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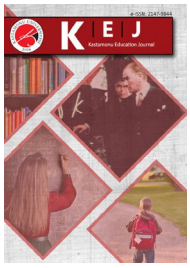

|Research Article/ Araştırma Makalesi|

# A Different Technic in The Teaching of Reading Comprehension Strategy: Self-Regulated Strategy Development Model

# Okuduğunu Anlama Stratejisi Öğretiminde Farklı Bir Uygulama: Öz-Düzenlemeli Strateji Gelişimi Modeli [1]

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**Keywords**
1. Self-regulated strategy development
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## Abstract

*Purpose:* In the reading comprehension strategy teaching which starting with Durkin, how strategies are taught are as important as the strategy. One of the application that used in strategy instruction is the "Self-Regulated Strategy Development (SRSD)" model which developed by Harris and Graham. This model, which was developed for the development of writing skills and applied to students with more learning disabilities, has started to be applied over time with reading skills and students without any disabilities. Since the use of the model in the reading area is new, information about the model should be revealed in detail. For this reason, it is aimed to describe in detail the usage of the SRSD model in the teaching of comprehension.
*Design/Methodology/Approach:* The document examination method from qualitative research methods was used in the research.
*Findings:* As a result, it was found that SRSD model was used to develop different skills with different groups. It has been seen that the SRSD model was used in literary works to improve writing, reading, metacognition, and mathematics skills. Despite the fact that SRSD has been addressed with an increasing number of studies abroad in the field of strategy teachings, the finding that there is not much work on this area in Turkey.
*Highlights:* This model, which was originally developed for teaching writing, has been applied in the field of reading in recent years. It is a model that allows students to control their own reading comprehension process. It supports the student in this process and guides his/her understanding.

## Öz

*Çalışmanın amacı:* Durkin ile başlayan okuduğunu anlama stratejisi öğretiminde, öğretilen strateji kadar stratejilerin nasıl öğretildiği de önemlidir. Strateji öğretiminde kullanılan modellerden biri Harris ve Graham tarafından geliştirilen "Öz-Düzenlemeli Strateji Gelişimi (ÖDSG)" modelidir. Yazma becerilerinin geliştirilmesi amacıyla hazırlanan ve daha çok öğrenme yetersizliği olan öğrenciler üzerinde uygulanan bu model, zamanla okuma becerisi ve herhangi bir yetersizliği olmayan öğrenciler üzerinde uygulanmaya başlanmıştır. Modelin okuma alanında kullanımı yeni olduğu için model ile ilgili bilgilerin detaylı olarak ortaya konmasını gerekmektedir. Bu nedenle araştırmada, ÖDSG modelinin okuduğunu anlama öğretiminde kullanımının detaylı bir şekilde incelenmesi amaçlanmaktadır.

*Materyal ve Yöntem:* Araştırmada nitel araştırma yöntemlerinden doküman incelemesi yöntemi kullanılmıştır.

*Bulgular:* Araştırmada ÖDSG modelinin farklı gruplarda ve farklı becerileri geliştirmek için kullanıldığı bulgusuna ulaşılmıştır. Modelin yazma, okuma, üst biliş ve matematik becerilerini geliştirmeye yönelik çalışmalarda kullanıldığı görülmüştür. Model, okuduğunu anlama stratejisi öğretiminde yurt dışı çalışmalarda artan bir şekilde kullanılsa da Türkiye'de yeterince kullanılmamaktadır.

*Önemli Vurgular:* Başlangıçta yazı öğretimi için geliştirilen bu model son yıllarda okuma alanında uygulanmaya başlanmıştır. Öğrencilerin kendi kendilerine okuduğunu anlama sürecini kontrol etmelerini sağlayan bir modeldir. Öğrenciyi bu süreçte destekleyerek anlamasına rehberlik yapmaktadır.

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## INTRODUCTION

In today's technology world, the number of produced information is increasing day by day. With the increase in information, the ways of accessing information are also increasing and the individual can reach the information when they want much more easily than in the past. However, the use of information depends on how well the source of information is understood. Understanding written texts, in particular, requires a good reading comprehension skill. The concept of reading comprehension has an important role in human life and educational activities. For this reason, studies on reading comprehension maintain its importance from past to present. So that researches on the basis of countries have been quite remarkable in recent years. The increasing importance given to exams such as PISA and PIRLS are one of the indicators of this.

Reading is a mental process that requires to construct meaning as a result of interaction with the text (Akyol, 2008). This process includes three key elements. These are the reader, the text and the activity (Snow, 2002). From these elements, the reader takes an active role in the meaning-making process to construct meaning. It interacts with the text and takes part in a number of activities in the interaction process. These activities of the reader are important practices that enable to construct meaning.

