (47.6%) in the experimental group. The results of the chi-square independence test showed no statistically significant difference in the gender distributions of the students in the experimental and control groups ( $\chi^2(1) = 0.865$ ;  $p = 0.352$ ).

### Data Collection Tools

Two different measurement tools were used to collect the research data: The Listening Skills Scale and the Reading Comprehension Test.

The Listening Skills Scale was developed by Yalçın and Özcan (2022). During the development of the scale, an Exploratory Factor Analysis (EFA) was first conducted, followed by a Confirmatory Factor Analysis (CFA) to test construct validity. The principal component analysis revealed that the 32-item, single-factor structure accounted for 41.11% of the total variance. CFA results showed that the scale's unidimensional structure was valid [ $\chi^2 = 1753.947$ ;  $df = 452$ ;  $p < 0.001$ ;  $\chi^2/df = 3.88$ ;  $GFI = 0.88$ ;  $CFI = 0.90$ ;  $RMSEA = 0.06$ ], and the standardized path coefficients ranged from 0.51 to 0.68 and were found to be significant at the  $p < 0.001$  level. The scale, consisting of 32 items, is organized on a 5-point Likert scale (1 = Not at all applicable to me, 5 = Completely applicable to me) and does not contain any reverse-coded items. High scores on the scale indicate strong listening skills. In the original study of the scale, the Cronbach's alpha internal consistency coefficient was 0.95, and a positive, significant correlation of 0.96 was found between test-retest scores administered three weeks apart. In this study, the Cronbach's alpha reliability coefficient for the scale was 0.813.

Reading Comprehension Test. The test was developed by Bulut and Yıldız (2021) to measure fourth-grade students' reading comprehension skills. The test contained two separate texts, one narrative and one informational, with a total of 20 questions, 10 for each text. The narrative text sub-dimension measured students' ability to understand story-type texts, while the informational text sub-

dimension assessed their ability to understand explanatory and descriptive texts. Each question in the test had four multiple-choice options. In the scoring system, five points were awarded for correct answers, while no points were deducted for incorrect answers. Therefore, the total score that could be obtained on the test ranges from 0 to 100. In the reliability studies of the test, the Cronbach's alpha internal consistency coefficient was determined to be 0.72 for the narrative text sub-dimension and 0.79 for the informational text sub-dimension. It was considered sufficient for the test as a whole. In this study, the Cronbach's alpha reliability coefficient of the test was determined to be 0.72.

### Data Collection

Data collection for this study was conducted during the fall term of the 2024–2025 academic year. Prior to implementation, pre-test data were collected by administering the Listening Skills Scale and the Reading Comprehension Test to both groups in order to determine the initial levels of the experimental and control groups. During the implementation process, listening activities were conducted with the experimental group using digital texts for two lessons per week over eight weeks. In this context, the educational platform called Derslig was used for the digital texts. Texts appropriate for the fourth-grade level were used on this platform, which students, teachers, and parents can access by registering as members. The selected texts were presented in a digital environment and supported by visual elements and voiceovers. The activities were conducted in the classroom using an interactive whiteboard, and students listened to the texts via the voiceover feature. No experimental intervention was made with the control group during the implementation process. Lessons were conducted within the curriculum in line with the existing teaching program. After the implementation process was completed, the Listening Skills Scale and the Reading Comprehension Test were re-administered to determine changes in the listening skills and reading comprehension levels of students in the experimental and control groups, and post-test data were collected.

### Data Analysis

The data obtained in the study were analyzed using SPSS software. An ANCOVA was conducted to evaluate the effect of listening activities using digital texts on the listening skills and reading comprehension of fourth-grade primary school students.

For the ANCOVA analysis to yield valid and reliable results, certain fundamental assumptions must be met. In this study, first, Pearson correlation analysis was used to examine whether there was a linear relationship between the dependent variable (post-test scores) and the covariate (pre-test scores). A positive, statistically significant relationship above 0.30 was observed between the pre-test and post-test scores for both dependent variables. In contrast, no significant relationship was found between the dependent variable and the independent variable (group type) prior to the analysis, thus confirming that the linearity assumption was met. Another important assumption of ANCOVA, the homogeneity of regression slopes, indicates whether the relationship between the covariate and the dependent variable is similar across all groups. The analyses revealed that the group  $\times$  pre-test interaction was not statistically significant ( $p > 0.05$ ), indicating that the assumption of homogeneity of regression slopes was met. Furthermore, the assumption of equal group variances was examined using Levene's test, which indicated that the variances between groups were not statistically different for either listening comprehension or reading comprehension ( $p > 0.05$ ).

