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RESEARCH ARTICLE

Teachers' Views on Metacognitive Reading Strategies for Children with Learning Disabilities

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Abstract

This study aims to evaluate the level of knowledge among teachers working with students with learning disabilities concerning the use of metacognitive strategies. The research sample consisted of 16 teachers responsible for instructing reading skills to students with learning difficulties in the fifth–eighth grades in Hatay province. The study employed a qualitative methodology, using a semi-structured interview form as the data collection tool. Prior to data collection, a comprehensive literature review was conducted to establish a conceptual framework. Subsequently, a semi-structured interview form consisting of five items was developed to construct appropriate interview questions. The interview instructions underwent a pilot test, leading to modifications in the content and format of the questions. Following these revisions, the data collection process started. Adhering to the criteria set forth by Kvale (1996) to enhance the quality of the interview process, the interviews were conducted in person. Various strategies were employed, such as ensuring that the participants' answers aligned with the study's objectives, recording audio and taking detailed notes, encouraging extensive responses, eliciting rich information, and avoiding interference with the participants' ideas. With the participants' consent, the interviews were audio recorded to prevent data loss. The obtained data were analyzed using an inductive approach. The findings reveal that while the teachers possessed a basic understanding of the strategies, they lacked in-depth knowledge of the subject matter. Additionally, errors in strategy implementation were observed. Moreover, the teaching of strategies was found to be effective in enhancing reading comprehension and was an effective method. However, teachers reported insufficient allocated time for using strategies and expressed that their knowledge level in this area was insufficient.

Keywords: Learning disability, metacognitive strategy, reading comprehension, using strategy

Introduction

Learning disabilities are neurodevelopmental disorders characterized by delays or impairments in various areas, including reading, writing, mathematical calculations, listening, reasoning, and written expression (Görgün & Melekoğlu, 2019). The term "learning disability" was adopted during the first panel discussion in Chicago, where parents and educators convened to discuss individuals with disabilities, brain damage, or neurological disorders (Kirk, 1963). This led to the establishment of the Learning Disabilities Association (LDA). The literature identifies several essential elements that should be included in the definition of learning disabilities (Keogh, 1994): (1) a disorder of the central nervous system, (2) developmental inadequacy and deficiency in psychological processes, (3) difficulties in academic and learning areas, (4) inconsistency between achievement and potential, and (5) independence from any inadequacy or environmental conditions. Children with learning disabilities face challenges across all dimensions of attention, which is a fundamental prerequisite for learning (Hallahan et al., 1996; Swanson & Cochran, 1991). These difficulties not only impede academic success but also lead to negative experiences in the classroom (Reid & Lienemann, 2006). Another area in which students with learning disabilities struggle is memory cognition. Numerous studies have found deficits in processing phonological codes in short-term memory among students with learning disabilities, which adversely affect reading development (Lennox & Siegel, 1993). Reading poses the most significant challenge for children diagnosed with learning disabilities (Salman et al., 2016).

The reading process involves the analysis of words in texts using phonological and morphological skills, making sense of the analyzed words by integrating them with vocabulary and prior life experiences, evaluating the understood words according to syntactic rules, and comprehending the intended message (Güldenoğlu et al., 2012). For students with learning disabilities, difficulties in reading comprehension tend to overshadow difficulties in word analysis (Pintrich et al., 1994). Research on the reading comprehension performance of students with learning disabilities reveals that limitations in the use of metacognitive strategies contribute to comprehension difficulties (Nicolielo-Carrilho et al., 2018). Students who possess an awareness of metacognitive strategies engage in monitoring their comprehension, identifying comprehension problems while reading, and developing strategies to overcome these difficulties (Bos & Anders, 1992).