Reading isn't a random process (Duffy & Roehler, 1987). Reading is an active process and the reader performs many activities in this reading process (Akyol, 2008; Pressley, 2002). These activities which carried out before, during and after reading have a very important position for comprehension (Hilden & Pressley, 2007). These practices, which are done before, during or after reading and aiming to provide comprehension, are called reading comprehension strategies (Duffy & Roehler, 1987: Karatay, 2014). Comprehension strategies can be defined as the conscious, deliberate and flexible plans that readers use and organize in various texts to achieve a certain purpose (Duffy & Roehler, 1987; Dole, Duffy, Roehler, & Pearson, 1991; Lenski & Nierstheimer, 2002). Practices such as summarizing, determining the main idea, determining the author's purpose, using prior knowledge can be given as examples of reading comprehension strategies.

The active reading habits of good readers don't develop spontaneously in poor readers. Weak readers mostly expect external guidance (Akyol, 2008). In this sense, the strategies taught are a guide that enables weak readers to participate actively in the comprehension process (Ülper, 2010; Van Keer & Verhaeghe, 2005). Now the reader is expected to internalize the taught strategy and use it in a way that checks his understanding. However, the ability of students to apply strategies independently reveals the necessity of focusing on "how" as well as "what" is taught to students.

Different methods are followed for the teaching of strategies. Pressley, Harris, and Marks (1992) claimed that good strategy teaching is based on the principles of constructivism. They stated that Moshman's (1982) classification of constructivism would help to understand the use of constructivism in strategy teaching. They grouped them as strategy teaching based on endogenous constructivism, exogenous constructivism and dialectical constructivism.

Strategy teaching based on endogenous constructivism takes place in a social environment that is dependent on the learning and teaching content. Strategy teaching is based on student-centered explanations and the discovery of instructional principles. There is no direct strategy teaching here (Almasi, 2003). The teacher provides students with a useful and rich environment to participate in the learning process (Harris & Graham, 1994). In strategy teaching based on endogenous constructivism, the student is expected to internalize the strategies used. When we look at the 2005 Turkish curriculum, it is aimed to internalize the strategies by presenting them to the students. The strategy is used throughout the course, but there is no direct instruction about these strategies.

Modeling and explanation play an important role in strategy teaching based on exogenous constructivism (Pressley et al., 1992). Especially low-achieving students need open instruction (Snow, 2002). One of the models based on extrinsic constructivism is direct instruction (Almasi, 2003). Direct instruction of strategies includes step-by-step open instruction in certain strategies. In the direct instruction model, the teacher teaches the strategy as a model or by clearly explaining how to use the strategy (Bauman, 1984). Over time, teacher-directed activities are reduced and students are tried to work independently. It is stated that although direct instruction is effective in teaching strategies, it is insufficient in providing metacognitive awareness about when and how to use the strategy (Almasi, 2003).

Dialectical constructivism, on the other hand, lies between endogenous and exogenous constructivism. Dialectical approaches don't advocate either stating clearly all the steps of a strategy, nor fully discovering the strategy by the student. They aim to support students according to their needs (Pressley et al., 1992). Reciprocal teaching and operational strategy teaching can be given as examples for strategy teaching based on dialectical constructivism (Almasi, 2003).

Reciprocal teaching is a strategy teaching method that is used extensively (Pressley & Woloshyn, 1995). The teaching of questioning, summarizing, clarifying and predicting strategies in reciprocal instruction is supported by dialogues between teachers and students (Rosenshine & Meister, 1994). Students take turns taking the leadership role in the group and apply these strategies. The teacher intervenes when necessary (Pressley et al., 1992).

Operational strategy teaching involves structuring the meaning of the text with the using of the strategies which used by good readers. Although strategies vary in operational strategy teaching, they are generally taught in a certain order. The teaching of strategies carried out in the group together with the group members, and it is tried to create a common meaning.

The long-term aim of operational strategy teaching is to internalize the strategy and to ensure the continuously adaptable strategic understanding (Pressley & Woloshyn, 1995).

Different from these teaching methods, there are also methods developed by researchers. Palincsar et al. (1991) created a model using direct teaching, reciprocal teaching and problem-based teaching. These applications for strategy teaching have a large place in the literature. However, students need strategy teaching models that will enable them to control the strategy implementation process. In a way, it should be ensured that they have the ability to self-manage this process (Almasi, 2003). This is one of the basic features expected from today's individuals.

One of the models that supports students to use the strategy on their own, provides cognitive and motivational support, and integrates self-regulation procedures and strategy teaching steps is the "Self-Regulated Strategy Development" model. A detailed examination of this model, which has been used in studies on reading in recent years, is very important for the model to be used effectively in teaching reading comprehension strategy.

## Purpose of the research

In this study, it is aimed to provide detailed information about the "Self-Regulated Strategy Development" model, which was developed for students to use strategies independently. For this purpose, answers to the following questions were sought.

1- What is the Self-Regulated Strategy Development model?

2- In which areas is the Self-Regulated Strategy Development model used?

3- How is the Self-Regulated Strategy Development model applied in teaching reading comprehension strategy?

4- What are the studies which the Self-Regulated Strategy Development model is used in teaching reading comprehension strategy?