One of the fundamental assumptions of ANCOVA is that both the covariate (pre-test) and the dependent variable (post-test) are normally distributed within the control and experimental groups. To determine whether this prerequisite was met, the distributions of pre-test and post-test scores for listening comprehension and reading comprehension in the control and experimental groups were analyzed. The findings obtained from these analyses are presented in Table 2.

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Table 2  
*Normal Distribution Analysis Results*

| Variable                         | Group      | Shapiro-Wilk |       | Distortion | Flatness |
|----------------------------------|------------|--------------|-------|------------|----------|
|                                  |            | W            | p     |            |          |
| Listening skills pre-test        | Control    | 0.954        | 0.405 | -0.583     | -0.108   |
|                                  | Experiment | 0.950        | 0.342 | -0.618     | 0.620    |
| Listening skills final test      | Control    | 0.960        | 0.525 | -0.729     | 0.670    |
|                                  | Experiment | 0.976        | 0,865 | -0.275     | 0.058    |
| Reading comprehension pre-test   | Control    | 0.941        | 0.231 | 0.681      | 0.126    |
|                                  | Experiment | 0.924        | 0.104 | 0.013      | -0.689   |
| Reading comprehension final test | Control    | 0.878        | 0.132 | 1.116      | 1.103    |
|                                  | Experiment | 0.930        | 0.137 | 0.506      | -0.933   |

As shown in Table 2, the Shapiro–Wilk test results for the listening skills pre-test analyses indicated that the pre-test scores of both the control group ( $W = 0.954$ ;  $p = 0.405$ ) and the experimental group ( $W = 0.950$ ;  $p = 0.342$ ) were normally distributed. Similarly, the skewness (-0.583) and kurtosis (-0.108) for the control group, and the skewness (-0.618) and kurtosis (0.620) for the experimental group, were within the range of -3 to +3, indicating that the data were normally distributed.

On the other hand, in the analyses of the listening comprehension post-test, the Shapiro–Wilk test results showed that the post-test scores of both the control group ( $W = 0.960$ ;  $p = 0.525$ ) and the experimental group ( $W = 0.796$ ;  $p = 0.865$ ) were normally distributed. Similarly, the skewness (-0.728) and kurtosis (0.670) for the control group, and the skewness (-0.275) and kurtosis (0.058) for the experimental group, were within the range of -3 to +3, indicating that the data were normally distributed. Based on these results, it was concluded that the assumption of normal distribution was met for both the pre-test and post-test of listening skills.

On the other hand, in the analyses of the pre-test for reading comprehension skills, the Shapiro-Wilk test results showed that the pre-test scores of both the control group ( $W = 0.941$ ;  $p = 0.231$ ) and the experimental group ( $W = 0.924$ ;  $p = 0.104$ ) were normally distributed. Similarly, the skewness (0.681) and kurtosis (0.126) for the control group, and the skewness (0.013) and kurtosis (-0.689) for the experimental group, were within the range of -3 to +3, indicating that the data were normally distributed.

On the other hand, in the analyses of the post-test for reading comprehension skills, the Shapiro-Wilk test results showed that the post-test scores of both the control group ( $W = 0.878$ ;  $p = 0.132$ ) and the experimental group ( $W = 0.930$ ;  $p = 0.137$ ) were normally distributed. Similarly, the skewness (1.116) and kurtosis (1.103) values for the control group and the skewness (0.506) and kurtosis (-0.933) values for the experimental group were between -3 and +3, indicating that the data were normally distributed. Based on these results, it was concluded that the assumption of normality was met for the pre-test and post-test scores of reading comprehension skills.

### Research and Publication Ethics

This study was conducted in accordance with all the rules specified in the "Higher Education Institutions Scientific Research and Publication Ethics Guidelines." None of the actions listed under the heading "Actions Contrary to Scientific Research and Publication Ethics" in the second section of the guidelines was carried out.

### Ethics Committee Approval

Name of the board = Kastamonu University Social and Humanities Research Ethics Committee  
Date of decision = 09.10.2024  
Document number = 10/20

### Findings

Within the scope of the first research question, the effect of listening activities conducted using digital texts on students' listening skills was examined. In this regard, the pre-test and post-test scores of the experimental and control groups' listening skills were analyzed. A Pearson product-moment correlation analysis was conducted to examine the relationship between the pre-test and post-test scores and the digital listening activities. The results of the correlation analysis are presented in Table 3.

