

**Article Information** 

# Hacettepe Üniversitesi Eğitim Fakültesi Dergisi

# Hacettepe University Journal of Education

e-ISSN: 2536-4758



# An Analysis on the Strategies Used by Language Learners in Digital Reading\* Sadık Ahmet CETİN\*\*

ABSTRACT

An title inioi mation	ADSTRUCT
Received:	The purpose of this research is to review the digital reading strategies of students learning languages. This
10.03.2022	research was carried out using quantitative research design. Survey model was used in this study. The study
	group of the research consisted of foreign students in the Turkish preparatory class of Başkent University. 100
Accepted:	suitable students were chosen by sampling. A "survey" was used during collection of data. As a result of the
10.08.2022	analysis of the data in the research, it was determined that the students used the problem solving strategies
	the most, the general reading strategies second, and the support strategies the least. It has been observed that
Online First:	students' use of strategies specific to digital environments is also at a high level. When looking at the strategies
28.10.2022	individually, the most used ones are "browsing; purposeful reading; using select, copy and paste; paying
	attention; using an online dictionary and translation; rereading; using the scan or find function; analysis and
Published:	evaluation; conducting research on a search engine or website; questioning the reliability and accuracy of the
31.01.2023	information". The least used are "predicting the content of the text; note taking; underlining and highlighting;
	repeating the text; asking questions to themselves; finding information that is not presented on the basis of the
	text; summarizing the text". As a result, it was seen that language learners use many strategies in digital
	reading and among the strategies, they use problem solving strategies more than the rest. In addition, it has
	been determined that students use strategies specific to digital environments at a high level.
	Keywords: Language learning, digital reading, reading strategies
doi: 10.16986/HUJE.2022	2.469 Article Type: Research Article

Citation Information: Çetin, S. A. (2023). An analysis on the strategies used by language learners in digital reading. *Hacettepe University Journal of Education*, 38(1), 121-133. doi: 10.16986/HUJE.2022.469

# 1. INTRODUCTION

It is known that each skill has a different importance in the language learning process. Language teaching is carried out through the basic language skills which are listening, speaking, reading and writing. Therefore, it is necessary to develop basic language skills in the language learning process. However, in order to learn a language fully, it is necessary to reach an equally good level in all skills in that language. While the importance of all language skills is seen in the language learning process, reading skills come to the fore especially in the information learning process. In order to learn information from written sources, reading skills and understanding what is read in addition to reading are needed. The importance of reading in the information learning process is obvious. Therefore, it is necessary to develop this skill sufficiently and to ensure reading comprehension. Reading comprehension is dependent on a number of factors. Among these factors, the strategies used during reading are of great importance. Using strategy helps to control the reading process and better structure the information read, so that reading comprehension takes place.

Language learning can be approached in several different dimensions. We can generally express these as learning a language as a mother tongue, learning a language as a second language, and learning a language as a foreign language. Although there are some differences in the teaching process among these, it can be said that the teaching logic of a language is the same in all of them. The main point emphasized in language teaching is to develop all language skills together and to support them with grammar rules. In addition to these, it can be stated that it is necessary to give importance to teaching vocabulary in language teaching processes and to teach culture along with language.

Today, with the technology, reading texts have been transferred to digital environments, and a large part of the readings have started to be carried out from digital environments. Digital tools have caused reading habits to change and thus a new concept called digital reading has emerged (Çetin, 2021, pp. 3). The change of reading from traditional environments to digital environments has emerged naturally. The need for information has become a common concept, and digital reading has emerged as a natural development (Kol & Schcolnik, 2000). First, digital tools emerged; however, later digital media began to

e-ISSN: 2536-4758 http://www.efdergi.hacettepe.edu.tr/

<sup>\*</sup> Ethics committee approval was obtained with the decision of Başkent University Academic Evaluation Coordinatorship with the document number = E-62310886-605.99-79050 dated 17.11.2021.

<sup>\*\*</sup> Instructor Dr., Başkent University, Ankara-TURKEY. e-mail: <a href="mailto:sadikahmetcetin@gmail.com">sadikahmetcetin@gmail.com</a> (ORCID: 0000-0002-1858-6914)

be used for reading. The Internet and personal computers have led to the emergence of a new format of reading (Abanomey, 2012). With the increase in the time spent reading electronic documents, a screen-based reading behavior has emerged (Liu, 2005). Reading performed in digital environments has many differences compared to traditional reading. The main difference between the two reading environments is clearly the format (Hamer & McGrath, 2011, pp. 27). However, it is necessary to use different skills for reading in digital environments. Screen-based reading behavior is characterized by spending more time reviewing and browsing, identifying keywords, one-time reading, non-linear reading, and more selective reading, while spending less time on deep reading, concentrated reading; which reduces sustained attention (Liu, 2012, pp. 88).

Reading strategies are very important for making sufficient use of the information attained from reading as well as for reading comprehension. Reading strategies are "intentional, targeted attempts to control and change the reader's efforts to decode the text, understand words, and construct meanings of the text" (Afflerbach, Pearson, & Paris, 2008, pp. 368). The importance of reading strategies is important not only in traditional reading, but also in digital media readings. Strategies play a central role in traditional and new forms of literacy (Cho & Afflerbach, 2017, pp. 111-112). Although digital environments require new strategies, using strategy is very important for both environments. In order for students to be successful online readers, they need to develop and adopt metacognitive reading skills and strategies (Mesgar, Bakar, & Amir, 2012, pp. 1791). It is seen that the use of strategy contributes to reading skill and success. It is necessary to use reading strategies suitable for these environments with the specific characteristics of the environments. For this reason, these deficiencies should be eliminated by giving strategy training to individuals who are inadequate in reading strategies. In the study conducted by Hsiao (2011) the reading awareness of the participants improved, their reading skills became better and their effective strategy use increased significantly with the teaching of reading strategies. Therefore, considering the importance of reading comprehension skills, education should be given on strategies that enable students to understand the texts (Ulu, 2017, pp. 39).