## Importance of Research

Self-regulation, which can be defined as the individual's management of his own behavior (Senemoğlu, 2012), requires the individual to take responsibility for his own learning, plan and control it in the learning process (Aydın & Atalay, 2015). Good readers need to be able to organize the reading comprehension process in order to construct meaning from the text (Hilden & Pressley, 2007). Therefore, in order to prevent reading comprehension problems, there is a need for a teaching model in which students can control and regulate their comprehension process. Examining and revealing the SRSD model developed to meet these needs of the students reveals the importance of the research.

## METHOD

In this study, it is aimed to reveal detailed information about the "Self-Regulated Strategy Development" model. For this reason, it was necessary to examine the studies on the model in detail. One of the ways to reach detailed information about a subject is the document review method. This method includes the analysis of written materials containing information about the phenomenon or cases that are aimed to be investigated (Yıldırım & Şimşek, 2013). For this reason, the document analysis method, which is one of the qualitative research methods, was used in this study.

Search have been made by researchers using the keywords “self-regulated strategy development”, “self-regulated strategy teaching”, “strategy instruction”, “strategy teaching”, “reading” in EBSCOhost (Business Source Complete), ScienceDirect, ProQuest and Google Scholar electronic databases.

## FINDINGS

### 1- What is the Self-Regulated Strategy Development model?

SRSD is a teaching model that was developed by using the theories which stating that changes in strategic knowledge, content knowledge and motivation will create the learning process (Harris, Graham, & Mason, 2006). The formation of the model was pioneered by the random convergence between the studies of the two researchers in different fields—Harris's cognitive-behavioral practices for shy children and Graham's research on writing. Although many researches are effective in the formation of the model, four sources come to the fore at most. The first of these is Donald Meichenbaum and his book “Cognitive-Behavior Modification: An Integrative Approach”. In his book, Meichenbaum (1977) emphasizes that changes from negative self-talk to positive self-talk is a process that is also reflected in the behavior of the individual (Sanders, 2018). It also provided the basis and acceleration of the study by including a model for teaching processes. Secondly, the work of Soviet theorists (Vygotsky, Luria and Sokolov) on the self-control and development of the mind was utilized. The third reference is Deshler, Schumaker, and colleagues' work on strategy teaching steps for students with learning disabilities. While developing the strategy teaching steps in the SRSD model, these steps were used. Finally, the studies of Brown, Campione and colleagues on the critical aspects of self-control, metacognition and strategy teaching are based on (Harris & Graham, 1999).

The model aims to support students who have difficulties in acquiring and developing some skills emotionally, behaviorally and cognitively. These students need more structured, clear and expanded instruction than their peers in developing skills, strategies or meaning. Many studies have been integrated for powerful applications that will meet this need (Harris and Graham, 1999).

Although the development of reading and writing skills is mostly associated with verbal ability, studies emphasize that cognitive and motivational variables are also important in the development of these skills (Zimmerman & Bandura, 1994). Self-regulation is one of the cognitive and motivational variables that are effective in the development of reading and writing skills (Schunk & Zimmerman, 2007). According to Bandura (1977), people do not shape their behavior only according to external influences. People can also shape their own behavior. Self-regulation is the way which people influence, direct and control their behaviors, thoughts and feelings on their own (Senemoğlu, 2012). Self-regulation includes processes such as setting goals for learning, using effective strategies, monitoring performance, using time effectively and asking for help when necessary. It indicates the degree of motivational, metacognitive and behavioral influence of a person on his own behavior (Schunk & Ertmer, 2000).

Two important determinants of self-regulation are selection and control. Students cannot develop self-regulation unless they have options for their learning and control the basic structures of learning. Telling them what, when and where to do, will reduce their chances of being self-regulation (Schunk & Ertmer, 2000). Although self-regulation is highly valued by teachers, it is an underdeveloped skill in students (Sanders, 2018). For this reason, there is a need for applications that will improve students' skills as well as improve their self-regulation skills and enable them to control this process. At this point, we come across with Self-Regulated Strategy Development model.

SRSD is a teaching model that integrates the direct teaching of an academic strategy with self-regulation skills (Sanders, 2018). While teaching strategy to students throughout the SRSD model, they are also supported to gain self-regulation skills (Harris & Graham, 1999). Throughout the model, the student is supported in the independent implementation of the learned strategy (Hagaman & Casey, 2016). Thus, the model provides both academic competence and the development of self-regulation skills (Harris & Graham, 1999).

Although the focus of the model is to teach the strategy, self-regulation is used to better understand and implement the strategy. The main purpose of this association is to provide competence in cognitive processes; use the strategy independently and self-regulated; positive attitude towards skills. Self-regulation procedures will help students reach their goals by guiding them about how and when to use the strategy and how it will be organized (Harris, Graham, & Mason, 2003).

According to Pintrich (2004), some stages must occur in order to ensure self-regulation in a curriculum. Within each stage, adjustments are made in cognitive, motivational, behavioral and contextual areas. These stages are the forethought stage, the monitoring stage, the control stage and the reflection stage. Zimmerman (1997), on the other hand, divided this process into three cyclical phases as forethought, performance and self-reflection (Aydın & Atalay, 2015). The forethought phase precedes action; It includes processes such as goal setting and modelling. The performance phase includes processes that occur during learning that affect attention and actions such as social comparisons, feedback, and the use of learning strategies. In the self-reflection stage that occurs after the performance, students evaluate their progress (Schunk & Zimmerman, 2007). In the SRSD model, the basic components of self-regulation were considered as goal setting, self-monitoring, self-instruction and self-motivation. Each component has an important place in behavior regulation (Cosentino, 2017).