Flavell (1976) conducted a study comparing the memory skills of kindergarten and second-grade primary school children, which led to the formulation of the concept of metacognition. In a subsequent study,

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Flavell (1979) further developed his theory by incorporating the concept of metacognition. Metacognition refers to the awareness of one's own thoughts and the ability to control and regulate one's behavior (Livingston, 2003). Metacognitive strategies involve monitoring and evaluating students' performance and developing plans accordingly based on the given situation (Botsas & Padeliadu, 2003). Within the context of reading literacy, students employing metacognitive strategies are expected to engage in planning, monitoring, and evaluating the reading process (Garner, 1987; Soto et al., 2019). The cognitive strategies employed by students to overcome reading comprehension difficulties at the conclusion of this process are referred to as cognitive strategies (İdris et al., 2022). Successful readers are those who can generate and use cognitive strategies for comprehension before, during, and after reading (Alatlı et al., 2022). Studies investigating the use of metacognitive strategies by students with learning disabilities have revealed that these students exhibit weaker abilities compared to their typically developing peers in terms of monitoring their own comprehension, making predictions about events in the text, generating questions to enhance comprehension, and self-questioning (Antoniou & Souvignier, 2007; Dermitzaki et al., 2008).

In recent years, there has been a proliferation of strategy-focused interventions and instructional programs aimed at enhancing the reading comprehension skills of students with learning disabilities (Idris et al., 2022; Graham & Harris, 1997). These studies have demonstrated the effectiveness of cognitive and metacognitive strategies in improving reading comprehension outcomes (Gersten et al., 2001; Pressley, 2000; Swanson, 1999b). However, while the literature indicates that students with learning disabilities are capable of acquiring cognitive and metacognitive strategies (Gersten et al., 2001; Mastropieri & Scruggs, 1997; Swanson, 1999b), some researchers contend that this acquisition may be limited to a specific time frame (Chan, 1991). Conversely, other studies indicate that students with learning disabilities can acquire strategies and transfer their application to various contexts, thereby demonstrating generalizability (Jenkins et al., 1978). Notably, when self-teaching techniques form the core of strategy instruction, students can internalize and self-regulate the use of strategies (Chan, 1991).

Students with learning disabilities encounter challenges in comprehending texts due to limitations that impact their reading skills and competencies (Gersten et al., 2001). Specifically, they struggle to recall the necessary comprehension strategies, monitor their progress, and effectively plan and regulate behaviors associated with successful comprehension (Dermitzaki et al., 2008). Students with learning disabilities often face difficulties in spontaneously applying and monitoring effective learning strategies (Botsas & Padeliadu, 2003). Moreover, they exhibit deficiencies in employing reading comprehension strategies, display minimal comprehension monitoring, and demonstrate limited sensitivity to text structures (Gajria & Salvia, 1992). Research has shown that teaching metacognitive strategies to students with learning disabilities enhances their reading comprehension success (Cavkaytar, 2010; Drigas et al., 2022; Muhid et al., 2020; Özkubat et al., 2021). Various studies have emphasized the significance of directly teaching and using metacognitive strategies for children with learning disabilities, highlighting its accepted and effective nature (Fırat, 2019; Lytra & Drigas, 2021; Shamir & Dushnitzky, 2019). The application of metacognitive strategies plays a critical role in monitoring comprehension, particularly among children with learning disabilities, and in developing preventive measures against difficulties in this process (Johnson et al., 1997). It is well established that students with learning disabilities exhibit deficiencies in employing metacognitive strategies due to their developmental characteristics (Drigas et al., 2022). However, studies focusing on the use of metacognitive strategies by these students remain limited (Astriani et al., 2020; Bakar & İsmail, 2020; Lucangeli et al., 2019).

In studies investigating teachers' proficiency in metacognitive strategies, it has been observed that their knowledge in this area is restricted (Asy'ari & Ikhsan, 2019; Hartman, 2001; Zohar, 1999). A study in the existing literature highlights the limited use of metacognitive strategies among teachers working with students with learning disabilities (Laçin & Çetin, 2022). Research focusing on teachers' understanding and implementation of metacognitive strategies emphasizes the significance of their knowledge level. The knowledge and beliefs held by teachers directly influence the effectiveness of their instructional practices (Hoy et al., 2006). Therefore, enhancing teachers' knowledge levels becomes crucial for improving the quality of teaching (Kent, 2004). To address this issue, it is imperative to identify the barriers that impede teachers from using metacognitive strategies in which they currently face limitations.