Table 3  
*Listening Skills Correlation Analysis Results*

| Variable                                    | Listening studies<br>(Independent variable) | Preliminary test<br>(Common variable) | Final test<br>(Dependent variable) |
|---|---|---------------------------------------|------------------------------------|
| Listening studies<br>(Independent variable) | 1   |                                       |                                    |
| Preliminary test<br>(Common variable)       | 0.264                                       | 1                                     |                                    |
| Final test (Dependent<br>variable)          | 0.161                                       | 0.483**                               | 1                                  |

\*\*p < 0,01

Table 3 shows that there was no statistically significant relationship between the post-test scores and the digital listening activities ( $r = .161$ ,  $p > .05$ ). In contrast, a moderately positive and statistically significant relationship was found between the pre-test and post-test scores ( $r = .483$ ,  $p < .01$ ). A one-way analysis of covariance (ANCOVA) was conducted to determine the effect of digital listening activities on students' listening skills, controlling for pre-test scores as a covariate. The ANCOVA results are presented in Table 4.

Table 4  
*The Effect of Listening Exercises on Listening Skills*

| Source of variance        | Sum of squares | sd | Mean square | F      | p     |
|---------------------------|----------------|----|-------------|--------|-------|
| Revised model             | 6.155          | 2  | 3.077       | 18.171 | 0.000 |
| Intersection              | 0.456          | 1  | 0.456       | 2.691  | 0.109 |
| Listening skills pre-test | 1.426          | 1  | 1.426       | 8.417  | 0.006 |
| Listening exercises       | 3.178          | 1  | 3.178       | 18.767 | 0.000 |
| Error                     | 6.605          | 39 | 0.169       |        |       |
| Total                     | 460.253        | 42 |             |        |       |
| Adjusted total            | 12.760         | 41 |             |        |       |

$\bar{R}^2 = 0,456$ ;  $\eta^2 = 0,325$

ANCOVA results, conducted with pre-test scores controlled as covariates, showed a statistically significant difference between the experimental and control groups ( $F(1, 39) = 18.767$ ,  $p < .001$ ). When the adjusted means were examined, it was determined that the experimental group's post-test mean score ( $M = 3.55$ ) was higher than the control group's ( $M = 2.98$ ). The model explained 45.6% of the variance in the dependent variable ( $R^2 = .456$ ). The effect size value (partial  $\eta^2 = .325$ ) indicated that the experimental procedure had a moderate to large effect. These findings revealed that listening activities using digital texts had a statistically significant, positive effect on students' listening skills.

The second research question examined the effect of listening activities using digital texts on students' reading comprehension. In this regard, the pre-test and post-test scores of the experimental and control groups were analyzed. A Pearson product-moment correlation analysis was conducted to examine the relationship between the pre-test and post-test scores and the digital listening activities. The results of the correlation analysis are presented in Table 5.

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Table 5  
*Reading Comprehension Correlation Analysis Results*

| Variable                                    | Listening studies<br>(Independent variable) | Preliminary test<br>(Common variable) | Final test<br>(Dependent variable) |
|---|---|---------------------------------------|------------------------------------|
| Listening studies<br>(Independent variable) | 1   |                                       |                                    |
| Preliminary test (Common<br>variable)       | 0.347                                       | 1                                     |                                    |
| Final test (Dependent<br>variable)          | 0.230                                       | 0.668**                               | 1                                  |

\*\*p<0,01

Table 5 shows that there was no statistically significant relationship between the post-test scores and the listening activities conducted using digital texts ( $r = .230$ ,  $p > .05$ ). In contrast, a moderately positive and statistically significant relationship was found between the pre-test and post-test scores ( $r = .688$ ,  $p < .01$ ). A one-way analysis of covariance (ANCOVA) was conducted to determine the effect of listening activities conducted using digital texts on students' reading comprehension skills, controlling for pre-test scores as a covariate. The ANCOVA results are presented in Table 6.