Self-instruction is the self-conversations that regulate our behavior. These conversations help to understand the nature of a problem, identify effective strategies, and monitor how strategies are progressing, thereby strengthening academic performance (Graham, Harris, & Reid, 1992). The development of self-instruction primarily depends on the teacher's modeling of self-instruction. The teacher models self-instruction aloud. Over time, the student begins to practice self-instruction under the guidance of the teacher. As the student practices self-instruction, responsibility is gradually transferred to the student (Mason, 2002). In self-instruction, it is aimed that students use at least six self-learning expressions and teaching is planned accordingly. The self-learning expressions which are defining the problem, focusing attention and planning, strategy, self-evaluation and error correction, coping and self-control, and self-motivation expressions are thought (Graham, Harris, & Reid, 1992). The student first defines the problem. About the problem self-teaching expressions such as “What should I do here?”, “I must read the text first. “, “I should mark words I don't know" are used. With the statements of focusing attention and planning, students are expected to focus on the task and make a plan. Stating which strategy to use or what steps are necessary to solve a problem is an example for this. In the strategy section, students ensure the use of the strategy with the expressions they use. Example, when asked to find the main idea of a text, the student expresses to himself how the RAP strategy will be applied. Self-assessment and error correction statements enable students to evaluate their learning process, identify and correct errors. Coping and self-control statements are aimed at helping students cope with difficulties. The students responded to the difficulties they faced by saying “I can do this no matter how hard it is.” or "Even if I made a mistake, I can correct it later". The students who guides and supports themselves with the positive expressions throughout the process, eventually uses reward expressions such as “Great!”, “I did it!”, “Awesome!” to motivate themselves (Graham, Harris, & Reid, 1992; Mason, 2002; Mason, Meadan-Kaplansky, Hedin, & Taft, 2013).

One of the components of SRSD is goal setting. Goal setting provides motivation to achieve any goal. It helps to focus on a task, determine the strategies necessary for the task, and monitor progress towards the goal (Schunk, 2001). Goal setting guides

cognition, provides evaluation and monitoring of cognition (Pintrich, 2000). Thus, goals help the individual to regulate his behavior (Cosentino, 2017).

Another component of SRSD is self-monitoring. Self-monitoring is the awareness of individuals about own behavior during learning (Webber, Scheuermann, McCall, & Coleman, 1993). Self-monitoring provides feedback to the individual about his/her own behavior (Sanders, 2018). Webber et al. (1993) report three basic views on self-monitoring. According to the metacognitive view, it is estimated that the individual's awareness of his behavior by watching causes to change of the behavior. This cognitive awareness leads to self-regulation. According to another view, the act of self-monitoring results in an evaluation that implicitly reinforces or punishes itself. The third view states that self-monitoring functions are a cue or stimulus that provides external control of behavior. Self-monitoring refers to the individual's evaluation and recording of the own behavior. Determining whether a behavior has occurred or not, refers to self-evaluation (Graham, Harris, & Reid, 1992). Throughout the SRSD, students are taught to monitor and evaluate the process of achieving the goal. Students monitor their own progress in the strategy steps with the control charts they have created. When all the steps are completed, the students check all the steps again (Mason et al., 2013).

Self-motivation happens when a student completes a task and motivates oneself. This motivation can be as effective as extrinsic motivation. The student should be able to control a reinforcer that will motivate himself without any external influence. However, this control may not be possible at first. As in other self-regulation components, a gradual transition usually take place here (Graham, Harris, & Reid, 1992). After the teacher and students determine the reinforcers, the students choose the reinforcers with the approval of the teacher. When the student achieves the goal, he rewards himself. Reinforcers can be internal or external (Sanders, 2018). With SRSD, students are taught how to use positive self-expressions. For example, when a student completes all the steps of the strategy, student can reinforce ownself by saying “I did a great job!” (Adkins, 2015). Thus, a positive learning environment can be created (Sanders, 2018). In SRSD, after completing their tasks, students reinforce themselves with the graphs they fill in about their performance (Mason et al., 2013).

**In Which Fields is SRSD Used?**

Graham and Harris developed the SRSD model for teaching writing skills in students with learning disabilities (Festas, 2015). Most of the studies in this field were conducted on students with learning disabilities (Lane et al., 2008; Reid, Hagaman, & Graham, 2014). Apart from this, it has been seen that studies have been carried out in normal classrooms in recent years (Festas et al., 2015; Graham & Harris, 2003; Graham, Harris & Mason, 2005; Harris, Graham & Adkins, 2015; Tracy, Reid & Graham, 2009). It is seen that studies on teaching writing range from primary school to secondary school (Graham & Harris, 1993; Harris et al., 2003).