In line with this objective, the present study aims to explore teachers' perspectives regarding their knowledge and skills in using metacognitive strategies as well as to identify challenges in teaching and implementing these strategies. Thus, the overall aim of this research is to investigate and analyze the viewpoints of teachers who specialize in reading instruction for students with learning disabilities regarding the use of metacognitive strategies.

To achieve this purpose, the study addresses the following research questions:

1. How do teachers perceive their competence in defining metacognitive strategies?
2. What are the teachers' perspectives on the effectiveness of utilizing the metacognitive strategy instruction?
3. What are the teachers' opinions on the impact of employing metacognitive strategies on the reading comprehension of students with learning difficulties?
4. What are the teachers' considerations regarding the key aspects to bear in mind when using metacognitive strategies?
5. What are the challenges encountered by teachers in the implementation of metacognitive strategies?

By exploring these questions, the study seeks to provide insights into teachers' beliefs, experiences, and challenges related to metacognitive strategy instruction in the context of reading instruction for students with learning disabilities.

Methods

Aligned with the overall aim and specific research questions, this study employed a qualitative research approach to investigate the selected social phenomenon in-depth. Qualitative research offers a valuable means to explore the phenomenon from the subjective viewpoints of the individuals involved, facilitating a comprehensive understanding of the underlying processes within the context of the social structure that shapes these perspectives (Yıldırım & Şimşek, 2018). By adopting a qualitative methodology, this study aimed to capture rich and nuanced insights into the experiences and perspectives of the participants, providing a detailed exploration of the phenomenon under investigation.

Research Model/Design

This study adopts a phenomenological research design that falls within the realm of qualitative research methods, aiming to explore the use of metacognitive strategies for alleviating reading comprehension difficulties among students with learning disabilities as well as the support provided by teachers in this regard. Phenomenology is recognized as a qualitative research approach that focuses on comprehending individuals' experiences, perceptions, and the subjective meanings they attribute to a given phenomenon (Creswell et al., 2007; Gill, 2014).

Through the phenomenological lens, this study seeks to uncover the essence of the phenomenon under investigation and develop an understanding of how it can be interpreted, as emphasized by Öktem (2005). By employing phenomenology as the underlying research methodology, this study aims to delve into the lived experiences and perspectives of teachers in relation to the use of metacognitive strategies for enhancing reading comprehension among students with learning disabilities.

Participants

The participants for this study were selected using a purposive sampling method known as homogeneous sampling. Homogeneous sampling is frequently employed in qualitative research to thoroughly investigate a specific group by selecting individuals with similar characteristics or experiences (Patton, 1990; Yıldırım & Şimşek, 2018). In this study, 16 teachers who were actively engaged in teaching students diagnosed with learning disabilities in grades 5–8, specifically focusing on reading skills, were interviewed. The inclusion criteria for the participants were as follows: (1) currently employed as a teacher in an educational institution, (2) having a minimum of 1 year of experience in teaching reading to students with learning disabilities, and (3) voluntary participation in the research. Participants who met these criteria were included in the study. The demographic information of the participants is presented in Table 1.