Table 6  
*The Effect of Listening Exercises on Reading Comprehension Skills*

| Source of variance             | Sum of squares | sd | Mean square | F      | p     |
|--------------------------------|----------------|----|-------------|--------|-------|
| Revised model                  | 4829.977       | 2  | 2414.988    | 15.743 | 0.000 |
| Intersection                   | 2254.440       | 1  | 2254.440    | 14.697 | 0.000 |
| Reading comprehension pre-test | 4257.953       | 1  | 4257.953    | 27.758 | 0.000 |
| Listening exercises            | 0.059          | 1  | 0.059       | 0.000  | 0.984 |
| Error                          | 5982.523       | 39 | 153.398     |        |       |
| Total                          | 105575.000     | 42 |             |        |       |
| Adjusted total                 | 10812.500      | 41 |             |        |       |

$\bar{R}^2 = 0,418$ ;  $\eta^2 = 0,000$

ANCOVA results, conducted with pre-test scores controlled as covariates, showed no statistically significant difference between the experimental and control groups ( $F(1, 39) = 0.059$ ,  $p > .05$ ). When the adjusted means were examined, it was observed that the post-test mean score of the experimental group ( $M = 47.46$ ) was quite close to the post-test mean score of the control group ( $M = 47.54$ ). This finding indicates that listening activities conducted with digital texts did not have a statistically significant effect on students' reading comprehension.

**Discussion and Conclusion**

This study examined the effect of listening activities conducted using digital texts on listening skills and reading comprehension among fourth-grade primary school students.

In line with the first sub-problem of the study, the effect of listening activities conducted using digital texts on students' listening skills was examined. The findings revealed that digital text-based listening activities had a significant and positive effect on students' listening skills. Statistical analyses revealed that the listening skill scores achieved by the experimental group in the post-test were significantly higher than those of the control group. This indicates that the digital listening activities implemented produced an effect size ranging from moderate to large on students' listening skills.

This finding is consistent with the results of similar studies in the literature. Research conducted by Kivrak (2019) revealed that process-based listening activities based on metacognitive strategies improved students' comprehension skills and positively influenced their attitudes towards listening. Similarly, Doğan (2017) found in his study with seventh-grade students that strategy-based listening training improved students' listening skills. These results indicated that planned and

systematic listening activities were effective in developing students' listening skills. In his recent study, Macit (2024) revealed that alternative listening-watching activities improved students' listening skills and positively influenced their attitudes towards the lesson. These findings supported the use of digital technologies as an effective tool in listening education. In a review of the development of listening skills, Osada (2004) noted that digital media tools played an important role in listening processes and that digital technologies effectively enhanced students' listening comprehension.

A study by Sweller (1988) found that high cognitive load environments could negatively affect students' learning; however, activities with lower cognitive load were more effective at developing listening skills. At this point, it can be said that digital texts may support more efficient cognitive processing and help develop students' listening skills. The study by Özmen (2018) found that listening activities using natural sounds were more effective than those using video, demonstrating that the auditory aspect of digital texts played a critical role in student success. Wise's (2009) research emphasized that literacy skills were critical to young people's overall success and that student achievement could be further enhanced when digital tools supported these skills. Yuanisa (2023) demonstrated that digital narrative media improve listening skills. Ciğerci and Gültekin (2017) showed that listening exercises using digital stories significantly increased students' listening scores. In their study on digital listening texts, Günbaş and Gözüküçük (2020) found that digital content had a significant impact on students' listening skills compared to traditional texts. In addition, Leong (1995) found that the simultaneous use of text and audio with digital support was not effective in some cases but did play an important role in increasing student motivation. This indicated that digital content could increase not only academic achievement but also students' interest in the course.

In conclusion, listening activities using digital texts, as reported in other studies, offered significant advantages for developing students' listening skills. The success of these activities was directly related to the design that provides an appropriate cognitive load, strategy-based listening practices, and the careful creation of digital content. These findings provided important insights for future listening education research and encourage the use of digital technologies in educational processes.

In line with the second sub-problem of the research, the effect of listening activities conducted using digital texts on students' reading comprehension skills was examined. The research findings revealed that these activities did not have a statistically significant effect on students' reading comprehension skills. The analysis showed that, after controlling for pre-test scores, there was no significant difference in post-test scores between the experimental and control groups. This result indicated that digital listening activities did not lead to a significant improvement in students' reading comprehension skills.

This result differed from the findings of some studies in the literature. For example, a study conducted by Çuhadar (2012) found that silent reading accompanied by teacher-led oral reading was more effective in comprehension than silent reading alone. This difference indicated that the effect of listening activities conducted with digital texts on reading comprehension skills was limited, and that different methods may be necessary to develop this skill.