As a result of meta-analysis studies on SRSD, it has been revealed that SRSD is more effective than other writing teaching methods (Graham, S., McKeown, D., Kiuhara, S.ve Harris, K., 2012; Graham & Perin, 2007). SRSD has provided many types of development in writing teaching, such as personal narratives, story writing, persuasive essays, and informative essays. It was effective in planning and revising strategies such as brainstorming, self-monitoring, reading for information, and organizing with peers (Harris et al., 2003). Students have improved in indicators of student performance such as the quality of writing, writing knowledge, writing approach, and self-efficacy (Graham, Harris, McArthur, & Schwarz, 1991).

Although not as intensely as in writing teaching, SRSD has been applied in the field of reading in recent years (Johnson, Graham, & Harris, 1997; Mason, 2004; Mason, 2013; Mason et al., 2006; Mason et al., 2012; Mason et al., 2013; Özdemir and Kıroğlu, 2017; Regovich and Perin, 2008). Mason et al. (2013) taught low-achieving fourth-grade students a reading comprehension strategy using SRSD to understand informative texts. Regovich and Perin (2008) taught strategy to students with behavioral and attention disorders using SRSD. Hedin, Mason, and Gaffney (2011) taught strategy to two students with attention deficit disorder.

The effect of SRSD on metacognition, which is one of the important determinants of reading comprehension, has been tried to be revealed through studies. Roohani, Hashemian, and Asiabani (2016) revealed that strategy teaching in accordance with the SRSD improves the metacognition of second language learners. In a similar study, it was concluded that SRSD was effective on listening and metacognitive awareness (Samani & Biria, 2015).

Another area where SRSD used is mathematics. Studies have been conducted with students with learning disabilities in solving word problems in mathematics (Case, Harris, & Graham 1992; Cassel & Reid, 1996; Wong, Harris, Graham & Butler, 2003). Cuenca-Carlino, Freeman-Green, Stephenson, and Hauth (2016) used the SRSD model in teaching multi-step equations. The research was carried out with six students with an average age of 13 who had difficulties in mathematics. Cassel and Reid (1996) taught problem solving strategy to two third and two fourth grade students with mild disabilities with SRSD. Karabulut and Özmen (2018) taught the “Understand and solve” strategy with SRSD in order to gain problem-solving skills. Ennis and Losinski (2019) tried to teach addition and subtraction in fractions to fifth grade students with learning difficulties with this model.

Although not as intense as the fields mentioned above, studies have also been carried out to develop different characteristics of students. A group of teachers from primary school to high school investigated the effects of SRSD on homework completion and organization (Wong et al., 2003).

**How is SRSD Applied in Teaching Reading Comprehension Strategy?**

SRSD is a model that can be applied with many student groups (Graham & Harris, 2003). While teaching strategy with the model, six basic steps are emphasized. The use of these steps together constitutes the operation of the model (Sanders, 2018). The four basic components of self-regulation (goal setting, self-monitoring, self-teaching and self-motivation) are put in to the steps for supported to students learn the strategy and apply it independently (Harris, Graham, Mason, & Saddler, 2002). Although it is essential to complete all the steps, there is flexibility in this process. This flexibility between the steps allows teachers to focus on the steps according to the needs of the students while using the model. The steps can be repeated when necessary, more than one step may be emphasized in a lesson, or in some cases a step may be skipped (Graham & Harris, 2003; Harris et al., 2003). These steps are discussed in detail below.

1- Development of prior knowledge: This is the stage where teachers define the prior knowledge and skills required for the use of the strategy and reveal the existing knowledge of the students (Harris et al., 2003; Sanders, 2018). Words and concepts are explained at this stage for the student to practice strategy and self-regulation procedures. The development of prior knowledge is important in order to move on to other steps. The development of prior knowledge continues in the second and third stages (Harris et al., 2003).

In this step, two self-regulation procedures, goal setting and self-monitoring, are introduced to students (Harris et al., 2002). Emphasis is placed on the development of self-expressions. At this stage, the teacher helps students develop self-expression. At this stage, students who see themselves as inadequate are directed to make positive statements. A discussion environment is created in the classroom about how negative expressions will affect our behavior (Harris et al., 2003).

2- Discussion: In the discussion step, how and when to use the strategy is discussed. It also focuses on how to use the strategy in new situations (Harris et al., 2003; Sandler, 2018). In this step, the importance of the student's performance is emphasized in the good use of the strategy. Students are asked to make a written commitment to implement the strategy and self-regulation procedures. Thus, it is aimed to motivate the student to use the strategy (Harris et al., 2003). Since it is important to use the strategy independently in SRSD, the student is expected to adopt the strategy (Hagaman & Casey, 2016). Therefore, studies are carried out in this direction. In this step, the steps of the strategy are explained. Abbreviations related to the steps of the strategy explained are introduced to the students (Sanders, 2018). These abbreviations ensure that the steps of the strategy are memorable.