Data Collection Tools and Collection of Data

This study employed the qualitative research method of interviews to collect data. The purpose of conducting semi-structured interviews was to gather comprehensive and in-depth information on the use of metacognitive strategies employed to address reading comprehension difficulties among students with learning disabilities. The interview method is widely recognized for its effectiveness in exploring participants' opinions, thoughts, experiences, and attitudes (Yıldırım & Şimşek, 2018). To ensure the quality and relevance of the interview questions, an extensive literature review was conducted, and a set of draft questions consisting of six items was developed. Additional probing questions were created to obtain more detailed insights into the topic. The draft interview form was then shared with two experts who had experience in qualitative studies in the field of special education and classroom education. Additionally, an academic expert from the Turkish department reviewed the questions to assess their suitability for the research. Based on the feedback received from the three experts, the questions were refined, and a pilot study was conducted with three teachers. The interviews were conducted face-to-face, adhering to Kvale's (1996) criteria for effective interviewing. These criteria included maintaining focus on the research objectives throughout the interview process, capturing voice recordings and taking notes, eliciting comprehensive and detailed responses, and refraining from interfering with the participants' ideas. With the participants' consent, the interviews were audio recorded to minimize data loss. Through inductive analysis of the pilot interview data transcripts, the number of questions was reduced from six to five, as two questions were found to have similar structures. Additionally, an additional probe question was added to question 3. The final interview questions are provided in Table 2.

Before conducting the interviews, an informed consent form was provided to the researchers, ensuring that they were adequately informed about the study. To arrange the interviews, initial contact was made with the school principals via telephone requesting an appointment. Upon receiving positive responses, face-to-face meetings were scheduled with the principals to present information about the research, the ethics committee report, and the permission obtained from the Ministry of National Education. Preliminary interviews with the teachers in the relevant field were conducted in the teachers' room of the principal schools. Appointments were then scheduled with the teachers who expressed their willingness to participate in the study. The interviews occurred on the agreed-upon dates and times and were conducted face-to-face within the schools where the teachers were employed. A suitable room was allocated in the schools for conducting the interviews in privacy. The duration of the interviews ranged from 25 to 30 minutes. Detailed information regarding these interviews is provided in Table 3.

Data Analysis

The teachers' responses to the interview questions are documented in a Microsoft Office Word table, with each questionnaire assigned a unique code. Subsequently, recurring themes, suggestions, and concepts were identified and grouped together. The grouped data were then subjected to content analysis following the guidelines proposed by Miles and Huberman (1994) and Silverman (2011). The information

Table 1.
Demographic Information of Participants

Participants	Age	Gender	Professional Experience	A Year of Working with Learning Disabilities
K-1	35	Male	10	5
K-2	27	Female	3	4
K-3	41	Female	15	4
K-4	45	Female	23	3
K-5	39	Female	18	2
K-6	50	Female	30	5
K-7	32	Male	7	6
K-8	28	Female	5	2
K-9	34	Female	12	5
K-10	52	Female	30	4
K-11	34	Female	9	2
K-12	40	Female	18	1
K-13	37	Female	16	1
K-14	36	Male	13	3
K-15	43	Female	21	5
K-16	38	Male	13	2

Table 2.
Interview Questions of the Study

Q.1. How do you define metacognitive strategies?

- What do you associate with metacognitive strategies?
- What do you think about reading comprehension strategies?

Q.2. What do you think about the use of metacognitive strategies?

- What do you think about strategy training in the education of your students?
- Can you tell us about your teaching practice?
- Do the strategies you use have changed characteristics depending on the reading activity (before, during, or after reading)?

Q.3. What do you think about the effect of teaching metacognitive strategies on the reading comprehension skills of LD students?

- What are the necessary conditions for reading comprehension? What do you think about the effect of strategy use on reading comprehension?
- What do you think about the effect of attention skills in strategy training?

Q.4. What should be considered when using metacognitive strategies for reading comprehension?

- Can you talk about the timing of metacognitive strategy use?
- Should strategy use be planned in advance or should it be done according to the current situation, and why?

Q.5. What do you think are the problems and deficiencies in the use of metacognitive strategies for reading comprehension?

- What causes these problems?
- What can be done to eliminate them?