New reading strategies are required for digital environments that are not available in traditional environments. In order to be successful in internet tasks, teachers must be aware of the online reading strategies used by second language learners (Anderson, 2003). Among the strategies required for digital environments are scanning, selecting, copying, pasting, using search engines, using the web, using translation, selecting reliable information and taking a screenshot (Çetin, 2021, pp. 49). These strategies are specific to digital environments. However, it may not be sufficient to use only the strategies specific to digital environments or only traditional strategies in order to ensure full reading comprehension in digital environments. In order to achieve success in these environments, reading strategies used in both environments should be used together. To achieve comprehension goals, readers need to combine multiple strategies (Hamer & McGrath, 2011). In their research, Naumann and Salmeron (2016, pp. 52) concluded that offline comprehension skills alone are not sufficient to produce a good digital reading performance. Therefore, it can be stated that only traditional reading strategies are not sufficient in digital environments, and reading comprehension can be achieved by using different strategies together.

There may be some differences in the strategies used in the language learning process. In the language learning process, more problems may occur during comprehension in the target language, especially during reading. Strategies such as using a dictionary come to the fore for the solution of this problem that arises in the process of reading comprehension. If the act of reading is carried out in digital environments, then strategies such as using an online dictionary and translation come to the fore. The ability to easily define words with a dictionary is one of the benefits of screen reading (Hamer & McGrath, 2011). Huang et al. (2009) found that the most frequently used strategies by students were support strategies such as translation. In many studies conducted in the field, it has been seen that the strategies most used by language learners in their reading in the target language in digital environments are online dictionaries and translation. Language learners may become too dependent on strategies such as online dictionaries and translations because they are not proficient in the language they are learning. Although this situation contributes to understanding in a short time, it may cause a little delay in the language learning process. Therefore, while reading, the reader should first try to understand himself, and then apply these strategies.

#### 1.1. Problem Status

Since digital reading is a new type of reading, there are not enough studies in the field of digital reading. However, today, digital media has begun to be used much more for reading than in the recent past. In recent years, certain parts of the education process in some areas, and all parts in other areas, have been started to be carried out through distance education from digital environments. In addition, many people today learn language only from digital environments on their own or in formal education, again from digital environments. Since digital environments are frequently used by language learners, it is necessary to have some information about the reading behaviors of language learners in these environments. One of the most important among these is the strategies used during reading. Having information about the strategies used by language learners in digital reading will both clarify some information about these students' reading behaviors and give information about their preferred strategies. Related to this, the literature has been scanned in detail. In the literature, studies have been conducted on the strategies used by language learners in their digital reading (Anderson (2003); Huang, Chern, and Lin (2009); Abanomey (2012); Mesgar, Bakar, and Amir (2012); Taki and Soleimani (2012); Omar (2014); Jusoh and Abdullah (2015); Oh (2018); Chen (2019)). However, these studies were conducted in different countries. In Turkey, there is only one study conducted in a similar context to this study (Înceçay (2013)). In this study, the use of strategies specific to digital reading is not questioned, and the number of samples in which the study was conducted is very small and the study is not up-to-date. Based on these circumstances, it was decided to conduct this research.

#### 1.2. Purpose of the Research

In this research, it was aimed to examine the strategy use of language learners in their digital reading.

# 1.2.1. Subgoals of the Research

In line with the purpose of the research, answers to the following questions were sought:

- 1) How is the usage of general reading strategies by students?
- 2) How is the usage of students' problem solving strategies?
- 3) How is the usage of support strategies by the students?
- 4) How is the usage of traditional reading strategies?
- 5) How is the usage of students' digital reading strategies?

#### 2. METHOD

#### 2.1. Model of the Research

This research was carried out with the screening method, one of the quantitative research designs. Scanning is a research model that aims to detect a past or present situation as it exists (Karasar, 2018, pp. 109). In this study, the researcher interpreted the information he received from the questionnaire form he applied to the students. The survey researcher can examine the object or the individual directly; can refer to various previously retained sources, old data and source persons in the field; can interpret the scattered data to be obtained by integrating it with his own observations in a system (Karasar, 2018, pp. 109). The researcher tried to determine the strategies used by language learners in their digital reading according to the answers given to the items in the questionnaire.

# 2.2. Study Group

The study group of the research was composed of foreign students learning Turkish at Başkent University. Among these students, 100 students at the intermediate level were selected with purposeful and convenience sampling method. Purposeful sampling allows for in-depth research by selecting information-rich situations depending on the purpose of the study (Büyüköztürk et al., 2017, pp. 89). In the formation of the study group in this research, attention was paid to maximum diversity in terms of the social structure, economic structure and gender of the students. Equality was achieved in the study group in terms of male and female balance. Another reason why the study group was formed from students at Başkent University is that students have reading tasks that they do online every week. Thus, students are constantly and regularly reading from digital media in the language learning process.

#### 2.3. Data Collection Tools

In this research, a questionnaire form was prepared to determine the strategies that students use while reading in digital environments. The prepared form, 28 items were included to determine the strategies used by foreign students while reading in digital environments in the process of learning Turkish. Students were asked to respond to these items with the instructions.

#### 2.3.1. Survey form

The strategies used by foreign students in their digital reading in the process of learning Turkish were determined by the information obtained from the questionnaire. In the preparation of this form, Sheorey and Mokhtari's (2001) study was used to determine the strategies used by students who previously learned English as a second language while reading. The researcher created the form with traditional strategies and strategies specific to digital reading that should be included in the questionnaire. The final form of the questionnaire included 28 items. The questionnaire was finally examined by field experts. Thus, the content validity of the questionnaire was ensured. Necessary corrections were made in the form with the suggestions of the field expert. The final version of the questionnaire can be found in the appendices. Options are included for each item in the questionnaire. Each student marked the appropriate option.