3- Modeling: In this step, the strategy is modeled systematically by the teacher. Strategic modeling is an important component that includes more than simply implementation of strategy steps. In a good modeling, the student is allowed to see the thinking processes that a skilled person uses to implement the strategy. Modeling provides important information about why the steps in the strategy are applied and how it helps in understanding (Hagaman & Casey, 2016). Think-aloud is applied in modeling the strategy. The teacher explains each step of the strategy aloud and shows the students how the strategy is implemented (Sanders, 2018).

4- Memorization: This step is necessary for students to use the strategy independently (Sanders, 2018). Memorizing the steps of the strategy will enable the students to apply the strategy automatically (Hagaman & Casey, 2017).

5- Supporting: Students' use of strategy is supported at this stage. Students implement the strategy, self-teaching and other components of self-regulation with the support of the teacher (Sanders, 2018). These components help support emotional and cognitive change and motivation (Harris et al., 2003). The teacher and student work together during this phase. While the teacher initially supports the student at every stage, this support is reduced over time. This phase lengthens or shortens as the student progresses. This is the longest step of the SRSD (Hagaman & Casey, 2016).

6- Independent implementation: At this stage, the student should be able to apply the strategy independently. The teacher follows the student to ensure the correct use of the strategy. Tests and lectures can be used to track student success. In some cases, the student can adjust the strategy according to their own needs. As long as the student's success is high, the student can arrange the strategy according to himself (Hagaman, Luschen, & Reid, 2010).

In SRSD, lessons are arranged between 20 and 60 minutes, at least three times a week. Lesson times can be adjusted according to the class level. For primary school students aged 8-12, 30-40 minutes of class time is sufficient for students to complete the sections (Graham & Harris, 2003).

**What are the studies that the SRSD Model is used in Teaching Reading Comprehension Strategy?**

The teaching of reading comprehension strategies with SRSD is given in the table below.

**Table 1. Studies in which the ODSG model was used in teaching reading comprehension strategy**

| Research | Working Group | Teaching | Assessment Tools |
|---|---|---|---|
| Johnson, Graham & Harris (1997) | 47 students with learning dissabilities from fourth to sixth grade | Story structure and story content analysis strategy | Comprehension tests |
| Mason (2004) | 32 fifth grade students who have difficulty reading | TWA strategy | Oral repetition |
| Mason vd. (2006) | 9 students with learning disabilities | TWA+PLANS strategies | Oral |
| Özmen and Vayiç (2007) | 3 intellectually disabled students attending the fourth and fifth grade | Read-Underline-Segment-Blend strategy | Number of syllables and words read correctly |
| Regovich and Perin (2008) | 63 middle school students with behavior disorder | TWA + written summary | Written summary |
| Mason (2008, akt.: Mason, 2013) | 56 seventh and eighth graders with difficulty | TWA+PLANS strategies | Oral repetition<br>TORC-3<br>OWLS |
| Hagaman and Reid (2008) | 3 sixth graders | RAP strategy | Text recall percentage-Short answer questions |
| Hoyt (2010) | 10 students from 6th to 12th grade with affective and behavioral disorders | TWA strategy | Written summary |
| Johnson (2011) | 3 high school students with attention deficit hyperactivity disorder | TRAPeR strategy | Oral summary |
| Hedin, Mason and Gaffney (2011) | Two attention-deficit fourth- and fifth-grade students with poor understanding | TWA Stratejisi öğretimi + sözlü soru sorma | Oral repetition |
| Mason, Meadan, Hedin and Cramer (2012) | 20 fourth graders who have difficulty reading and writing | TWA+PLANS strategy teaching | Reading Comprehension and writing |
| Johnson, Reid and Mason (2012) | 3 ninth graders | TWA strategy | Number of main ideas-Percentage of auxiliary details |
| Hagaman, Casey ve Reid (2012) | 6 ninth graders | RAP strategy | Short answer questions |
| Mason, Meadan-Kaplansky, Hedin, Taft (2013) | 58 fourth-year students who have difficulty reading | TWA strategy + writing teaching | Interview form |
| Mason, Davison, Hammer, Miller and Glutting (2013) | 77 fourth graders | TWA + PLANS strategies | Oral repetition |
| Mason (2013) | 81 fifth graders | TWA strategy | QRI–3<br>TORC–3<br>Oral repetition |
| Lipari (2014) | 110 sixth graders | ARTS strategy | MARSI, comprehension tests, summary rubric |
| Howorth (2015) | 6 students with autism | Use of TWA strategy with digital implications | Oral repetition, accuracy of comprehension questions |
| Hagaman, Casey and Reid (2016) | 7 students attending sixth and seventh grades | TRAP paragraphing strategy | Text recall rate<br>Short answer questions |
| Li vd. (2016) | 63 fourth and fifth graders | TWA / QT / TWA+QT | Comprehension test |
| Howorth, Lopata, Thomeer and Rodgers (2016) | Four male students aged 10-11 with autism | TWA strategy | Repetition, comprehension tests |
| Hagaman and Casey (2016) | Qualitative research | Teaching the TRAP strategy with SRSD | |
| Merson (2016) | 10 ninth and tenth graders | Teaching TWA strategy with SRSD | Comprehension test |
| Roohani, Hashemian and Asiabani (2016) | 70 students aged 16-26 | SRSD-based reading instruction | Metacognitive awareness inventory, Oxford Placement Test |
| Ennis (2016) | 3 students with emotional and behavioral disorders | TWA + PLANS strategy | Oral and written explanation |
| Roohani, Hashemian and Kazemian (2017) | 60 students in total aged 20-25 | Teaching TWA strategy with SRSD, Rhetorical | Reading comprehension, critical thinking |

