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The Effect of Understand-Answer Strategy Instruction on Reading Comprehension of Students with Learning Disabilities

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ABSTRACT

The purpose of this research is to determine the effect of the Understand-Answer Strategy on the reading comprehension skills of students with learning disabilities. The research was carried out with students diagnosed with learning disabilities attending secondary schools in Pendik, Istanbul, affiliated with the Ministry of National Education. The selected students are between the ages of 12 and 13, with two girls and one boy. The research was carried out with a single-subject design, a "Multiple probe design between subjects". The dependent variable of the study is the number of correct answers given to the reading comprehension questions in a written reading comprehension text. The independent variable of the research is the Understand-Answer Strategy. The experimental process consisted of the stages of determining the starting level, teaching the Understand-Answer Strategy, end-of-teaching evaluation, monitoring, and generalization. At the end of the study, the opinions of the students and their families were also considered. The Understand-Answer Strategy consist of activating prior knowledge, discussing the strategy, being a model, guiding practices and independent practices. At the end of the research, the opinions of students and their families were examined as social validity data. In all evaluation conditions, students were asked to read a narrative text and then answer eight reading comprehension questions. The scoring of the data was determined by the correct answers given by the students to the questions. The research findings have shown that the Understand-Answer Strategy is effective in improving the reading comprehension skills of students with learning difficulties. Furthermore, students who learned this strategy were able to provide correct answers to reading comprehension questions 1, 3, and 5 weeks after the end of the application, and it was observed that students who learned the strategy with different participants generalized their reading comprehension performance. According to the social validity findings, students and their families expressed positive views about the Understand-Answer Strategy.

Anla-Cevapla Stratejisi'nin Öğrenme Güçlüğü Olan Öğrencilerin Okuduğunu Anlama Becerisindeki Etkisi

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ÖZ

Bu araştırmanın amacı, Anla-Cevapla Stratejisi'nin öğrenme güçlüğü olan öğrencilerin okuduğunu anlama becerilerindeki etkisini belirlemektir. Araştırmanın katılımcıları ortaokula devam eden öğrenme güçlüğü tanısı almış 12-13 yaş aralığında öğrencilerdir. Araştırmada tek denekli desenlerden "denekler arası çoklu yoklama deseni" kullanılmıştır. Araştırmanın bağımlı değişkeni, öyküleyici metinlere ilişkin okuduğunu anlama sorularına verilen doğru cevap sayılarıdır. Araştırmanın bağımsız değişkeniyse Anla-Cevapla Stratejisi öğretim paketidir. Deney süreci; başlama düzeyinin belirlenmesi, Anla-Cevapla Stratejisi'nin öğretim paketinin uygulanması, öğretim sonu değerlendirme, izleme ve genelleme aşamalarından oluşmaktadır. Anla-Cevapla Stratejisi öğretimi; ön bilgileri harekete geçirme, stratejiyi tartışma, model olma, rehberli uygulamalar ve bağımsız uygulamalar aşamalarından oluşturulmuştur. Araştırmanın sonunda sosyal geçerlilik verisi olarak öğrencilerin ve ailelerinin görüşleri incelenmiştir. Tüm değerlendirme koşullarında öğrencinin öyküleyici metni okuması ve sonrasında kendisine yöneltilen sekiz okuduğunu anlama sorusunu cevaplaması istenmiştir. Verilerin puanlanmasını öğrencilerin sorulara verdikleri doğru cevaplar belirlemiştir. Araştırma bulguları, Anla-Cevapla Strateji'sinin öğrenme güçlüğü olan öğrencilerin okuduğunu anlama becerilerinde etkili olduğunu göstermiştir. Ayrıca bu stratejiyi öğrenen öğrencilerin, uygulama sona erdikten 1, 3 ve 5 hafta sonrasında okuduğunu anlama sorularına doğru cevap verdiklerini ve farklı katılımcılarla stratejiyi öğrenen öğrencilerin okuduğunu anlama performanslarını genellediği görülmüştür. Sosyal geçerlilik bulgularına göre öğrenciler ve aileleri Anla-Cevapla Stratejisine ilişkin olumlu görüş bildirmişlerdir.

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INTRODUCTION

Reading is considered a prerequisite for academic skills to make human life more meaningful (Özdemir & Baş, 2019). Reading is defined as the process of establishing meaning that occurs in a specific environment in the light of a correct technique and target, depending on the effective communication between the writer and the reader of the reading text in which prior knowledge is activated (Akyol, 2017). The most important function of reading is to provide comprehension. Comprehension is to grasp what we see and hear. Symbols come side by side and form only writings. When these symbols are brought together, if a meaning is derived from them, then reading is realized (Göğüş, 1978). Göğüş defined reading comprehension as a cognitive activity consisting of complex steps starting with the formation of words with written symbols (Perfetti & Stafura, 2014). Fluent reading is important for reading comprehension (Rasinski et al., 2011). Fluent reading is reading performed as if speaking, without spelling errors, pauses, or the need to pay attention to intonation and emphasis (Akyol, 2017). For reading fluency to be realized, it is necessary to have correct words read during reading, normal reading speed, and prosodic reading skills (Baştuğ, 2012).

Reading comprehension skills are of great importance not only for students with normal development but also for students with special needs (Eripek, 1987). Among individuals with special needs, individuals with learning disabilities are the most numerous group (Ulutaş et al., 2020). The reason for most of the difficulties faced by students with learning disabilities is that they do not have sufficient reading comprehension skills (Akçamete, 2015). Since students with learning disabilities cannot use strategies effectively, they show low academic performance in every period of their lives (Swanson & De La Paz, 1998). This problem situation faced by students with learning disabilities stems from the difficulties in the correct use of reading comprehension strategies.