The possible reasons for this difference can be explained as follows. First, the duration of the intervention may be an important factor. An eight-week intervention period may not be sufficient to create a meaningful change in students' reading comprehension skills. It can be argued that long-term interventions may yield more pronounced improvements in students' reading comprehension.

Furthermore, the fact that listening and reading skills require different cognitive processes may also explain this situation. A study by Özmen (2018) indicated that listening and reading skills required different cognitive processes and, therefore, the development of listening skills may have limited direct reflection on reading skills. However, the relationship between reading and listening skills was complex, and both skills may emerge at different stages in the language learning process.

Another explanation may be the effect of the types of texts used. Özmen (2018) found that narrative texts were easier to understand than informational texts.

Studies such as Solís et al. (2017) and Gözüküçük and Günbaş (2020) stood out for demonstrating meaningful improvements in reading comprehension in digital or text-based

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interventions. In their experimental study with fourth-grade students, Solís et al. found that the group receiving a text-based word and reading intervention showed a significant increase in reading comprehension. Similarly, Gözüküçük and Günbaş (2020) found that groups that received computer-assisted reading activities showed significant improvement in reading comprehension compared with traditional methods. However, in these studies, applications that supported direct reading and vocabulary training were noteworthy, suggesting that reading comprehension development may be more closely related to interventions focused on active reading and vocabulary instruction.

Indeed, comparisons between reading on a screen and reading printed text, such as those by Başaran (2014) and Ziegler (2019), emphasized that printed text was more advantageous than digital media for improving reading comprehension. These findings indicated that transferring reading comprehension skills to digital content alone may be limited. Ziegler (2019) in particular suggested that the digital reading environment may increase distractions and that insufficient instruction in reading strategies in this environment may negatively affect performance.

However, the structural equation model developed by Ulu (2016) revealed indirect effects of fluent reading skills on simple and inferential comprehension, but indicated that reading comprehension is affected only by reading processes. This model suggested that the development of listening skills may have an indirect, long-term effect on reading comprehension; however, short-term listening-based interventions alone could not produce direct transfer. Ergen and Batmaz (2019) reported that using reading comprehension strategies increased reading success and that strategy-focused interventions provide more lasting and meaningful improvements.

Based on this, it can be said that to achieve a meaningful increase in reading comprehension through listening activities, it is necessary to teach and apply reading strategies simultaneously and systematically.

Furthermore, studies by researchers such as Doğan (2017) and Kıvrak (2019) revealed that metacognitive strategies and process-based listening practices positively influenced not only students' listening skills but also their attitudes towards learning and cognitive awareness. However, whether this positive effect was sufficient for a direct and meaningful improvement in reading comprehension varied across studies.

Similar complex findings existed in the international literature. In his digital reading study based on text-sound synchronization, Leong (1995) found that while motivation increased, meaningful development could not be achieved in some groups. Abadiano and Turner (2005) and Grabe (2010) emphasized that reading fluency and strategic reading skills were critical for comprehension success. Furthermore, Osada (2004) stated that the contribution of listening becoming an active skill to reading comprehension was spread over time and, therefore, the effect of short-term applications may be limited. In his cognitive load theory, Sweller (1988) argued that balancing the load of reading and listening activities in digital environments could lead to more lasting learning in long-term and multi-component interventions.

In summary, the findings of this study aligned with the diverse results in the literature regarding the impact of listening activities using digital content on reading comprehension. The fact that listening activities conducted with digital texts did not produce a significant difference in reading comprehension in this study reinforced the conclusion that listening and reading processes were cognitively distinct and that more holistic, strategic, and long-term interventions are required for meaningful transfer. This finding highlighted that digital tools played a supporting role in language teaching. However, it emphasized the importance of strategy-focused, integrated approaches for developing higher-order skills such as reading comprehension.

In conclusion, the research findings indicated that digital texts could be used as an effective tool for developing listening skills. However, it is understood that different strategies and longer-term applications are necessary for developing reading comprehension skills. These findings supported Daşöz's (2013) conclusion that listening activities made a significant difference in students' listening attitudes and success but may not have a similar effect on other skills.

Based on the research findings, some recommendations for implementation can be developed. Listening exercises with digital texts should be used regularly to develop listening skills at the

elementary school level. When selecting digital texts, teachers should choose content appropriate to students' levels and interests, and support these exercises with a variety of teaching methods and techniques. To develop reading comprehension skills, different strategies should be used in addition to listening exercises with digital texts, and the duration of the application should be planned to be sufficient for skill development.