In this study, reading strategies are classified as "global reading strategies, problem solving strategies, reading support strategies" as in many sources. In addition, in this study, reading strategies are classified as those specific to digital environments and traditional strategies that can be used in both environments. Strategies in the 1st, 2nd, 3rd, 4th, 10th, 19th, 20th, 23rd, 26th, 27th places in the survey are general; Ranks 9, 11, 12, 15, 18, 22, 25 are problem solving; The 5th, 6th, 7th, 8th, 13th, 14th, 16th, 17th, 21st, 24th, and 28th rows were evaluated as supportive strategies. Strategies ranked 1, 6, 13, 21, 25, 27 among these are specific to digital reading; Ranks 2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19, 20, 22, 23, 24, 26, 28 are both traditional and strategies used in digital environments.

#### 2.4. Data Collection

Ethics committee permissions were obtained from Başkent University in order to conduct the research. Later, with the permissions obtained, the researcher went to both schools separately and the data were collected from the students together with the teacher of the class. The data of the study were collected in the fall semester of the 2021-2022 academic year. The data were obtained from the students in a course and with a single application. Before the study, necessary explanations were given to the students about the study. In this study, all of the students from whom the data were collected voluntarily participated in the study. To school administration and students; It was stated that the data will be used for an academic study and the results will not be shared anywhere. In addition, name information was not taken from the students.

#### 2.5. Analysis of Data

In the analysis of the data, the answers given by the students to the items were checked first. At this stage, forms with missing answers and duplicate answers were not evaluated. Therefore, at this stage, 20 of the 120 forms received from the students were not evaluated, and the remaining 100 forms were evaluated. The answers given by the students to these forms were recorded by the researcher for each item's options one by one. After this process was completed, the percentage distribution of the answers given by the students in SPSS was examined. Then, the researcher interpreted the data according to the percentages of the students' response distributions.

# 2.6. Validity

Validity is the measurement of what a tool is designed to measure (Atak, 2011). In this research, many studies conducted in this field were scanned in order for the questionnaire form, which is a measurement tool, to accurately measure the strategies used in the language learning process, the strategies used in reading and digital reading were placed in the questionnaire form. Thus, it has been tried to ensure that the measurement tool accurately measures the strategies used by students in the language learning process in digital environments. It is also important for the content validity of the research that all the strategies used by the students are included in the form. Content validity requires that the measurement tool adequately question the behaviors it will measure and that the items adequately reflect the behaviors they want to measure (Büyüköztürk et al., 2017). Therefore, it also contributed to the content validity of this research. In addition, experts were consulted for the content validity of the study.

In the study, students' strategy use was questioned with 28 different items, and each of these items questioned a different strategy. Having a sufficient number of items in the study and each item measuring a different strategy is an important factor for validity. In the research, the data were taken from the students in a quiet and noise-free environment so that the students are not affected by different conditions and situations. In addition, the students were informed that the data obtained from them would not turn into any grades for them, thus preventing the students from getting stressed and giving different answers. These situations contribute to the validity of the research in terms of application conditions.

#### 2.7. Reliability

Reliability is a matter of whether or not a work is involved in error. If error is involved in the study, the reliability of the study will be damaged. Reliability is related to how accurately the test measures the feature it wants to measure (Büyüköztürk, 2017, pp. 114). If no errors are involved in the test, the test can accurately measure the feature it wants to measure.

The items in the questionnaire were checked by experts, and the errors in the items were corrected in line with the suggestions of the experts so that the items were clear and the students did not misunderstand the statements in the items. Thus, it was tried to prevent any negative effects on reliability. Students were given sufficient time to answer the test items. Thus, it was tried to support reliability, to prevent students from answering without reading by giving them a short time, and to prevent them from cheating by giving more time to others.

In this study, attention was paid to diversity in the selection of students so that the group from which the data was taken was not homogeneous. With such a selection, the reliability of the research was tried to be ensured.

#### 3. FINDINGS

#### 3.1. Finding Regarding the First Research Question

In this section, the answer to the question "How is the usage of general reading strategies by students?" has been sought. In this regard, the distribution of students' use of general reading strategies is shown in Table 1.

Table 1.

Distribution of Students' Responses in General Reading Strategies

Strategy items		I never do	I rarely do	I occasionally do	I usually do	I always do
1. I zoom in and out to read texts more easily in digital environments.	f.	10	13	31	31	15
	y.	0,1	0,13	0,31	0,31	0,15
2. Before I start reading digitally, I take a general look at the text to see what it's about.	f.	6	9	23	39	23
	y.	0,06	0,09	0,23	0,39	0,23
3. Before I start reading in digital environments, I try to guess what the content of the	f.	22	27	26	15	10
text is about.	y.	0,22	0,27	0,26	0,15	0,1
4. I have a purpose while reading in digital environments.	f.	1	7	23	38	31
	y.	0,01	0,07	0,23	0,38	0,31
10. In digital environments, I do not read everything in the text, I read selectively.	f.	11	23	25	32	9
	y.	0,11	0,23	0,25	0,32	0,09
19.IassociatetheinformationIreadindigitalenvironmentswithmyowninformation.	f.	1	18	36	27	18
	y.	0,01	0,18	0,36	0,27	0,18
20.IassociatetheinformationIreadindigitalenvironmentswiththeinformationfrom	f.	4	18	37	26	15
different sources.	y.	0,04	0,18	0,37	0,26	0,15
23. I critically analyze and evaluate what I read in digital environments.	f.	6	17	26	37	14
	y.	0,06	0,17	0,26	0,37	0,14
26. I question the reliability and accuracy of the information I come across on websites	f.	4	11	20	32	33
about what I read in digital environments.	y.	0,04	0,11	0,2	0,32	0,33
27. In order to better understand what I read in digital environments, I think about	f.	8	23	28	27	14
information both in the language I learned and in my mother tongue	y.	0,08	0,23	0,28	0,27	0,14

The table shows the usage rate of 10 general reading strategies by language learners. Percentage and frequency analyzes are given in the table. For each strategy, the table shows which of the five options the students chose: "I never do, I rarely do, I occasionally do, I usually do, and I always do". Five options given for each item in the table were preferred by at least one person.