Table 3.
Interview Times and Locations

	Date	Interview Times	Interview Locations
K-1	8 January 2022	13:34	School director room
K-2	9 January 2022	16:25	Assistant director room
K-3	8 January 2022	15:48	Teachers' rooms
K-4	5 January 2022	18:14	Teachers' rooms
K-5	4 January 2022	17:25	Assistant director room
K-6	4 January 2022	17:36	Assistant director room
K-7	4 January 2022	19:25	School director room
K-8	4 January 2022	11:37	School director room
K-9	28 December 2021	13:08	Assistant director room
K-10	27 December 2021	14:41	Assistant director room
K-11	19 December 2021	16:23	Assistant director room
K-12	19 December 2021	09:15	Assistant director room
K-13	18 December 2021	11:07	Teachers' rooms
K-14	18 December 2021	12:28	Teachers' rooms
K-15	15 December 2021	25:45	School director room
K-16	15 December 2021	18:15	School director oom

derived from the analysis was interpreted and categorized using an inductive approach, as advocated by Stake (2011).

In qualitative research, the organization of data is crucial due to the generation of in-depth information. Data organization entails categorizing and coding the produced data. After transcribing the audio recordings into written texts, the researcher developed a form that encompassed a descriptive index and information notes. The descriptive index comprised summaries of the texts and relevant abbreviations, while the information notes included the researcher's comments in the form of words and sentences. This form was consulted during the process of category formation, and potential categories aligned with the semi-structured interview questions were noted. This iterative process was repeated three times to finalize the categories. Subsequently, codes were generated based on the established categories. Themes were then derived by the researcher, drawing from the statements obtained from the interviews. Themes represent the conceptual patterns identified within the data (Bogdan & Biklen, 2007). During this stage, the code file was meticulously examined, and codes that could be grouped under the same category were consolidated under a single heading. These headings were further evaluated to establish the scope of the themes, resulting in the creation of main and subheadings. Major headings capture the primary themes, while minor headings correspond to subsidiary themes.

Reliability Credibility

To ensure the reliability of the data generated through qualitative research methods, it is crucial to establish consistency in the identified themes and opinions. A minimum of 20% of the produced data should be compared for this purpose. Accordingly, six randomly selected interview forms were shared with two experts specialized in qualitative studies. The themes and opinions derived by the researcher were compared with those of the experts. The formula reliability = (agreement/agreement + disagreement) × 100 (Kırcaali-İftar & Tekin, 1997) was employed to assess the consistency of the independent coding. The results indicated an 87% agreement between the researcher and the experts, signifying a high level of coder reliability. In cases where consensus was reached, no modifications were made to the identified themes, whereas for themes without consensus, shared themes were developed in collaboration with the experts. Subsequently, the data analysis phase was concluded, and the research findings were obtained.

Research Ethics

This research was approved by the Ethics Committee of Hatay Mustafa Kemal University Social and Human Sciences Scientific Research and Publication Ethics Committee on 06/12/2021 with number 13/08. All ethical rules were followed during the research.

Results

This study included teachers' statements about "their views on their competence in defining metacognitive strategies, their views on the level of effective use of teaching metacognitive strategies, their views on the effect of using metacognitive strategies on the reading comprehension skills of students with learning difficulties, what they think about the points to consider when using metacognitive strategies, and their views on the problems they encounter when using metacognitive strategies."

Views on the Definition of Metacognitive Strategies

An endeavor was undertaken to ascertain teachers' perspectives on their competence in defining metacognitive strategies. To achieve this objective, teachers were prompted to provide their understanding and definition of a metacognitive strategy. The analysis of their responses revealed that teachers tended to organize metacognitive strategies into two distinct sub-themes. Table 4 presents detailed information regarding the theme of defining metacognitive strategies, including the identified sub-themes and corresponding categories.

When analyzing Table 4, it can be said that the majority of the teachers have prior knowledge about the use of strategies. It can be seen that there are four teachers who can give the correct definition of metacognitive strategies. T-7, one of the teachers who was able to define the strategies correctly, expresses his opinion as follows: "I have read books and done research on the use of strategies. For example, I use activities such as skimming, predicting, and making predictions about the text before reading with my student with learning difficulties to ensure both motivation and the formation of preliminary information about the text in his/her mind. In this way, he/she understands the text better. In short, we can define learning as 'learning to learn' for students."