Various recommendations can also be made for researchers. Similar studies can be replicated across grade levels and with larger sample sizes. The effects of listening studies with digital texts on other language skills can be investigated, and students' views and experiences regarding these studies can be examined in depth using qualitative research methods. The effectiveness of different types of digital texts can be investigated comparatively, and longitudinal studies can be conducted to determine their long-term effects.

From the perspective of policymakers, it is important to strengthen the technological infrastructure for the effective use of digital texts in schools and to organize in-service training for teachers on this subject. Digital content libraries should be created to facilitate teachers' access to high-quality digital texts, and special emphasis should be placed on the use of digital texts in technology-integration initiatives, such as the Education Information Network (EBA). Furthermore, standards and guidelines should be developed to ensure the effective use of digital texts in distance learning. It is believed that work carried out in line with these recommendations will contribute to the more effective use of digital texts in educational processes and the development of students' language skills.

### **Research and Publication Ethics**

This study was conducted in accordance with all the rules specified in the "Higher Education Institutions Scientific Research and Publication Ethics Guidelines." None of the actions listed under the heading "Actions Contrary to Scientific Research and Publication Ethics" in the second section of the guidelines was carried out.

### **Ethics Committee Approval**

Committee name: Kastamonu University Social and Humanities Research Ethics Committee  
Decision date: 09.10.2024  
Document number: 10/20

### **Authors' Contribution**

Author 1: Was responsible for conceptualization, formulating the research question, data collection, and data analysis. Author 2: Contributed to the literature review, data analysis, interpretation of findings, and the writing and editing of the manuscript.

### **Artificial Intelligence Usage Statement**

Artificial intelligence tools were used only for language translation during manuscript preparation.

### **Conflict of Interest**

The authors declare that there is no conflict of interest.

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## **Geniřletilmiř Özet**

### **Giriř**

Dinleme, kiřinin çevresindeki ses uyarılarını algılama, yorumlama ve bunlara uygun řekilde yanıt vermeyi içeren temel bir dil becerisidir. Duyulanların anlaşılması, duyulan mesajın içeriğini kavramak, yorumlamak ve deęerlendirmek olarak tanımlanır (Doęan, 2017; Özbay, 2009). Bu beceri, dil ediniminin temel tařı olarak kabul edilir ve bireyin akademik bařarısı ve sosyal geliřimi üzerinde kritik bir etkiye sahiptir. Dinleme, sadece günlük yařamda en sık kullanılan dil becerisi olmakla kalmaz, aynı zamanda okul öncesi dönemden itibaren tüm öğrenme süreçlerinin temelini oluřturur (Calp, 2010). Okuduęunu anlama, metinle etkileřim yoluyla anlam oluřturma sürecidir. Bu süreç, metni çözme, yorumlama ve analiz etmeyi içerir ve bireyin akademik bařarısında belirleyici bir rol oynar (Akyol, 2016). Okuduęunu anlama becerileri, öğrencilerin tüm derslerdeki bařarısını doğrudan etkiler ve yařam boyu öğrenme süreçlerinin temelini oluřturur (Güneř, 2014).

Son yıllarda, dinleme etkinliklerinin etkinlięine yönelik arařtırmalar Türkçe dil eęitiminde giderek daha fazla önem kazanmıřtır (Çuhadar, 2012; Dařöz, 2013; Doęan, 2017; Kıvrak, 2019; Macit, 2024; Özmen, 2018). Ancak literatür taraması, özellikle ilkokul düzeyinde, dijital metinlerle yapılan dinleme etkinliklerinin öğrencilerin dinleme becerileri ve okuduęunu anlama becerileri üzerindeki etkilerini kapsamlı bir řekilde inceleyen çok az çalıřma olduęunu ortaya koymaktadır.