When the table is examined in detail, the general reading strategies used by students while reading in digital environments are as follows, from the most used to the least used: "I have a purpose when reading in digital environments; I question the reliability and accuracy of the information I come across on websites about what I read in digital environments; before I start reading digitally, I take a general look at the text to see what it is about; I critically analyze and evaluate what I read in digital environments; I zoom in and out to read texts more easily in digital environments; I associate the information I read in digital environments with my own information; I associate the information I read in digital environments with the information from different sources; in order to better understand what I read in digital environments, I think about information both in the language I learned and in my mother tongue; in digital environments, I do not read everything in the text, I read selectively; before I start reading in digital environments, I try to guess what the content of the text is about."

When the strategies are generally evaluated, except for the strategy in the last place which is "I try to guess what the content of the text is about before I start reading in digital environments.", all strategies are generally and always used by at least 40% of students.

Considering the usage percentages of general strategies, 48% of the students reported that they usually and always use general strategies.

#### 3.2. Findings Related to the Second Research Question

In this section, the answer to the question "How is the usage of problem solving by students?" has been sought. Regarding this, the distribution of students' use of problem solving strategies is shown in Table 2.

Table 2. Distribution of Students' Answers in Problem Solving Strategies

Strategy items		I never do	I rarely do	I occasionally do	I usually do	I always do
9. I adjust my reading speed in digital environments according to the text I read.	f.	12	16	29	22	21
	y.	0,12	0,16	0,29	0,22	0,21
11. When I have difficulty in understanding while reading in digital environments, I pay	f.	1	8	19	41	31
more attention to what I read.	y.	0,01	0,08	0,19	0,41	0,31
12. I guess the meanings of unfamiliar words and expressions in the text while reading	f.	4	18	31	37	10
in digital environments.	y.	0,04	0,18	0,31	0,37	0,1
15. I try to picture or visualize the information in my mind in order not to forget what I	f.	9	20	27	25	19
read in digital environments.	y.	0,09	0,2	0,27	0,25	0,19
18. When I realize that I do not understand something while reading in digital	f.	2	2	13	38	45
environments, I read it again.	y.	0,02	0,02	0,13	0,38	0,45
22. Based on the text I read in digital environments, I reveal the information that is not	f.	24	27	28	18	3
presented in the text.	y.	0,24	0,27	0,28	0,18	0,03
25.I do research on search engines or websites for information that comes to my mind about what I read in digital environments.	f.	1	10	18	41	30
	y.	0,01	0,1	0,18	0,41	0,3

The table shows usage rate of 7 problem solving strategies by language learners. Percentage and frequency analyzes are given in the table. For each strategy, the table shows which of the five options the students chose: "I never do, I rarely do, I occasionally do, I usually do, and I always do". Five options given for each item in the table were preferred by at least one person.

When the table is examined in detail, the problem solving strategies that students use while reading in digital environments are as follows, from the most used to the least used: "When I realize that I do not understand something while reading in digital environments, I read it again; when I have difficulty in understanding while reading in digital environments, I pay more attention to what I read; I do research on search engines or websites for information that comes to my mind about what I read in digital environments; I guess the meanings of unfamiliar words and expressions in the text when reading in digital environments; I try to picture or visualize the information in my mind in order not to forget what I read in digital environments; I adjust my reading speed in digital environments according to the text I read; Based on the text I read in digital environments, I reveal the information that is not presented in the text."

When the strategies are generally evaluated, except for the strategy in the last place which is "Based on the text I read in digital environments, I reveal the information that is not presented in the text.", all strategies are generally and always used by at least 40% of students.

Considering the usage percentages of problem solving strategies, 54% of the students reported that they usually and always use problem solving strategies.

#### 3.3. Findings Regarding the Third Research Question

In this section, the answer to the question "How is the usage of support strategies by students?" has been sought. Regarding this, the distribution of students' use of support strategies is shown in Table 3.

Table 3. Distribution of Students' Responses in Support Strategies

Strategy items		I never do	I rarely do	I occasionally do	I usually do	I always do
5. I take notes of important information while reading in digital environments.	f.	17	37	27	13	6
	y.	0,17	0,37	0,27	0,13	0,06
6. When reading in digital environments, I use select, copy and paste to transfer some	f.	1	11	24	32	32
information in the text to another place.	y.	0,01	0,11	0,24	0,32	0,32
7. I use features such as underlining and highlighting to identify important information	f.	27	21	27	15	10
when reading in digital environments.	y.	0,27	0,21	0,27	0,15	0,1
8. I associate important information with clues (picture, title, typeface, page number,	f.	16	20	35	19	10
etc.) while reading in digital environments.	y.	0,16	0,2	0,35	0,19	0,1
13. I use helpful resources such as online dictionaries and translations to better	f.	6	11	22	32	29
understand what I read in digital environments.	y.	0,06	0,11	0,22	0,32	0,29
14. I rephrase the thoughts in the text in my own words in order to better understand	f.	17	24	36	12	11
what I read in digital environments.	y.	0,17	0,24	0,36	0,12	0,11
16. When reading in digital environments, I scroll back and forth between pages to	f.	13	7	37	32	11
find relationships between information.	y.	0,13	0,07	0,37	0,32	0,11
17. I ask myself questions to check whether I understand what I read in digital	f.	33	24	24	14	5
environments and I answer these questions.	y.	0,33	0,24	0,24	0,14	0,05
21. I use the search or find function for information I want to find in the text I read in	f.	12	19	18	30	21
digital environments.	y.	0,12	0,19	0,18	0,3	0,21
24. After reading in digital environments, I summarize the text to learn the	f.	22	34	19	18	7
information better.	y.	0,22	0,34	0,19	0,18	0,07
28. I discuss what I read with people who learn the same language as me to check that	f.	21	30	21	18	10
I understand what I read in digital environments.		0,21	0,3	0,21	0,18	0,1

The table shows usage rate of 11 support strategies by language learners. Percentage and frequency analyzes are given in the table. For each strategy, the table shows which of the five options the students chose: "I never do, I rarely do, I occasionally do, I usually do, and I always do". Five options given for each item in the table were preferred by at least one person.