Some teachers stated that they had an idea about using strategies, that it was a useful method, and that it facilitated learning for children with learning difficulties. For example, (T-12), "It has been 5 years since I graduated from the Faculty of Education. Of course, we have forgotten some information and some of it is being updated. Strategic education is essential for children with learning difficulties and other children. I think there should be in-service courses for us teachers on how to use such important topics effectively, and we should be trained by experts on how to use them better. Although we mention the name of these strategies, it cannot be said that we use them very well, but we can define these strategies as facilitating and simplifying the subject when teaching some subjects to children with learning difficulties" and

Table 4.
Statements on the Definition of Metacognitive Strategies

Main Theme	Sub Theme	Category
Views on the definition of metacognitive strategy	Instructional Process	Learning Method
		Made Adaptation
		Instructional adaptations
	The lack of knowledge	I do not know, no definition

emphasized the importance of strategy teaching and stated that they should have sufficient knowledge. Five teachers responded to the question of defining strategies as adaptations made to teach. For example, (T-9) said, "Pupils with learning difficulties do not understand the subjects I teach. Especially in class, their attention is very distracted, so I make adaptations in the classroom. I make them sit in the front rows, I make them sit far away from the window, things like that … ." Some teachers stated that they had no knowledge about the use of strategies. "I mean, we were untaught how to use cognitive strategies. It has been 30 years since I graduated, we donot know much about it, they did not have such children in class in the past …" (T-5). As can be seen from the statements, some teachers have no knowledge about metacognitive strategies.

Implementation of Metacognitive Strategies

Teachers were specifically inquired about their implementation of strategies aimed at enhancing reading skills. Their responses to the use of metacognitive strategies were categorized into two sub-themes centered on the overarching theme of employing metacognitive strategies: reading process and lack of knowledge. The comprehensive details regarding the theme of using metacognitive strategies, including the sub-themes and corresponding categories, can be found in Table 5.

When analyzing Table 5, it can be seen that most metacognitive participating teachers used different methods to help students with learning difficulties to understand what they read. It can be seen that there are four teachers who used all aspects to improve reading comprehension. These teachers stated that they used different strategies with children with learning difficulties during the reading activity. For example (T-15) said, "When I do reading activities with my pupil with learning difficulties, I talk about the text before reading to ensure that he/she understands what he/she is reading. We make predictions together, and I make him think about the picture of the text. When we start reading, if there are words or sentences that he/she cannot understand, I ask him/her to underline them. After reading, we talk about whether the predictions we made were correct or not." Some teachers, on the other hand, treated the use of strategies as repeat reading. For example (T-10) explained that "Pupils with learning difficulties are very bad at understanding what they read. I read the passage repeatedly. First, I read it to myself, then I read it 3-5 times over and over again, then I read it aloud 1-2 times if there is time. I ask them to underline the parts they do not understand. It is better that way." Two teachers stated that they did not use any strategies when applying metacognitive strategies. "I teach directly to the children, I do not know about the strategies" (T-3 and T-5).

Effect of Using Metacognitive Strategies on Reading Comprehension in Children with LD

The majority of the teachers who participated in the study stated that strategy use had a positive effect on reading comprehension and some academic skills of students with and without learning disabilities. Table 6 provides information on the main theme, sub-themes, and categories related to the effect of strategy use on the reading comprehension skills of children with learning disabilities.