Bu arařtırma, mevcut literatürdeki önemli bir bořluęu doldurmayı ve dijital metinlerin dil becerilerinin geliřimi üzerindeki çok boyutlu etkilerini ortaya koymayı amaçlamaktadır. Ayrıca dijital dinleme becerileri ile okuduęunu anlama becerileri arasındaki iliřkiyi inceleyerek alana yeni bir bakıř açısı sunacaktır. Uzaktan öğrenme uygulamaları açısından deęerlendirildięinde, COVID-19 salgınının da açıkça gösterdięi gibi, uzaktan öğrenme günümüz eęitim sistemlerinin ayrılmaz bir parçası haline gelmiřtir. Bu bağlamda, bu çalıřmanın bulgularının dijital metinlerin etkili kullanımına iliřkin önemli içgörüler saęlayacaęı, gelecekteki uzaktan öğrenme uygulamalarının tasarımına rehberlik edeceęi ve karma öğrenme modellerinin geliřtirilmesine katkıda bulunacaęı düşünölmektedir. Öğrencilerin bakıř açısından, arařtırma sonuçlarının dijital çağda gerekli olan çoklu okuryazarlık becerilerini geliřtirmek için etkili öğretim yaklařımlarının belirlenmesine katkıda bulunması beklenmektedir. Özbay (2009) ve Doęan (2017) tarafından vurgulandıęı üzere, özellikle dinleme becerilerinin geliřtirilmesi, dięer dil becerilerinin temelini oluřturduęu için kritik öneme sahiptir.

Bu ihtiyaçtan hareketle, dijital metinler kullanılarak gerçekteřtirilen dinleme etkinliklerinin ilkokul öğrencilerinin dinleme ve okuduęunu anlama becerileri üzerindeki etkilerinin arařtırılması, yalnızca teorik bilgiye katkı saęlamakla kalmayacak, aynı zamanda uygulamada kullanılabilecek etkili öğretim yöntemlerinin geliřtirilmesini de kolaylařtıracaktır.

Bu çalıřmanın temel amacı, dijital metinler kullanılarak gerçekteřtirilen dinleme etkinliklerinin, ilkokul dördüncü sınıf öğrencilerinin dinleme ve okuduęunu anlama becerileri üzerindeki etkisini incelemektir. Bu amaç doğrultusunda, çalıřma ařaęıdaki alt sorulara yanıt aramaktadır:

1. Dijital metin temelli dinleme etkinlikleri, öğrencilerin dinleme becerileri üzerinde anlamlı bir etkiye sahip midir?
2. Dijital metin temelli dinleme etkinlikleri, öğrencilerin okuduęunu anlama becerileri üzerinde anlamlı bir etkiye sahip mi?

### **Yöntem**

Bu arařtırmada, dijital metinlerle gerçekteřtirilen dinleme etkinliklerinin ilkokul dördüncü sınıf öğrencilerinin dinleme becerileri ve okuduęunu anlama düzeyleri üzerindeki etkisini belirlemek amacıyla nicel arařtırma yaklařımı benimsenmiřtir. Arařtırmada ön test-son test kontrol gruplu yarı deneysel desen kullanılmıřtır (Büyüköztürk vd., 2021; Creswell ve Creswell, 2017; Karasar, 2022).

Arařtırmanın çalıřma grubunu, Kastamonu ilinde bir devlet ilkokulunda öğrenim gören toplam 42 dördüncü sınıf öğrencisi oluřtırmaktadır. Sınıflardan biri deney (n = 21), dięeri kontrol grubu (n = 21) olarak belirlenmiřtir. Grupların seçiminde sosyo-ekonomik düzey benzerlięi dikkate alınmıřtır. Arařtırmaya katılım gönüllölük esasına dayalı olup, öğrenci ve veliler bilgilendirilmiřtir. Deney grubundaki tüm öğrenciler arařtırmaya katılırken, kontrol grubunda iki öğrenci çalıřmaya dâhil olmamıřtır.

Araştırmanın veri toplama süreci 2024–2025 eğitim-öğretim yılı güz döneminde gerçekleştirilmiştir. Uygulama öncesinde deney ve kontrol gruplarının başlangıç düzeylerini belirlemek amacıyla Dinleme Becerileri Ölçeği ve Okuduğunu Anlama Testi ön test olarak uygulanmıştır. Uygulama sürecinde deney grubunda sekiz hafta boyunca haftada iki ders saati dijital metinler aracılığıyla dinleme etkinlikleri yürütülmüştür. Bu süreçte, dördüncü sınıf düzeyine uygun metinlerin yer aldığı Derslig platformundan yararlanılmış; metinler görsel ve seslendirme desteğiyle etkileşimli tahta üzerinden sunulmuştur. Kontrol grubunda ise herhangi bir deneysel işlem yapılmamış, dersler mevcut öğretim programına uygun şekilde sürdürülmüştür. Uygulama sonunda her iki gruba aynı ölçme araçları tekrar uygulanarak son test verileri elde edilmiştir.