When the table is examined in detail, the support strategies that students use while reading in digital environments are as follows: "I use select, copy and paste to transfer some information in the text to another place when reading in digital environments; I use helpful resources such as online dictionaries and translations to better understand what I read in digital environments; I use the scan or find function for information I want to find in the text I read in digital environments; when reading in digital environments, I scroll back and forth between pages to find relationships between information; when reading in digital environments, I associate important information with clues (picture, title, font, page number, etc.); in order to check that I understand what I read in digital environments, I discuss what I read with people who learn the same language as me; I use features such as underlining and highlighting to identify important information when reading in digital environments; I summarize the text to learn the information better after reading it in digital environments; I restate the thoughts in the text in my own words to better understand what I read in digital environments; I take note of important information while reading in digital environments; I ask myself questions to check whether I understand what I read in digital environments and I answer these questions."

When the strategies are generally evaluated, except for the strategies in the first four places which are "I use select, copy and paste to transfer some information in the text to another place when reading in digital environments; I use helpful resources such as online dictionaries and translations to better understand what I read in digital environments; I use the scan or find function for information I want to find in the text I read in digital environments; When reading in digital environments, I scroll back and forth between pages to find relationships between information.", all strategies are generally and always used by students less than 40%.

Considering the usage percentage of support strategies, 35% of the students reported that they usually and always use support strategies.

#### 3.4. Findings Regarding the Fourth Research Question

In this section, the answer to the question "How is the usage of traditional reading strategies by students?" has been sought. Regarding this, the distribution of students' use of traditional reading strategies is shown in Table 4.

Table 4.

Distribution of Students' Responses in Traditional Reading Strategies

Strategy items		I never do	I rarely do	I occasionally do	I usually do	I always do
2. Before I start reading in digital environments, I take a general look at the text to see what the text is about.	f.	6	9	23	39	23
3. Before I start reading in digital environments, I try to guess what the content of the	y.	0,06	0,09	0,23	0,39	0,23
	f.	22	27	26	15	10
text is about. 4. I have a purpose while studying in digital environments.	y.	0,22	0,27	0,26	0,15	0,1
	f.	1	7	23	38	31
	y.	0,01	0,07	0,23	0,38	0,31
5. I take notes of important information while reading in digital environments.	f.	17	37	27	13	6
	y.	0,17	0,37	0,27	0,13	0,06
7. I use features such as underlining and highlighting to identify important information when reading in digital environments.	f.	27	21	27	15	10
	y.	0,27	0,21	0,27	0,15	0,1
8. I associate important information with clues (picture, title, typeface, page number, etc.) while reading in digital environments.	f.	16	20	35	19	10
	y.	0,16	0,2	0,35	0,19	0,1
9. I adjust my reading speed in digital environments according to the text I read.	f.	12	16	29	22	21
	y.	0,12	0,16	0,29	0,22	0,21
<ul><li>10. In digital environments, I do not read everything in the text, I read selectively.</li><li>11. When I have difficulty in understanding while reading in digital environments, I</li></ul>	f.	11	23	25	32	9
	y.	0,11	0,23	0,25	0,32	0,09
	f.	1	8	19	41	31
pay more attention to what I read.  12. I guess the meanings of unfamiliar words and expressions in the text while reading	y.	0,01	0,08	0,19	0,41	0,31
	f.	4	18	31	37	10
in digital environments.  14. I rephrase the thoughts in the text in my own words in order to better understand	y.	0,04	0,18	0,31	0,37	0,1
	f.	17	24	36	12	11
what I read in digital environments.  15. I try to picture or visualize the information in my mind in order not to forget what I	y.	0,17	0,24	0,36	0,12	0,11
	f.	9	20	27	25	19
read in digital environments.  16. When reading in digital environments, I scroll back and forth between pages to find	y.	0,09	0,2	0,27	0,25	0,19
	f.	13	7	37	32	11
relationships between information.  17. I ask myself questions to check whether I understand what I read in digital	y. f.	0,13	0,07	0,37	0,32	0,11 5
environments and I answer these questions.  18. When I realize that I do not understand something while reading in digital	y. f.	0,33 2 0,02	0,24 2 0,02	0,24 13 0,13	0,14 38 0,38	0,05 45
environments, I read it again. 19. I associate the information I read in digital environments with my own information.	y. f. y.	0,02 1 0,01	0,02 18 0,18	0,13 36 0,36	0,36 27 0,27	0,45 18 0,18
20. I associate the information I read in digital environments with the information from different sources.	f. y.	4 0,04	18 0,18	37 0,37	26 0,26	15 0,15
22. Based on the text I read in digital environments, I reveal the information that is not presented in the text.	f.	24	27	28	18	3
	y.	0,24	0,27	0,28	0,18	0,03
23. I critically analyze and evaluate what I read in digital environments.	f.	6	17	26	37	14
	y.	0,06	0,17	0,26	0,37	0,14
24. After reading in digital environments, I summarize the text to learn the information better.	f.	22	34	19	18	7
	y.	0,22	0,34	0,19	0,18	0,07
27. In order to better understand what I read in digital environments, I think about information both in the language I learned and in my mother tongue.	f.	8	23	28	27	14
	y.	0,08	0,23	0,28	0,27	0,14
28. I discuss what I read with people who learn the same language as me to check that I understand what I read in digital environments.	f.	21	30	21	18	10
	y.	0,21	0,3	0,21	0,18	0,1

The table shows usage rate of 22 traditional reading strategies by language learners. Percentage and frequency analyzes are given in the table. For each strategy, the table shows which of the five options the students chose: "I never do, I rarely do, I occasionally do, I usually do, and I always do". Five options given for each item in the table were preferred by at least one person.

When the table is examined in detail, the 7 traditional reading strategies most used by students while reading in digital environments are as follows: "When I read in digital environments, I read it again when I realize that I do not understand; I pay more attention to what I read when I have difficulty in understanding when reading in digital environments; I have a purpose when reading in digital environments; before I start reading in environments, I look at the text in general to see what the text is about; I critically analyze and evaluate what I read in digital environments; I guess the meanings of unfamiliar words and expressions in the text when reading in digital environments; I associate the information I read in digital environments with my own knowledge."