| Research | Working Group | Teaching | Assessment Tools |
|---|---|---|---|
| | | Analysis | |
| Cosentino (2017) | 41 sixth-grade students with reading difficulties | SRSD | Reading comprehension test, motivational belief scale, reader perception scale |
| Mardani and Afghary (2017) | 60 female students aged 17-26 | Teaching TWA strategy with SRSD | Reading and summarizing, Metacognitive awareness scale |
| Özdemir and Kıroğlu (2017) | 68 fourth graders | Teaching TWA strategy with SRSD | Reading comprehension test, Main idea identification test |
| Sanders (2018) | 30 students attending fourth, fifth, and sixth grades at medium and high risk of reading | Teaching TWA strategy with SRSD | Six reading comprehension scales |
| Putri (2018) | 30-35 second graders | Vocabulary teaching with edited SRSD | Vocabulary test |
| Jozwik, Carlino, Mustian ve Douglas, 2019 | 4 students with learning disabilities attending fifth grade | TRACK strategy teaching | Comprehension questions, Strategy use |
| Sanders (2020) | Students with learning disabilities | TRAP strategy teaching | Reading comprehension test |
| Sanders vd. (2020) | Students with emotional and behavioral disorders attending the fourth, fifth, and sixth grade | Teaching TWA strategy with SRSD | Reading comprehension |
| Fırat ve Ergül (2020) | 3 students with learning disabilities attending 6th grade | Teaching TWA strategy with SRSD | Think-aloud technique, semi-structured interview |
| Teng (2020) | 144 sixth graders | Collaborative text structure modeling with SRSD | Content comprehension, main idea summarization |
| Kılıç Tülü, Özbek ve Ergül (2021) | 4 boys with learning disabilities attending fourth grade | Teaching TWA strategy with SRSD | Multiple choice test, Narration rubric |

TWA= Think, While, After reading strategy; PLANS = *P*ick goals, *L*ist ways to meet goals, *A*nd make *N*otes, *S*equence notes; QRI–3 = Qualitative Reading Inventory–3: TORC–3 = Test of Reading Comprehension–3 (V. L. Brown, Hammill, & Wiederholt, 1995); OWLS = Oral and Written Language Scales (Carrow-Woolfolk, 1996): RAP: Read-Ask-Paraphrase; ARTS=Ask, Read, Tell and Summarize) MARSI= Meta- cognitive Awareness of Reading Strategies Inventory: QT= Quality Talk: TRACK=Think while reading, React, Ask question, Connect, Keep track of thinking with text codes

As seen in Table 1, the SRSD model has been frequently used in teaching reading comprehension strategy in recent years. Studies have generally been carried out on students who have a certain mental problem or have a low reading level even though they do not have it. Apart from this, some studies have been carried out on normal students. Apart from the experimental studies mentioned above, there are also qualitative studies explaining how the SRSD model is used in strategy teaching. Hagaman and Casey (2017) revealed how the teaching of TRAP strategy is done with a self-regulated strategy development model. Similarly Hagaman, Luschen, and Reid (2010) explained in their study how the RAP strategy is taught to reading comprehension.

When we look at the studies carried out on SRSD in Turkey, Özmen and Vayiç (2007) taught the strategy of Read-Underline-Divide-Combine with three mentally retarded students aged ten, eleven and twelve years old. Apart from this study, Özdemir and Kıroğlu (2017) taught the TWA strategy to fourth grade students with SRSD. In this study, the effect of strategy teaching on students' reading comprehension and main idea determination skills was tried to be revealed. In the literature no other reading comprehension strategy teaching study with SRSD was found in Turkey. The SRSD model has also been used in the teaching of writing in Turkey. Özmen, Selimoğlu, and Şimşek (2015) used the steps of SRSD in the Adapted Cognitive Strategy Teaching they developed in a study examining the writing skills of a sixth grade student with mental retardation. Apart from this, strategies to improve writing skills were taught in doctoral theses (Can, 2016; Çağlayan Dilber, 2014; Uygun, 2012) and master's theses (Akıncılar, 2010; Bi, 2020; Öğuldu, 2018; Sertoğlu, 2021).

## DISCUSSION

Reading comprehension skill has an important role in human life. For this reason, practices aimed at improving reading comprehension have been a subject that has been emphasized in every period. One of the applications that improve reading comprehension is strategy teaching. Strategies are plans that help students, guide them, and check their understanding. By using these strategies, students can increase their reading comprehension levels (Pressley et al., 1992).