Veri toplama sürecinde iki ölçme aracı kullanılmıştır: Dinleme Becerileri Ölçeği ve Okuduğunu Anlama Testi. Yalçın ve Özcan (2022) tarafından geliştirilen Dinleme Becerileri Ölçeği, 32 maddeden oluşan, tek boyutlu ve beşli Likert tipinde bir ölçektir. Okuduğunu Anlama Testi ise Bulut ve Yıldız (2021) tarafından geliştirilmiş olup, biri öyküleyici diğeri bilgilendirici olmak üzere iki metin ve toplam 20 çoktan seçmeli sorudan oluşmaktadır.

Araştırma verileri SPSS programı ile analiz edilmiştir. Dijital metinlerle gerçekleştirilen dinleme etkinliklerinin etkisini incelemek amacıyla Kovaryans Analizi (ANCOVA) kullanılmıştır. Analiz öncesinde gerekli varsayımlar test edilmiştir. Ön test ve son test puanları arasında pozitif ve anlamlı ilişkiler bulunmuş, regresyon eğimlerinin homojenliği sağlanmış ( $p > 0.05$ ) ve grup varyanslarının eşit olduğu Levene testi ile doğrulanmıştır ( $p > 0.05$ ). Ayrıca, bağımlı değişkenler ve kovaryansın normal dağılım gösterdiği belirlenmiştir.

### Tartışma ve Sonuç

Araştırmanın birinci alt problemi doğrultusunda, dijital metinlerle gerçekleştirilen dinleme etkinliklerinin öğrencilerin dinleme becerileri üzerindeki etkisi incelenmiş ve bu etkinliklerin dinleme becerilerini anlamlı ve olumlu yönde geliştirdiği belirlenmiştir. Analizler, deney grubunun son test puanlarının kontrol grubuna göre anlamlı düzeyde daha yüksek olduğunu ve uygulamanın orta ile yüksek düzey arasında bir etki büyüklüğüne sahip olduğunu göstermektedir. Bu bulgu, alanyazındaki benzer çalışmalarla örtüşmektedir. Kıvrak (2019) ve Doğan (2017), planlı ve strateji temelli dinleme etkinliklerinin öğrencilerin dinleme becerilerini geliştirdiğini ortaya koymuştur. Ayrıca Macit (2024), alternatif dinleme-izleme etkinliklerinin hem dinleme becerilerini hem de derse yönelik tutumu olumlu etkilediğini belirtmiştir. Osada (2004) ise dijital araçların dinleme sürecinde önemli bir rol oynadığını ve anlama becerilerini desteklediğini vurgulamaktadır.

Araştırmanın ikinci alt problemi doğrultusunda, dijital metinlerle gerçekleştirilen dinleme etkinliklerinin öğrencilerin okuduğunu anlama becerileri üzerindeki etkisi incelenmiş ve bu etkinliklerin istatistiksel olarak anlamlı bir etkisinin olmadığı belirlenmiştir. Ön test puanları kontrol altına alındığında, deney ve kontrol gruplarının son test puanları arasında anlamlı bir fark bulunmamıştır. Bu sonuç, dijital dinleme etkinliklerinin okuduğunu anlama becerilerinde doğrudan ve anlamlı bir gelişim sağlamadığını göstermektedir. Bu bulgu, alanyazındaki bazı çalışmalarla farklılık göstermektedir. Örneğin, Çuhadar (2012) öğretmen rehberliğinde yapılan sesli okuma ile desteklenen okuma etkinliklerinin anlama üzerinde daha etkili olduğunu ortaya koymuştur. Bu durum, okuduğunu anlama becerisinin geliştirilmesinde farklı öğretim yöntemlerinin gerekli olabileceğini düşündürmektedir. Elde edilen sonucun nedenleri arasında uygulama süresinin sınırlı olması ve dinleme ile okuma becerilerinin farklı bilişsel süreçler gerektirmesi gösterilebilir. Nitekim Özmen (2018), bu iki becerinin farklı bilişsel yapılar içerdiğini ve birindeki gelişimin diğere doğrudan yansımayaabileceğini belirtmektedir. Bu bağlamda, okuduğunu anlama becerisinin geliştirilmesi için daha uzun süreli ve çok yönlü uygulamalara ihtiyaç olduğu söylenebilir.