According to the table, the 7 traditional reading strategies that students use the least while reading in digital environments are as follows: "I ask myself questions and answer these questions to check whether I understand what I read in digital environments; I summarize the text to learn the information better after reading it in digital environments; I take note of important information while reading in digital environments; based on the text I read in digital environments, I reveal the information that is not presented in the text; to check that I understand what I read in digital environments, I discuss what I read with people who learn the same language as me; before I start reading in digital environments, I try to guess what the content of the text is about; I use features such as underlining and highlighting to identify important information when reading in digital environments."

It can be stated that there is a moderate level of use when it comes to other strategies.

# 3.5. Findings Related to the Fifth Research Question

In this section, the answer to the question "How is the usage of digital reading strategies by students?" has been sought. Regarding this, the distribution of students' use of support strategies is shown in Table 5.

Table 5.

Distribution of Students' Responses in Digital Reading Strategies

Strategy items		I never do	I rarely do	I occasionally do	I usually do	I always do
1. I zoom in and out to read texts more easily in digital environments.	f.	10	13	31	31	15
	y.	0,1	0,13	0,31	0,31	0,15
6. When reading in digital environments, I use select, copy and paste to transfer some information in the text to another place.	f.	1	11	24	32	32
	y.	0,01	0,11	0,24	0,32	0,32
13. I use helpful resources such as online dictionaries and translations to better	f.	6	11	22	32	29
understand what I read in digital environments.	y.	0,06	0,11	0,22	0,32	0,29
21. I use the search or find function for information I want to find in the text I read in	f.	12	19	18	30	21
digital environments.	y.	0,12	0,19	0,18	0,3	0,21
25. I do research on search engines or websites for information that comes to my mind	f.	1	10	18	41	30
about what I read in digital environments.	y.	0,01	0,1	0,18	0,41	0,3
$26.\ I$ question the reliability and accuracy of the information I come across on websites about what I read in digital environments.	f.	4	11	20	32	33
	y.	0,04	0,11	0,2	0,32	0,33

The table shows the usage rate of 6 digital reading strategies by language learners. Percentage and frequency analyzes are given in the table. For each strategy, the table shows which of the five options the students chose: "I never do, I rarely do, I occasionally do, I usually do, and I always do". Five options given for each item in the table were preferred by at least one person.

When the table is examined in detail, the digital reading strategies that students use while reading in digital environments are as follows: "I do research on search engines or websites for information that comes to mind about what I read in digital environments; I question the reliability and accuracy of the information I come across on websites about what I read in digital environments; When reading digitally, I use select, copy and paste to transfer some information from the text; I use the scan or find function for information I want to find in the text I read in digital environments; I zoom in and out to read texts more easily in digital environments."

Among the digital reading strategies, the 1st strategy (I zoom in and out to read the texts more comfortably in digital environments.) 46% of the students; 6th strategy (I use select, copy and paste to transfer some information in the text while reading in digital environments.) is used by 64% of the students; 13th strategy (I use helpful resources such as online dictionaries and translations to better understand what I read in digital environments.) is used by 61% of students; 21st strategy (I use the search or find function for an information I want to find in the text I read in digital environments.) is used

by 51% of the students; the 25th strategy (I do research on search engines or websites for the information that comes to my mind about what I read in digital environments.) is used by 71% of the students. 65% of the students stated that they usually and always use the 26th strategy (I question the reliability and accuracy of the information I come across on the websites about what I read in digital environments).

Considering the usage percentages of digital reading strategies, the percentage of students using these strategies is generally quite high. Therefore, it can be said that language learners are mostly users of digital reading strategies in their digital reading.

#### 4. CONCLUSION AND DISCUSSION

e-ISSN: 2536-4758

In this research, it has been observed that the strategies most used by students while reading in digital environments are: "Before I start reading in digital environments, I take a look at the text in general to see what the text is about; I have a purpose while studying in digital environments; when reading digitally, I use select, copy and paste to transfer some information from the text; when I have difficulty in understanding while reading in digital environments, I pay more attention to what I read; I use helpful resources such as online dictionaries and translations to better understand what I read in digital environments; when I realize that I do not understand something while reading in digital environments, I read it again; I use the scan or find function for information I want to find in the text I read in digital environments; I critically analyze and evaluate what I read in digital environments; I do research on search engines or websites for information that comes to my mind about what I read in digital environments; I question the reliability and accuracy of the information I come across on websites about what I read in digital environments.". At least 50% of all students stated that they usually and always use these strategies.

Although there are some differences in the strategies most used by the students, since different strategies were investigated in the studies of Anderson (2003, pp. 17), Omar (2014), and Jusoh and Abdullah (2015), one of the strategies most used by the students in both studies was re-reading. In Taki's (2012) study, as in the results of this study, it was seen that one of the strategies most used by students was having a purpose. In the research of Huang, Chern, and Lin (2009, pp. 17), the most frequently used individual strategies by students are translation (27.30%), dictionary (19.19%) and emphasis (10.53%). The results in the Huang, Chern, and Lin study are the same, except for the "emphasis" in this study. One of the most frequently used strategies in this research is the use of translation and dictionary. There are other studies that are consistent with the results of this study. The strategies most used by students in the Ma'rif (2018) research are having a purpose and using a dictionary, which are the most used strategies in this research. In the study of İnceçay (2013, pp. 398) and Chen (2019), reviewing, re-reading and using a dictionary were the strategies most used by language learners, as in this study.

In Oh's (2018) study to explore Korean students' strategies for research and comprehension in English, students with specific reading tasks first quickly scanned and reviewed the page, while using the Ctrl+F find function. In addition, students used strategies such as selective reading, critical evaluation, and evaluation of the reliability of information. In the same research, students used the dictionary and translation to overcome the comprehension problems created by the text and to support their reading. In this study, the use of dictionary and translation are among the most frequently preferred strategies.