Table 5.
Implementation of Metacognitive Strategies

Main Theme	Sub-theme	Category
Implementation of Metacognitive Strategies	Reading process	Before reading
		During reading
		Repetitive reading
	The lack of knowledge	No opinion

Teachers stated that the use of strategies improved students' high-level cognitive skills such as vocabulary, communication skills, problem-solving, and increased their comprehension skills. T-3 stated: "I think that students with learning difficulties gain a lot thanks to strategies. These students increase their vocabulary by using methods such as making notes in the text, underlining the words they do not understand. This is good for increasing comprehension." Another participant, T-12, expressed his views as follows: "Children with learning difficulties can acquire skills such as problem solving and increasing attention by using metacognitive strategies during reading activities. By using these high-level cognitive skills, they can discover how to better understand the text they are reading" and expressed that pupils with learning difficulties improve their reading comprehension skills. T-2 says, "The most difficult thing we have when doing reading activities with my student with learning difficulties is that he misses the meaning of the whole sentence. Sometimes he reads correctly but nothing stays in his mind. He himself is aware of this. When we started working with metacognitive strategies in reading activities, we overcame this by making tables and graphs. Now he can make these tables and graphs in a more planned way that he can understand. He can solve the problems related to the parts he does not understand' and stated that they both improved their reading comprehension and found the solution by using strategies when faced with a problem." T-5 expressed his views as "I tell him to read at home to improve his reading comprehension, we have nothing else to add … ."

Considerations for the Use of a Metacognitive Strategy

The teachers who participated in the research were asked what should be considered when using strategies. The teachers' opinions on this subject are presented in Table 7 as main themes, sub-themes, and categories.

Teachers were asked what should be considered when using metacognitive strategies with children with learning disabilities, and the themes and sub-themes related to their opinions are presented in Table 7. T-7 says,"It is crucial to plan when using reading comprehension strategies with children with learning disabilities. You should plan in advance the text you will work on with the pupil. You should choose the strategies you want the student to learn according to the text and the student's level." T-8 commented: "It is very important to be able to choose the appropriate strategy for a reading passage before working on a reading passage with a child, you cannot use the same strategies for an informative passage and a story-like passage." T-10 emphasized the timing of strategies: "I think the most important thing is to use time effectively and efficiently when using strategies. In other words, what the child will use before he/she starts reading, what he/she will do during reading, and which strategy will be used afterwards, are the most

Table 6.
The Effect of Using Metacognitive Strategies on Reading Comprehension in Children with LD

Main Theme	Sub-theme	Category
The effect of using metacognitive strategies on reading comprehension in children with LD	Cognitive processes	Vocabulary
		Attention
		Problem-solving
	The lack of knowledge	No opinion

Table 7.
Considerations for the Use of a Metacognitive Strategy

Main Theme	Sub-theme	Category
Considerations for the Use of a Metacognitive Strategy	Self-regulation skills	Planning
		Strategy choice
		Scheduling
	The lack of knowledge	No opinion

Table 8.
Problems Encountered in Using Metacognitive Strategies

Main Theme	Sub-theme	Category
Problems encountered in using metacognitive strategies	Inadequate support	Self-confidence
		The lack of time
		Negative Family Attitudes
	The lack of knowledge	No opinion

necessary things for correct use." Two teachers who participated in the research stated that they had no idea about this question.

Problems Encountered in Using Metacognitive Strategies

The teachers participating in the study were asked to define the problems they encountered when using the strategy. The teachers' opinions on this subject are shown in Table 8.

Teachers working with children with learning difficulties were asked what kind of problems they encountered in using strategies, and the sub-themes related to the responses received are presented in Table 8. T-12 says, "As you know, we try to support the learning of children with learning disabilities or attention deficit disorders by teaching such strategies. But because of this label, these children always associate themselves with failure in the street among their friends. … Their self-confidence is very low. … This seems to me to be an obstacle for them to learn and use strategies successfully. In other words, not only the use of strategies but also the social adaptation skills should be supported for complete success." T-6 says, "There are 35 students in our class, we have a curriculum to catch up with. We need more time to teach strategies to children with learning difficulties. So there is something incomplete and half-hearted." T-4 says, "When I work on using strategy teaching with children with learning difficulties in the classroom, although I inform the other children, they complain to their parents that the teacher favors them. Most of the parents of the normal pupils have no information about the pupils with special needs and they always come to complain and even complain to the administration. …" T-5 says, "Sometimes these strategies are mentioned in in-service training. I have heard it once, it is useful, but no one explains in detail what it is. How it is applied and to whom it is applied. They just come and ask questions like you and leave."Because of the analysis, the findings from the teachers' statements have so far been presented as themes, sub-themes, and categories. After this stage, the teachers' opinions are discussed in the context of the literature.