The most important factor that helps reading comprehension and helps students increase their academic achievement is reading comprehension strategies (Balcı & Dündar, 2017; Özkubat et al., 2020). When international literature is examined, it is seen that the results of cognitive strategy instruction studies applied with the aim of providing reading comprehension skills to students with learning disabilities are effective (Mastropieri & Scruggs, 1997). When the results of the studies conducted on the basis of cognitive strategy instruction are examined, it is clearly seen that it is effective in the reading comprehension of students with learning disabilities (Jitendra, Cole, Hoppes & Wilson, 1998). In the literature, meta-analysis studies in which the studies applied into improving the reading comprehension skills of students with learning disabilities were examined, it was seen that the use of cognitive and metacognitive strategies was effective in reading comprehension skills (Forness et al., 1997; Gajria et al., 2007; Gersten et al., 2001; Kim et al., 2012).

Due to the COVID-19 pandemic, this study was conducted online as in-person education was disrupted. When the literature was examined, no study was found in which reading comprehension strategies were taught online to students with learning disabilities. In the literature, the development of pre-reading, during-reading, and post-reading strategies in order to improve reading comprehension is emphasized, as well as the importance of gaining strategies holistically (Özmen, 2006). While there are many studies designed with a holistic perspective in the international literature (Idol & Croll, 1987; Mastropieri & Malone, 1991; Salembier, 1999), there are a limited number of studies in the national literature (Fırat & Ergül 2020; Tülü et al., 2021). When the literature was examined, the limitation of online research and research studies involving both online and holistic perspectives created a need for the current study. Relatedly, this study aims to improve the reading comprehension skills of middle school students with learning disabilities, and the effectiveness of the Understand-Answer Strategy, which was prepared with a holistic perspective and presented online, was investigated in order to provide reading comprehension skills to middle school students with learning disabilities. In line with this general purpose, the effect of the Understand-Answer Strategy on the reading comprehension skills of students with learning disabilities, its effect on reading comprehension skills after 1, 3, and 5 weeks, its generalization to different practitioners, and student and teacher opinions about the strategy were examined.

METHOD

Research Design

In this study, a multiple probe between subjects design, one of the single-subject research methods, was used.

In order to measure the reading comprehension performance of the subjects, baseline data were collected from each of the three subjects. Baseline data were collected 44ort he first subject in three consecutive sessions. When the reading comprehension performance of the first subject showed stability, the Understand-Answer Strategy instructional package was applied to the first subject. At the end-of-instruction assessment, when the

accuracy level reached 80% and above and the data were stable, the end-of-instruction assessment was conducted by having the first subject answer the questions of the narrative texts at least three sessions in a row as in the baseline. When the end-of-instruction data of the first subject showed stability and the student's progress reached 80% and above the accuracy level, the baseline level was determined 45ort he second subject in order to evaluate his/her performance in answering reading comprehension questions by reading narrative texts in three consecutive sessions. At the same time, one session of baseline data was collected from the third subject. This process continued until the independent variable was applied to all subjects. In order to evaluate the continuity of skill acquisition at the end of the instruction, follow-up data were collected once from each subject 1, 3, and 5 weeks after the instruction. In addition, generalization data were collected with all three subjects once after the instruction in different participants and settings.

The dependent variable of the study is the number of correct answers given to the reading comprehension questions related to the narrative texts. The independent variable is the Understand-Answering Strategy teaching package.

Three students diagnosed with learning disabilities who were included in the inclusion program in secondary school classes in the Pendik district of Istanbul province participated in the study. The subjects were selected among students who a) read at least 80 words per minute, b) attended the 6th and 7th grades of secondary school, and c) regularly participated in online programs.

Development of the Understand-Answer Strategy

The Understand-Answer Strategy used to improve the reading comprehension skills of students with learning disabilities was adapted from the Solve It! Strategy, which has cognitive and metacognitive elements. Solve It! Strategy is an effective strategy for solving math problems (Chung & Tam, 2005; Karabulut, 2015; Karabulut & Özmen, 2018). Based on the high correlation between reading comprehension skills and problem-solving skills; Solve It Strategy, which is a problem-solving strategy, has been adapted as Understand-Answer Strategy to improve reading comprehension skills (Prakitipong & Nakamura, 2006; Tertemiz, 1994; Tuohimaa et al., 2008). In these adaptations, three strategy steps were removed from the Solve It! strategy and replaced with 'Comment' and 'Predict' strategies from pre-reading strategies and the 'Take Notes' strategy from during reading strategies. Solve It! The Calculate step in the Solve It! strategy was renamed and used as the 'Answering Questions' strategy from the post-reading strategies. Thus, the 7-step Understand-Answer Strategy was created (Carnine et al., 1996; Güneş, 2014; Palincsar & Brown, 1984). In addition, While teaching the Understand-Answer Strategy, the instructional phases involved activating prior knowledge, discussing the strategy, modeling, guided practice, and independent practice, which were adapted from the Self-Regulation Strategy Development Approach (Case et al., 1992).

Supports were used for students with learning difficulties to learn the Understand-Answering Strategy (Güzel-Özmen, 2011). These supporters are the Understand-Answering Strategy Monitoring Sheet, Narrative Text Sheet, and Reading Comprehension Questions Sheet. The Understand-Answer Strategy consists of seven stages. Each stage has "say, ask, and check" steps. Table 1 below shows the steps and stages of the comprehension-answering strategy.

Table 1. *Understand-Answer Strategy Steps*

1- Comment (Discuss what you know.)	Say: Tell what you know about the text title, and talk about the pictures. Ask: Did I say everything I know? Check: What did you say about the text?
2- Guess (What might he want?)	Say: Guess what can be asked about the text. Ask: Did I more or less predict the questions about the text? Check: Did I catch an important question?
3-Read the text (Read to understand.)	Say: Read the text and if you don't understand it, read it again. Ask: Have I read and understood the text? Check: Go through the Reading Comprehension questions.
4- Explain (In Your Own Words.)	Say: Present the text in your own words. Ask: What does it want me to answer? What am I looking for? Check: Does the information match the text?
5- Take Notes (Create clues with words.)	Say: Make notes in the margins of the questions with words to remember the answers. Ask: Do the words consist of what the question asks for? Check: Are the jotted-down words the answers to the questions?