How these strategies are taught is as important as strategy teaching to students. Because in a good practice, there is a need for instructional support that can use the strategy in real learning environments, combine strategy knowledge and application knowledge, and also control this process alone. One of the models developed to provide this support is the self-regulated strategy development model (Harris & Graham, 1999). The SRSD model is a strategy teaching model that combines both strategy teaching and self-regulation procedures. The effectiveness of this model has been demonstrated with some studies (Hagaman, Casey, & Reid, 2016; Mason, 2004).

While teaching strategy in the model, strategy is taught in six stages. There are some critical features that practitioners should pay attention to while applying these steps. These critical features are important for the independent use of the strategy.

For example, with the individualization of strategy teaching, some criteria are tried to be provided instead of a certain time. Thus, each student is followed until they implement the strategy independently. In addition, explicit teaching of strategy is supportive to low-achieving students who need help in strategy teaching. Considering that strategy teaching is an ongoing process, it is considered important to include teaching different strategies over time, to make strategy use permanent and to improve metacognition (Lienemann & Reid, 2006). When we look at the direct teaching model it is seen that similar application steps are included in this model (Kuşdemir & Güneş, 2014). However, choosing and using the strategy to be applied during reading is a process that requires high-level thinking skills that the individual will decide for own self. In this process, applications are needed to help them. The four self-regulation procedures included in the steps in the SRSD model provide assistance to the strategy practitioner on how to implement the strategy. This situation helps the student to internalize the support he receives from outside in a sense. Thus, the model ensures both the independent implementation of the strategy and its transfer to different situations (Hagaman & Casey, 2017).

Looking at the studies on students' levels of applying reading comprehension strategies, Güngör (2005) states that secondary school students mostly use traditional methods. Ergen and Batmaz (2019) state that fourth grade students use strategies at the "sometimes" level. In another research, fourth grade students frequently use metacognitive reading strategies (Başaran, 2013). While Ergen and Batmaz (2019) revealed that strategy use is effective on reading comprehension even if the students' level of strategy use is "sometimes", Başaran (2013) concluded that strategies are not effective on reading comprehension even though they are used "often". This situation encountered in the literature shows that the cooperation of elements such as strategy knowledge, content knowledge, motivation has an important place in understanding (Harris et al., 2006; Zimmerman & Bandura, 1994). The goal of mastering cognitive processes, using the strategy independently, and creating a positive attitude about the learned skills (Harris et al., 2003) shows that the model emphasizes cognitive and motivational elements in the understanding process.

Although the SRSD model was initially developed for teaching writing, studies have also been carried out on reading comprehension recently. It has seen that reading comprehension strategies are taught using this model (Mason, 2004: Hagaman & Reid, 2008; Sanders, 2020; Teng, 2020). However, when the looking to strategy teaching studies, similar strategies are generally taught (Mason, 2004; Hedin, Mason, & Gaffney, 2011; Hoyt, 2010; Sanders, 2018). This situation requires the use of the model in the teaching of different strategies. In addition to writing and reading skills, the model is also used in applications that will improve students' mathematical skills, metacognition, and sense of responsibility (Case, Harris, & Graham 1992; Cassel & Reid, 1996; Wong, Harris, Graham & Butler, 2003).

When we look at the studies abroad, it is seen that there are studies on the effect of the SRSD model on reading comprehension. It can be said that the studies in our country are insufficient in this regard. As a result of the literature review conducted in Turkey, it was seen that the SRSD model was used in a few studies in the teaching of reading comprehension strategy (Kılıç Tülü, Özbek, & Ergül, 2021; Özdemir & Kıroğlu, 2017; Özmen & Vayiç, 2007). This situation can be considered as a deficiency, especially considering that we aren't very sufficient in terms of reading comprehension (MEB, 2016). In addition, the use of SRSD in other fields is not very common in our country. While SRSD is mostly used in the field of writing, it has not been applied in other fields.

## CONCLUSION AND RECOMMENDATIONS

As a result of the research, it has been seen that strategy teaching with SRSD is mostly used in groups with learning difficulties and in teaching writing, but in recent years it has also been applied in groups without any cognitive problems and in teaching reading comprehension strategy. The model supports the independent use of strategy by combining self-regulation procedures with strategy teaching. Therefore, goal setting, self-teaching, self-monitoring and self-evaluation practices are modeled by the teacher to ensure self-regulation throughout teaching. These practices are embedded in the six steps of strategy teaching. While teaching the steps of developing prior knowledge, discussion, modelling, memorization, support and independent application, self-regulation practices are also included.

In recent years, many studies have been carried out abroad to reveal the effect of the model on reading comprehension. In Turkey, the number of studies in this sense is almost non-existent. In order to eliminate this deficiency in the research, it is recommended to carry out studies to determine the effect of the model on reading comprehension and the situations that may be encountered in practice. The model was generally used in teaching similar strategies. Therefore, the model should also be used in teaching different reading comprehension strategies. The model lays the groundwork for the individual to implement the strategy by himself, rather than just teaching strategy. In future studies, revealing the effect of the model on different dimensions of reading comprehension and the development of students' self-regulation skills will contribute to the field.

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