The strategies that students use the least in digital environments are: "I try to guess what the content of the text is about before I start reading in digital environments; I take note of important information while reading in digital environments; I use features such as underlining and highlighting to identify important information when reading in digital environments; I restate the thoughts in the text in my own words to better understand what I read in digital environments; I ask myself questions to check whether I understand what I read in digital environments and I answer these questions; based on the text I read in digital environments, I reveal the information that is not presented in the text; after reading in digital environments, I summarize the text to learn the information better". At least 40% of the students never used these strategies and used them very little. Since Anderson (2003, pp. 17), İnceçay (2013, pp. 398), and Jusoh and Abdullah (2015) researched different strategies in the strategies that students use the least, there are some differences with this research. Despite this, in the studies of Andersoni Jusoh and Abdullah; one of the strategies that students use the least, as in this study, is asking questions to oneself and taking notes. In the research of Taki (2012) and Omar (2014), one of the least used strategies by students, as in the results of this research, is note-taking.

When the usage percentages of general strategies, problem solving strategies and support strategies are examined in the research, it is seen that language learners use problem solving strategies the most, general strategies less and support strategies the least in digital readings. The results of this study seem to be supported by other studies in the field. In Anderson's (2003, pp. 20) research, it is seen that the strategy most commonly used by EFL students learning English in online environments is problem solving strategies. The problem solving strategies used by students in Anderson's study are not all the same as in this study. However, since the problem solving strategies are repair strategies used in cases where the information given in the text is not understood (Baba Öztürk, 2020, pp. 7), it can be stated that the reason for use is the same for students in the other research and in this research.

Taki (2012, pp. 174), Omar (2014), Jusoh and Abdullah (2015, pp. 75); in their researches on the use of online reading strategies by language learners, found that students mostly use problem solving strategies, general reading strategies less, and

reading supportive strategies the least. In Taki, Omar, Jusoh and Abdullahh's studies and in this study; the most preferred strategies are the same when it comes to students' general strategy use.

There are also studies that differ from the results of this study. Huang, Chern, and Lin (2009, pp. 17) found that while students were reading four articles in digital media, they used support strategies the most (62.32%), general strategies come second (23.01%), and socio-emotional strategies come third (7,49%), and problem solving strategies come last (7.18%). Huang, Chern, and Lin's researches are experimental researches in nature. The students' use of strategy was carried out of necessity. In this study, opinions were taken from the students. In the study of İnceçay (2013, pp. 401) and Ma'rif (2018), the most frequently used strategies by students are general reading strategies, problem solving strategies come second and support strategies come last. The results of İnceçay and Ma'rif's researches are also different from this research. But this difference is in the general strategy usage. When the strategy usages of other studies are examined separately, it is seen that some of the strategies that are the same as this study are among the frequently used strategies.

It can be stated that factors such as their interests, needs and expertise also affect students' strategy use. In the study of Jusoh and Abdullah (2015, pp. 75), it was explained that students at the Faculty of Information Technologies used more support strategies such as using a dictionary and reference, as they were familiar with internet features and tools.

Considering the usage percentages of strategies specific to digital environments in the research, 46% of the students said "I zoom in and out to read texts more comfortably in digital environments.", 64% of the students said "When reading in digital environments, I use select, copy and paste to transfer some information in the text to another place.", 61% of the students said "I use helpful resources such as online dictionaries and translations to better understand what I read in digital environments.", 51% of the students said "I use the search or find function for an information I want to find in the text I read in digital environments.", 71% of the students said "I do research on search engines or websites for the information that comes to my mind about what I read in digital environments.", 65% of the students said that they usually and always use the "I question the reliability and accuracy of the information I come across on the websites about what I read in digital environments.". Therefore, according to these results, language learners use strategies specific to digital environments at a very high rate in their digital reading. This rate of use can also be seen in combination with other strategies. Among all strategies, the use of digital strategies is at a high level.

Digital environments require the use of reading strategies specific to these environments. The use of these strategies helps both to increase the efficiency in reading and to perform more successful reading. The high level of students' use of strategies specific to digital environments in this study may be due to the fact that these students frequently perform reading tasks from digital environments during the language learning process. It can be said that students' reading tasks lead them to read in digital environments, and this situation increases their use of strategies specific to digital environments and their benefit from the opportunities of digital environments.

#### Statement of Research and Publication Ethics

This article was planned and conducted as a completely original research and was sent to the relevant journal after being reported with its results. Research can be done in any symposium, congress, etc. It has not been submitted or sent to another journal for consideration.

#### **Authors' Contribution Rates**

Since this article has only one author, only one author has worked on the whole process.

# **Statement of Support**

This work was not supported by any institution or organization.

#### **Statement of Interest**

While preparing the study; there was no conflict of interest between the authors at the stages of data collection, interpretation of the results and writing of the article.

#### 5. REFERENCES

Abanomey, A. A. (2012). Do efl saudi learners perform differently with online reading? An exploratory study. Journal of King Saud University – Languages and Translation, 25, 1–11.

Afflerbach, P., Pearson, P. ve Paris, S. (2008). Clarifying differences between reading skills and reading strategies. The Reading Teacher, 61(5), 364–373.

Anderson, N.J. (2003). Scrolling, clicking and reading English: Online reading strategies in a second/foreign language. The Reading Matrix, 3(3), 1-33.

Baba Öztürk, M. (2020). Üst-bilişsel okuma stratejileri (metacognitive reading strategies). K. Kıroğlu (Ed.), inside Okuduğunu Anlama Stratejileri (Reading Comprehension Strategies) (s. 2-22). Ankara: Pegem Akademi.

Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş. ve Demirel, F. (2017). Bilimsel araştırma yöntemleri (Scientific research methods). Ankara: Pegem Akademi.

Chen, K. T-C. (2019). An exploration of efl students' use of online english reading strategies at university level. The Journal of Social Sciences Research, 5(4), 918-922.

Cho, B-Y. ve Afflerbach, P. (2017). An evolving perspective of constructively responsive reading comprehension strategies in multilayered digital text environments. In S. E. Israel (Ed.), Handbook of research on reading comprehension (2nd ed., pp. 109-134). New York, NY: Guilford Press.