6- Answering Questions (Answer the questions.)	Say: Write the answers to the question in the blanks. Ask: Did I answer all the questions? Check: Did I write everything that was asked?
7- Check (Make sure everything is correct.)	Say: Check the answers. Ask: Did I check each question? Check: Is everything correct, if not go back, and ask for help if you need help.

Understand-Answer Strategy Teaching Stages

The Understand-Answer Strategy consists of five implementation stages. The strategy steps shown in Table 1 are presented in the following steps. Activating prior knowledge stage, The student will be guided through the study's purpose, key text elements, title, visual aids, reading material, and the necessary steps to complete while answering reading comprehension questions to effectively apply the comprehension strategy (Milford & Harrison, 2010; Reid & Lienemann, 2006). Modeling stage, the practitioner will model by thinking aloud about which supports to use in which order and how to use them in all stages of the Understand-Answer Strategy and self-instruction statements through a sample text. In the modeling sessions, there will be different text examples given to the student with the text in which the researcher applies the strategy. Guided practice stage, In the first session of this stage, the student will first answer reading comprehension questions using the Understand-Answer Strategy under the guidance of the practitioner. When necessary, the practitioner will model self-instruction statements and guide the student in the implementation of the strategy steps. Independent practice. At this stage, the student is ready to use the strategy independently. The teacher's task is to observe the accuracy and consistency of the student's performance (Reid & Lienemann, 2006).

Selection of Texts

The narrative texts used in this study were selected from the Reading Comprehension Sets published by Prof. Dr. Emine Rüya ÖZMEN, who has conducted many scientific research studies in the field of special education and prepared training sets, in Ya-Pa Publications. Each of these sets contains seven narrative texts with the same theme and each narrative text has eight reading comprehension questions.

Experiment Process

In this study, baseline sessions, instructional sessions, follow-up, and generalization sessions were organized for each subject in order to improve their reading comprehension skills with the Comprehension-Response Strategy for Students with Learning Disabilities.

During the research process, firstly, interviews were conducted in the special education classroom in the school researchers attended in order to meet the students face-to-face and to obtain legal permission from their families. The implementer gave all necessary worksheets to the students in closed files before the implementation process started. Since all sessions of the study were conducted online, researchers were conducted in the study rooms where the participants had their own computers at home.

A pilot study was conducted online with one student to gain the practitioner's experience and to see if there were any flaws in the strategy package. The pilot study continued until the subject acquired the strategies.

Baseline sessions. At the beginning of the experimental period, baseline data were collected from all students at the designated times for each subject. Then, baseline data were collected from the first student at least three times in a row until the data showed stability. When the first student reached an accuracy level of 90% and above in the end-of-instruction assessment and the data were stable, baseline data were collected from the second student. When the second student reached the criterion level at the end of the instruction, baseline data were collected from the third student. No feedback or correction was given to the students during baseline collection. Baseline data continued to be collected until stable data were obtained in three consecutive sessions. The baseline sessions were organized one-on-one online at each student's home computer.

Teaching sessions. The following section provides information about the implementation of the Understand-Answer Strategy and the instructional sessions. After obtaining the stable data at baseline levels, the Understand-Answer Strategy was implemented. The strategy was continued until the students answered 7 out of 8 reading comprehension questions correctly. The days and hours of applying the strategy to the students are shown in Table 2.

Table 2. *Subjects' Starting Time of Work Every Weekday*

	Mobilizing Preliminary Information	Discussion	Modeling	Guided Practices	Standalone Applications
Subject 1	12.00	12.00	12.00	12.00	12.00
Subject 2	12.00	12.00	12.00	12.00	12.00
Subject 3	12.00	12.00	12.00	12.00	12.00

Instructional sessions were applied to each student for 30 minutes every day until the end of the instructional phases. The study was completed in a total of 3 months. In the Understand-Answer Strategy instructional process, the activation of the prior knowledge phase for Subject 1 lasted three sessions 90 minutes, the discussion phase lasted three sessions 90 minutes, the modeling phase lasted five sessions 150 minutes, the guided practice phase lasted three sessions 90 minutes, and the independent practice phase lasted three sessions 90 minutes. For Subject 2, the activation of the prior knowledge phase lasted three sessions 90 minutes, the discussion phase lasted three sessions 90 minutes, the modeling phase lasted five sessions 150 minutes, the guided practice phase lasted four sessions 120 minutes, and the independent practice phase lasted three sessions 90 minutes. For Subject 3, the activation of the prior knowledge phase lasted three sessions 90 minutes, the discussion phase lasted three sessions 90 minutes, the modeling phase lasted five sessions 150 minutes, the guided practice phase lasted three sessions 90 minutes, and the independent practice phase lasted three sessions 90 minutes.

In the experimental process, 17 sessions of 8 hours and 30 minutes were spent for Subject 1, 18 sessions of 9 hours for Subject 2, and 17 sessions of 8 hours and 30 minutes for Subject 3. The number of teaching sessions applied to the students in the experimental process is shown in Table 3.

Table 3. *Number of Instruction Sessions Applied to Students*

Instruction Sessions	Subject 1	Subject 2	Subject 3
Developing and activating background knowledge	3	3	3
Discussion	3	3	3
Modeling	5	5	5
Supporting the strategy	3	4	3
Independent Practice	3	3	3
Total	17	18	17

Follow-up sessions. In this study, the follow-up sessions were conducted 1, 3, and 5 weeks after the study ended. The follow-up sessions were conducted in the same way as the baseline sessions.

Generalization sessions. In the generalization session of this study, the pretest-posttest method was used. The generalization session was conducted online by the students and the special education teacher at the students' school in their own homes.

Data Collection

In this study, efficacy, reliability data, and social validity data were collected.

Collecting effectiveness data. Assessment was made to determine the correct answers of the students to the reading comprehension questions at the baseline, at the end of the instruction, and at the monitoring and generalization phases. Giving the desired answers to the questions was accepted as the correct answer, giving answers other than the requested information or leaving them blank was accepted as the wrong answer. Leaving it blank was accepted as an incorrect answer. The number of correct answers was determined by looking at the Reading Comprehension recording chart. Follow-up and generalization data were collected and scored in the same way.

Collecting reliability data. In the research process, two types of data were collected: inter-rater reliability data and implementation reliability data. The reliability data collection process was completed by numbering the baseline, end-of-instruction, follow-up, and generalization sessions separately , which was followed by monitoring them through a random assignment table. Inter-observer and treatment reliability data were collected in at least 30% of the sessions.

Collecting inter-observer reliability data. First of all, the observer of the study was informed about the "Understand-Answer Strategy" and the process followed in the teaching sessions. The application videos were

watched by an expert with three years of experience in the field of special education and observer reliability data were collected by marking them on the Observer Reliability Record Form.

Collection of implementation reliability data. In this study, the observer examined whether the implementation took place in line with the plans. In this regard, the observer watched the teaching sessions conducted by the implementer, and the data obtained were recorded in the Implementation Reliability Form.

Collection of social validity data. The Student Social Validity Questionnaire was administered to determine students' opinions about the Understand-Answer Strategy. Students were told that they could ask anything they did not understand in the survey questions.

Data Analysis

In this section, the effectiveness, reliability, and social validity data obtained in the study are analyzed.

Analysis of effectiveness data. The data of teaching reading comprehension to students with learning disabilities using the Understand-Answer Strategy were shown with a line graph and the data were analyzed visually. Figure 1 below shows the number of sessions on the horizontal axis and the number of correct answers on the vertical axis. While analyzing the data on reading comprehension skills, the level of the data obtained at the baseline level was compared with the level of the data obtained at the end of the instructional practices. According to the baseline level, the increase in the level of data at the end of the implementation of the independent variable revealed the effect of the applied strategy.

Analysis of reliability data. In this study, 2 reliability data were collected. These are inter-observer reliability data and implementation reliability data. In the following section, the analysis of the inter-observer reliability data and the analysis of the implementation reliability data will be presented.

Analysis of inter-rater reliability data. Inter-observer reliability was calculated by multiplying the number obtained by dividing the total agreement of the researcher and the observer by the sum of the agreement and disagreement by 100 (House, House & Campbell, 1981). The coefficient of the inter-rater reliability data obtained was found to be approximately 90%.

Analysis of implementation fidelity data. Implementation reliability data were generated by observing the videos recorded by the computer with video and audio for the baseline, post-instruction, follow-up, and generalization sessions. First of all, the observer was informed about how to use the reliability forms. Implementation reliability was obtained by calculating the percentage of the observer's practitioner behaviors divided by the planned practitioner behaviors (Billingsley, White & Munson, 1980). Implementation reliability data was found to be 95%.

Analysis of social validity data. The data obtained from the Student and Family Social Validity questionnaires were analyzed qualitatively and the data obtained as a result of the analysis were interpreted in the findings section.

FINDINGS

The baseline level, post-instruction, and follow-up findings regarding the subjects' levels of answering reading comprehension questions by reading narrative texts are shown in Figure 1.

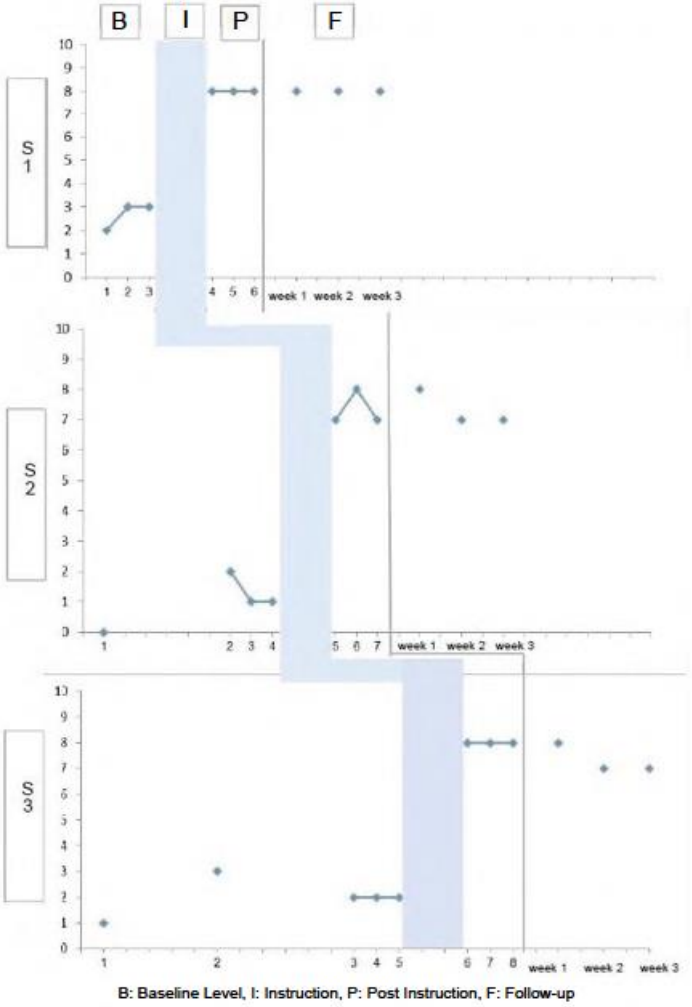

Figure 1. *Baseline level post-instruction, and follow-up findings regarding the subjects' levels of answering reading comprehension questions by reading narrative texts*

The first subject, at the baseline level, answered at least 2 and at most 3 correct answers to the 8-question text exercises, which included answering reading comprehension questions by reading narrative texts in three consecutive sessions. After the Understand-Answer Strategy instruction, he answered all 8 questions correctly.

The second subject, at the baseline level, answered at least 0 and at most 2 questions correctly in the 8-question text exercises involving answering reading comprehension questions by reading narrative texts for four consecutive sessions. The baseline data taken at the beginning of the experimental period and the baseline data taken before the instruction did not differ. After the Understand-Answer Strategy instruction, the students answered at least 7 and at most 8 questions correctly.