Çetin, S. A. (2021). Dijital ortamlarda okuduğunu anlama becerisinin geliştirilmesi (Developing reading comprehension skills in digital environments). (Unpublished doctoral thesis). Gazi University, Ankara.

Hamer, A. B. ve McGrath, J. L. (2011). On-screen versus on-paper reading: Students' strategy usage and preferences. NADE Digest, 5(3), 25-39.

Hsiao, C. C. (2011). Reading strategy instruction on junior high school students' reading proficiency. (Unpublished master thesis). National Chung Cheng University, Taiwan.

Huang, H.-C., Chern, C.-I. ve Lin, C.-C. (2009). EFL learners' use of online reading strategies and comprehension of texts: An exploratory study. Computers & Education, 52(1), 13–26.

Inceçay, G. (2013). Metacognitive online reading strategies applied by eff students. Eğitimde Kuram ve Uygulama (Theory and Practice in Education), 9(4), 390-407.

Jusoh, Z. ve Abdullah, L. (2015). Online survey of reading strategies (OSORS): students' online reading in academic context. Malaysian Journal of Distance Education, 17(2), 67-81.

Karasar, N. (2018). Bilimsel araştırma yöntemi (scientific research method). Ankara: Nobel Publishing.

Kol, S. ve Schcolnik, M. (2000). Enhancing screen reading strategies. Equinox Publishing Ltd CALICO Journal. 18(1), 67-80.

Liu, Z. (2005). Reading behavior in the digital environment - Changes in reading behavior over the past ten years. Journal of Documentation, 61(6), 700-712.

Liu, Z. (2012). Digital reading: An overview. Chinese Journal of Library and Information Science, 5(1), 85-94.

Ma'rif, M. (2018). A survey study on students' online reading strategies Employed by the students in Islamic University of Indonesia. English Language Education Department Faculty of Psychology and Socio Culture Sciences Universitas Islam Indonesia Yogyakarta.

Mesgar, M., Bakar, N. A. ve Amir, Z. (2012). Online metacognitive reading strategies used by postgraduate ESL readers of academic texts. International Journal Of Asian Social Science, 2(10), 1779-1794.

Naumann, J. ve Salmerón, L. (2016). Does navigation always predict performance? Effects of navigation on digital reading are moderated by comprehension skills. International Review of Research in Open and Distributed Learning, 17(1), 42-59.

Oh, B-D. (2018). Exploring english online research and comprehension strategies of Korean college students. (Unpublished master thesis). Graduate School of Seoul National University, Seoul.

Omar, N. A. (2014). Online metacognitive reading strategies use by postgraduate libyan EFL students. International Scholarly and Scientific Research & Innovation, 8(7), 2281-2284.

Sheorey, R. ve Mokhtari, K. (2001). Differences in the metacognitive awareness of reading strategies among native and non-native readers. System, 29, 431-449.

Taki, S. ve Soleimani, G. H. (2012). Online reading strategy use and gender differences: The case of Iranian eff learners. Mediterranean Journal of Social Sciences, 3(2), 171-181.

Ulu, H. (2017). Türkçe dersinde ağ araştırması'na dayalı öğretim: Bir eylem araştırması. (Network research-based teaching in Turkish lessons: A research of action) (Unpublished doctoral thesis). Gazi University Institute of Educational Sciences, Ankara.

# ANNEX 1. Survey for Identifying Strategies Used in Digital Reading

The purpose of this survey is to collect information about the strategies you use when reading a text, article and web page in the language you have learned as a foreign language on "computer, tablet, e-reading device and smartphone".

STRATEGIES	I never do	I rarely do	I occasionally do	I usually do	I always do
------------	------------	-------------	-------------------	--------------	-------------

- 1 I zoom in and out to read texts more easily in digital environments.
- 2 Before I start reading digitally, I take a general look at the text to see what it's about.
- 3 Before I start reading in digital environments, I try to guess what the content of the text is about.
- 4 I have a purpose while studying in digital environments.
- 5 I take notes of important information while reading in digital environments.
- 6 When reading in digital environments, I use select, copy and paste to transfer some information in the text to another place.
- 7 I use features such as underlining and highlighting to identify important information when reading in digital environments.
- **8** I associate important information with clues (picture, title, typeface, page number, etc.) when reading in digital environments.
- 9 I adjust my reading speed in digital environments according to the text I read.
- 10 In digital environments, I do not read everything in the text, I read selectively.
- 11 When I have difficulty in understanding while reading in digital environments, I pay more attention to what I read.
- 12 When reading in digital environments, I guess the meanings of unfamiliar words and expressions in the text.
- 13 I use helpful resources such as online dictionaries and translations to better understand what I read in digital environments.
- 14 I restate the thoughts in the text in my own words to better understand what I read in digital environments.
- 15 I try to picture or visualize the information in my mind in order not to forget what I read in digital environments.
- 16 When reading in digital environments, I scroll back and forth between pages to find relationships between information.
- 17 In order to check whether I understand what I read in digital environments, I ask myself questions and answer these questions.
- 18 When I realize that I do not understand something while reading in digital environments, I read it again.
- 19 I associate the information I read in digital environments with my own knowledge (prior knowledge).
- 20 I associate the information I read in digital environments with the information from different sources.
- 21 I use the scan or find function for information I want to find in the text I read in digital environments.
- ${\bf 22} \quad \text{Based on the text I read in digital environments, I reveal the information that is not presented in the text.}$
- $23\,$   $\,\,$  I critically analyze and evaluate what I read in digital environments.
- 24 After reading in digital environments, I summarize the text to learn the information better.
- 25 I do research on search engines or websites for the information that comes to my mind about what I read in digital environments.
- 26 I question the reliability and accuracy of the information I come across on websites about what I read in digital environments.
- 27 In order to better understand what I read in digital environments, I think about information both in the language I learned and in my mother tongue.
- 28 To check that I understand what I read in digital environments, I discuss what I read with other people who learn the same language as me.