The third subject, at the baseline level, answered at least 1 and at most 3 questions correctly in the 8-question text studies, which included answering reading comprehension questions by reading narrative texts for five consecutive sessions. The baseline data taken intermittently and the baseline data taken before the instruction did not differ. After the Understand-Answer Strategy instruction, he answered all 8 questions correctly and answered all questions correctly.

As a result, there is a difference between the baseline level and the number of correct answers given by all three subjects in the 8-question text studies involving answering reading comprehension questions by reading narrative texts after the Understand-Answering Strategy instruction. As seen in Figure 1, the level of the data obtained at the end of the instruction was higher than the baseline level in all subjects. All three subjects met the 80% accuracy criterion at the end of the instruction. This progress was not observed before the implementation of the independent variable but after the implementation of the independent variable. Therefore, the Understand-Answer Strategy was found to be effective in teaching the subjects to answer reading comprehension questions by reading narrative texts.

Findings and Interpretation of the Effect of Understand-Answer Strategy Instruction on the Reading Comprehension Skills of Students with Learning Disabilities after 1, 3, and 5 Weeks

Follow-up sessions were conducted one, three, and five weeks after the end of the studies on answering reading comprehension questions by reading narrative texts with the Understand-Answer Strategy instruction to determine whether the student's ability to answer reading comprehension questions was retained.

The first subject answered 8, 8, and 8 text questions correctly after one week, three weeks, and five weeks, respectively, in the follow-up sessions held after the instruction. There was no decrease in the reading comprehension questions answered by the subject in the follow-up sessions compared to the end of the instruction.

The second subject answered 8, 7, and 7 text questions correctly after one week, three weeks, and five weeks, respectively, in the follow-up sessions after the instruction.

The third subject answered 8, 7, and 7 text questions correctly after one week, three weeks, and five weeks, respectively, in the follow-up sessions conducted after the instruction.

Findings and Interpretation of the Generalization of the Understand-Answer Strategy to Different Participants by Students with Learning Disabilities

Generalization sessions were organized in order to determine whether students with learning disabilities could perform these skills with different participants in the studies to improve their reading comprehension skills with Understand-Answering Strategy instruction. In the generalization session of this study, the pretest-posttest method was used. The findings related to the generalization sessions organized with different participants and in different environments are given in the following section. The findings related to the generalization session are presented in Figure 2.

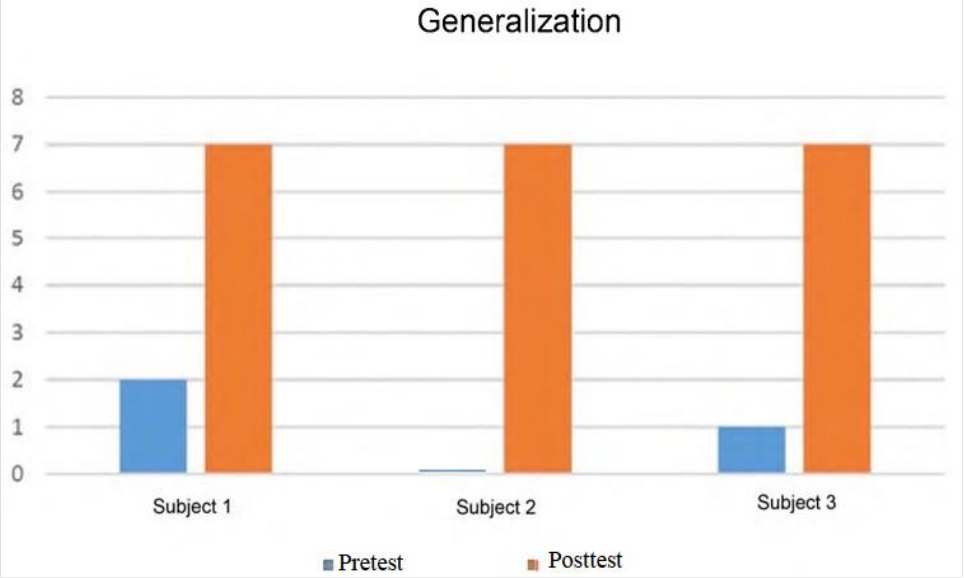

Figure 2. Generalization data of subject 1, subject 2 and subject 3

When Figure 2 is examined, it is seen that when different participants were given the instruction to read the text in front of the subjects and answer the questions, all three of the subjects performed 87.5% in answering the reading comprehension questions correctly using the Understand-Answer Strategy.

Findings and Interpretation of Students' Opinions Regarding Understand-Answer Strategy Instruction

In order to determine the social validity of this study, the "Social Validity Student Questionnaire" was administered to the subjects at the end of the teaching activities. The opinions of the subjects about "Understand-Answer" are presented below.

Table 4. *Students' responses to the items in the social validity questionnaire*

Articles	Never	Sometimes	Always
1) The Understand-Answer Strategy helps me answer Reading Comprehension questions			3
2) From now on, I will use the Understand-Answer Strategy when answering texts in Turkish lessons			3
3) The Understand-Answer Strategy was very easy to use			3
4) I had a lot of fun learning how to use the Understand-Answer Strategy		1	2
5) I liked the worksheets we used while learning the Understand-Answer Strategy			3
6) Understand-Answer Strategy teaching lessons helped me to understand the strategy easily		1	2
7) I had a lot of fun using the steps in the Understand-Answer Strategy		2	1
8) The steps in the Understand-Answer Strategy helped me a lot in answering Reading Comprehension questions		1	2
9) Thinking aloud while practicing the Understand-Answer Strategy was very useful for me			3
10) I recommend the Understand-Answer Strategy to my friends who have difficulty answering Reading Comprehension questions			3

Findings and Interpretations Regarding the Opinions of Families on Understand-Answer Strategy Instruction

In order to determine the social validity of this study, the "Family Social Validity Questionnaire" was administered to the families at the end of the teaching activities. The opinions of the families about "Understand-Answer" are presented below.

Table 5. *Families' reactions to the items in the social validity questionnaire*

Articles	Never	Rarely	Sometimes	Usually	Always
1) My child completes the Reading Comprehension tasks by reading the narrative texts I have assigned and answering the Reading Comprehension questions				1	2
2) My child asks for less help from me when answering Reading Comprehension questions				2	1
3) My child took less time to answer Reading Comprehension questions				1	2

DISCUSSION, CONCLUSION, RECOMMENDATIONS

This study investigated whether the Understand-Answer Strategy is effective on the reading comprehension skills of students with learning disabilities. The first finding of the study demonstrated that the Comprehension-Answering Strategy is effective on the reading comprehension skills of students with learning disabilities. An increase was observed in the number of correct answers to the reading comprehension questions of the narrative texts in all subjects.

The Understand-Answer Strategy includes seven steps. One of these steps is "Solve It!" which involves the effect of adaptations from the Solve It! strategy steps. These are Read, Explain, Visualize, Visualize, Theorize, Assume, Calculate, Check (Montague, 1992). While modifield the Understand-Answer Strategy, 3 steps were removed from the Solve It! Strategy, 3 steps were removed. These steps are 'Visualize', which is used to create a picture or a diagram, 'Theorize', which is used to use a plan to solve the problem, and 'Assume', which is used to make a rough estimate of the answers. The reason for removing these steps is to replace them with one each of the pre-reading, during-reading, and post-reading strategy steps to form the Understand-Answer Strategy, which has a total of 7 strategy steps.

The first step of the Understand-Answer Strategy is the 'Comment' step. The process of reading comprehension involves certain stages in itself. Interpretation skill is required to grasp the meaning. Interpretation refers to the individual's expression and explanation with his/her own words and sentences (Güneş, 2014). In this step, students were expected to comment on the title of the text and the pictures in the

reading passage with their own sentences. Predicting is a strategy based on making predictions about what will happen in a text or text section by utilizing various activities before reading a text or text section in general (Palincsar & Brown, 1984). In the Understand-Answer Strategy, the 'Guess' step was added and students were allowed to make predictions by talking to themselves about the questions that might come about the text after making comments. Note-taking is an important strategy used to activate the reader in informative texts. This strategy allows the reader to pay attention to the message the author wants to convey and at the same time to evaluate what information is important and should be recorded (Carnine et al., 1996). The 'Note-taking' strategy was added to the Understand-Answer Strategy to create clues with words. Solve It! The name of the Calculate step in the Solve It! strategy was changed and used in the Understand-Answer Strategy as Answering Questions. When the result of the finding that the comprehension strategy was effective in teaching the subjects who participated in the study to answer reading comprehension questions by reading narrative texts is considered, it is understood that these adaptations were effective.

In the Understand-Answer Strategy, as in the Solve It! Strategy, Say, Ask, and Check' metacognitive strategies were used. In this study, self-monitoring, one of the self-regulation strategies, was used as a metacognitive strategy. Self-monitoring helps students to follow the strategy steps accurately and completely and to follow which task to do in which step while solving problems and thus to control themselves (Montague, 2007). With the help of the Understand-Answer Strategy Tracing Sheet, students were able to follow the strategy steps easily. Putting + after each step helped them see the steps performed and learn the strategy steps. Thus, they were able to monitor, control, and evaluate themselves.

In addition, after the implementation of the Understand-Answering Strategy, students started to make much better comments during the teaching process compared to the beginning. Their prediction skills improved. They started to underline important words while reading narrative texts. After reading the narrative text, they started to explain the text in their own words. They gained writing skills by taking short notes on the text paper and the question paper with important information. At the baseline level, the subjects did not feel the need to check or go back after reading the text and answering the questions, but after the end of the instruction, they started to check all the questions. If there were any questions that they thought were missing or incorrect, they learned to go back to the text and find the correct answers.

In the "Activating Prior Knowledge" stage of self-regulation instruction, students were taught what the important words in the narrative texts might be and how to underline keywords. In the "Discussing the Strategy" stage, students were taught what to do in which step, the purpose and importance of the strategy, the strategy stages and steps, and what the tracing sheet is for. Then, the strategy steps were presented to the students through modeling, guided, and independent practice stages. As stated in the literature, in the "Modeling, Guided Implementation, Independent Implementation" stages, the teacher's modeling of the applied strategy steps, gradually reducing the teacher's guidance and asking students to implement the strategy independently, and the criterion-based nature of these stages play a role in students' becoming independent in the implementation of strategy steps (Case et al, 1992; Cassel & Reid, 1996; Karabulut & Özmen, 2018; Karabulut et al., 2021; Karabulut & Baran, 2021; Montague, 2008; Montague & Dietz, 2009).

The presentation of the Understand-Answer Strategy according to the stages of the Self-Regulation Strategy Development Approach enabled students with learning difficulties to internalize the strategy. In this way, it is thought to have a role in increasing their correct answers to reading comprehension questions. In addition, in the Understand-Answer Strategy, the subjects were given the Understand-Answer Strategy Monitoring Sheet as support in cognitive strategy instruction in order to internalize self-instruction and become independent in the strategy. The Understand-Answer Strategy Monitoring Sheet helped the students to monitor themselves and learn the strategy steps by marking the steps they went through while reading the narrative text and answering the questions.

The second finding of the study was that the Understand-Answer Strategy maintained its effect on the reading comprehension skills of students with learning disabilities after 1, 3, and 5 weeks. The first subject achieved 100% success by answering 8 questions correctly in all three follow-up sessions. The second

subject achieved 91.6% success by answering 8, 7 and 7 questions correctly in the three follow-up sessions, respectively. The third subject achieved 91.6% success by answering 8, 7, 7 questions correctly in the three follow-up sessions. Thus, the studies conducted to ensure retention are consistent with the retention findings of other studies conducted with strategy teaching (Coşgun Başar, 2019; Doğanay Bilgi, 2009; Fırat, 2017; Güldenoğlu & Kargın, 2012; Özbek, 2019; Vural, 2019).

In addition, the adapted Solve It! Strategy, which is used in problem-solving skills organized from the Adaptive Solve It! Strategy is also consistent with the retention data (Karabulut & Özmen, 2018). The Understand-Answer Strategy may have been effective in ensuring retention in the self-regulation strategy development approach offered in the teaching process for students with learning disabilities to read the reading passage and answer the reading comprehension questions.

The third finding of the study was that students with learning disabilities generalized the Understand-Answer Strategy to different participants. In the generalization session conducted online with the special education teacher at the school where the students were educated, all three subjects answered 7 questions correctly and achieved 87.5% success. The findings obtained are similar to the generalization findings of Case et al.'s (1992) research on students with learning disabilities using cognitive strategies.

Although it was aimed to generalize to different environments and different text types before the implementation process started, COVID-19, which affected the world, caused a break in face-to-face education, and the goals for generalization to different environments and different types of texts could not be realized due to the closure measures during the implementation process. It is considered important to generalize the Understand-Answer Strategy created for reading comprehension to other text types, so this situation is seen as one of the limitations of the research.

The fourth finding of the study is that the students expressed positive opinions after the training provided with the Understand-Answer Strategy. The subjects stated that the Understand-Answer Strategy helped them while answering reading comprehension questions, that they would use this strategy while answering reading comprehension questions from now on, that it was very easy to use the Understand-Answer Strategy, that they had fun while learning the strategy, and that they liked the worksheets used in teaching, They stated that the strategy teaching lessons enabled them to learn the strategy easily, that they had a lot of fun while using the strategy steps and that the steps were very helpful, that thinking aloud while applying the strategy was very useful for them, and finally that they would recommend the Understand-Answer Strategy to their friends who had difficulty in reading comprehension. These findings show that strategy instruction is not only effective for students with learning disabilities who participated in the study but also positive in terms of social validity.

The last finding of the study was that after the training with the Understand-Answer Strategy, the mothers of three of the subjects responded positively to the survey questions. The parents of the subjects stated that their children asked for less help with reading comprehension questions while doing text studies, that their children's time to answer reading comprehension questions was shorter, and that they completed their homework when they assigned text studies to their children. In addition, one of the mothers said that they would definitely like to participate if further research is conducted. These findings show that strategy instruction was effective for the students with learning disabilities who participated in the study and that the opinions of the families were positive in terms of social validity.

The study's findings suggest that teachers working with students with learning disabilities should employ multi-component strategies that encompass pre-reading and post-reading activities. Additionally, teachers should utilize the Understand-Answer Strategy demonstrated in this study, and model their reading comprehension instruction through thinking aloud and employing supports tailored to the nature of cognitive strategy instruction. The Understand-Answer Strategy can be tested in further studies with different subject groups, with different types of texts, in the form of small-group teaching.

As a result, this study showed that students with learning disabilities learning the steps and stages of

the Understand-Answer Strategy with the Self-Regulation Strategy Development Approach was effective in the subjects' correct use of the necessary strategies while reading narrative texts and their correct answers to reading comprehension questions. The follow-up sessions conducted 1, 3, and 5 weeks after the end of the instruction revealed that they maintained their reading comprehension performances and generalized their performances to different practitioners. The interviews also indicated that the students' and parents' opinions about the Understand-Answer Strategy were promising.

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GENİŞLETİLMİŞ ÖZET

Giriş: Okuma, insan yaşamını daha anlamlı hale getirmek için akademik becerilerin temelinde olan bir ön koşul olarak düşünülmektedir (Özdemir ve Baş, 2019). Okuma, ön bilgilerin harekete geçirildiği okuma parçasını yazan ve bu metni okuyan arasındaki etkin iletişime bağlı, doğru bir teknik ve hedef ışığında, belirli bir ortamda meydana gelen anlam kurma süreci olarak tanımlamıştır (Akyol, 2017). Okuduğunu anlama becerisi sadece normal gelişim gösteren öğrenciler için değil özel gereksinimli öğrenciler içinde büyük bir önem ifade etmektedir (Eripek, 1987). Özel gereksinimli bireyler arasında öğrenme güçlüğü olan bireyler sayıca en fazla olan gruptur (Ulutaş vd., 2020). Öğrenme güçlüğü olan öğrencilerin karşılaştıkları çoğu zorluğun sebebi okuduğunu anlama becerilerine yeteri kadar sahip olmamalarıdır (Akçamete, 2015). Okuduğunu anlamaya yardımcı olan ve öğrencilerin akademik başarılarının artmasına

yardımcı olan en önemli etmen okuduğunu anlama stratejileridir (Balcı ve Dündar, 2017). Uluslararası alanyazında bütüncül bakış açısıyla desenlenen çok sayıda araştırmaya rastlanılırken (Idol ve Croll, 1987; Mastropieri ve Malone, 1991; Salembier, 1999) ulusal alanyazında sınırlı sayıda araştırma bulunmaktadır (Fırat ve Ergül 2020; Tülü vd., 2021). Alanyazın incelendiğinde çevrimiçi yapılan araştırmaların sınırlılığı hem de hem de bütüncül bakış açısını içeren araştırmaların sınırlılığı böyle bir araştırmaya gereksinim oluşturmuştur. Bu araştırmada öğrenme güçlüğü olan ortaokul öğrencilerin okuduğunu anlama becerilerini geliştirmesi hedeflenmiş ve öğrenme güçlüğü olan ortaokul öğrencilerine okuduğunu anlama becerilerini kazandırmak için bütüncül bir bakış açısıyla hazırlanan ve çevrimiçi sunulan Anla-Cevapla Stratejisi'nin etkililiği araştırılmıştır. Bu genel amaç doğrultusunda; Anla-Cevapla Stratejisi öğrenme güçlüğü olan öğrencilerin okuduğunu anlama becerileri üzerinde etkisine, okuduğunu anlama becerileri üzerindeki etkisini 1, 3 ve 5 hafta sonra sürdürmesine, farklı uygulamacılara genellemesine ve stratejiye ilişkin öğrenci ve öğretmen görüşlerine bakılmıştır.

Yöntem: Bu araştırmada tek denekli araştırma yöntemlerinden denekler arası çoklu yoklama modeli kullanılmıştır. Araştırmanın bağımlı değişkeni; öyküleyici metinlere ilişkin okuduğunu anlama sorularına verilen doğru cevap sayısıdır. Bağımsız değişkeni ise Anla-Cevapla Stratejisi öğretim paketidir. Araştırmaya İstanbul ili Pendik ilçesinde bulunan ortaokul sınıflarında kaynaştırma programına dahil edilen öğrenme güçlüğü tanılı üç öğrenci katılmıştır. Denekler a) Dakikada en az 80 kelime okuyan, b) Ortaokul 6. ve 7. sınıfına devam eden, c) Çevrimiçi programlarda düzenli olarak derse katılım sağlayan öğrenciler arasından seçilmiştir. Öğrenme güçlüğü olan öğrencilerin okuduğunu anlama becerilerini geliştirmek için kullanılan Anla-Cevapla Stratejisi bilişsel ve üstbilişsel öğeleri olan stratejilerden Bunu Çöz! (Solve It!) Stratejisinden uyarlanmıştır. Bunu Çöz! Stratejisi matematik problemlerini çözmede etkili bir stratejidir (Chung ve Tam, 2005; Montague, 2000; Karabulut, 2015; Karabulut ve Özmen, 2018). Bu araştırmada kullanılan öyküleyici metinler özel eğitim alanında birçok bilimsel araştırma yapmış ve eğitim setleri hazırlamış olan Prof. Dr. Emine Rüya ÖZMEN'in Ya-Pa Yayınlarında çıkarmış olduğu Okuduğunu Anlama Setlerinden seçilmiştir. Öğrenme güçlüğü olan öğrencilere Anla-Cevapla Stratejisi'yle okuduğunu anlama becerilerini geliştirmek için her denekte başlama düzeyi oturumları, öğretim oturumları ve anla, izleme ve genelleme oturumları düzenlenmiştir. Öğrenme güçlüğü olan öğrencilere Anla-Cevapla Stratejisi'yle okuduğunu anlama becerilerini geliştirmek için her denekte başlama düzeyi oturumları, öğretim oturumları, izleme ve genelleme oturumları düzenlenmiştir. Bu araştırmada etkililik, güvenirlilik verileri ve sosyal geçerlilik verileri toplanmıştır. Elde edilen veriler etkililik, güvenirlik ve sosyal geçerlilik başlıkları altında analiz edilmiştir.

Bulgular: Araştırmaya katılan deneklerin üçünde başlama düzeyi ile Anla-Cevapla Stratejisi öğretimi sonrasında öyküleyici metinlerin okuyarak okuduğunu anlama sorularını cevaplama içeren 8 soruluk metin çalışmalarında verdiği doğru cevap sayılarında fark bulunmaktadır. Üç denek de öğretim sonunda belirlenen %80 doğruluk ölçütünü karşılamıştır. Bu nedenle, araştırmaya katılan deneklerin öyküleyici metinleri okuyarak okuduğunu anlama sorularını cevaplama öğretiminde Anla-Cevapla Stratejisi etkili bulunmuştur. Anla-Cevapla Stratejisi öğretimi ile öyküleyici metinlerin okuyarak okuduğunu anlama sorularını cevaplama çalışmaları bittikten 1, 3 ve 5 hafta sonra öğrencinin, okuduğunu anlama sorularını cevaplama becerisine ilişkin kalıcılığın sağlanıp sağlanmadığını belirlemek için izleme oturumları yapılmıştır. Deneklerin üçünde 1, 3 ve 5 hafta sonra öğretim sonuna göre izleme oturumlarında cevapladıkları okuduğunu anlama sorularında bir azalma olmamıştır. Öğrenme güçlüğü olan öğrencilerin Anla-Cevapla Stratejisi öğretimi ile okuduğunu anlama becerilerinin geliştirilmesi çalışmalarında bu becerileri farklı katılımcılarla gerçekleştirip gerçekleştiremeyeceklerini belirlemek amacıyla genelleme oturumları düzenlenmiştir. Yürütülen bu çalışmanın genelleme oturumunda, öntest- sontest yöntemi kullanarak gerçekleştirilmiştir. Farklı katılımcının deneklere önündeki metni oku ve soruları cevapla yönergesi verildiğinde Anla-Cevapla Stratejisini kullanarak okuduğunu anlama sorularını doğru cevaplamada deneklerin üçünde performansları %87.5 olarak gerçekleştirdikleri görülmüştür. Sosyal geçerlilik verilerini incelemek için yapılan öğrenci ve veli görüşmeleri Tablo 4 ve Tablo 5'te verilmiş olup Anla-Cevapla Stratejiyle alakalı olumlu görüşler geliştirdikleri görülmüştür.

Sonuç, Tartışma ve Öneriler: Bu araştırma öğrenme güçlüğü olan öğrencilerin Kendini Düzenleme Stratejisi Gelişimi Yaklaşımıyla Anla-Cevapla Stratejisi basamak ve aşamalarını öğrenmelerini, deneklerin öyküleyici metinleri okurken gereken stratejileri doğru şekilde kullanmaları ve okuduğunu anlama sorularına doğru cevaplamalarında etkili olduğunu göstermiştir. Öğretim bittikten 1, 3 ve 5 hafta sonra yapılan izleme oturumlarında okuduğunu anlama performanslarını sürdürdükleri ve farklı uygulamacılara performanslarını genellediklerini göstermiştir. Yapılan görüşmelerde Anla-Cevapla Stratejisi ile ilgili öğrenci ve aile görüşlerinin olumlu olduğunu gösterir niteliktedir. Araştırma bulguları doğrultusunda öğrenme güçlüğü olan öğrencilerle çalışan öğretmenlere okuma öncesi anı ve sonrasını içeren çok ögeli stratejileri kullanmaları, okuduğunu anlama öğretimlerinde bilişsel strateji öğretimin doğasına uygun olan yüksek sesle düşünme ve destekleyiciler kullanarak model olmaları önerilebilir. Anla-evapla Stratejisi farklı denek gruplarına farklı tür metinlere, küçük grup öğretimi şeklinde ileri araştırmalarda denenebilir.