Discussion, Conclusion, and Recommendations

Aligned with qualitative research methods, this study was conducted to explore the perspectives of teachers engaged in educating students diagnosed with learning disabilities in Hatay province regarding the impact of strategy instruction on reading and comprehension. The findings were categorized into five distinct themes "identification of metacognitive strategies," "implementation of metacognitive strategies," "the effect of using metacognitive strategies on the reading comprehension skills of children with LD," "points to consider when using metacognitive strategies," and "problems encountered when using metacognitive strategies."

The participants' perspectives on the definition of metacognitive strategies were observed to be clustered within the sub-themes of teaching–learning method, practices for facilitating learning, practices for enhancing learning, and lack of knowledge or no definition. Teachers exhibited variations in their definitions of metacognitive strategies. Some teachers described metacognitive strategies as teaching and learning methods, citing their engagement with relevant literature such as books and articles. They relied on these sources to explain the concept. Conversely, certain teachers acknowledged that it had been a considerable time since they completed their undergraduate studies, resulting in an inability to provide a clear definition. However, they associated metacognitive strategies with methods aimed at facilitating or enhancing learning. A minority of teachers expressed the inability to provide a definition. Half of the participating teachers emphasized that metacognitive strategies contribute to and support learning. Overall, when considering the study results collectively, it can be inferred that half of the participating teachers possessed an understanding of the definition and purpose of metacognitive strategies. It is notable that some teachers erroneously conflated physical classroom adaptations with metacognitive strategies, mistakenly incorporating all actions that enhance learning under the umbrella of "metacognitive strategy use." Such deficiencies in teachers' understanding of metacognitive strategies may impede their practical implementation. Numerous studies emphasize the significance of utilizing metacognitive strategies, particularly in intervention studies involving children with learning disabilities (Arabsolghar & Elkins, 2001; Botsas & Padeliau, 2003; Dermitzaki et al., 2008; Oakhill et al., 2000). Therefore, it is crucial for teachers working with children with learning disabilities to possess knowledge of metacognitive strategies. Existing literature suggests that strategy instruction leads to improved reading comprehension outcomes for both typically developing children and those with learning disabilities (Aydemir & Kubanç, 2014; Baydık, 2011; Başaran, 2013; Çakıroğlu & Ataman, 2008; Rasmussen & Cora, 2017). To enhance achievement through strategy instruction, teachers should possess a solid understanding of the subject matter.

The teachers who participated in the study demonstrated that they categorized the methods they identified as metacognitive strategies for practicing reading skills into three sub-themes: during reading, repeated reading, and others. The sub-theme of the reading process encompassed three categories: pre-reading, during reading, and repeated reading. Four teachers acknowledged using strategies throughout the reading activity. They described these strategies as making predictions and discussing the text before reading during the pre-reading phase. During reading, they mentioned strategies such as underlining unfamiliar words and sentences, posing questions about the text after reading, and asking thought-provoking inferential questions. The majority of participating teachers reported employing techniques like underlining, reading aloud repeatedly, and silently rereading within the sub-theme of repeated reading. The categories under this sub-theme included underlining and using reminders as part of reading order strategies. All these strategies fall under the umbrella of metacognitive strategies used to enhance reading and comprehension. The research findings indicate that most teachers implement strategies. However, there is a need for systematic planning in teaching strategies and incorporating cognitive strategies (Girgin & Şahin, 2020). Although teachers expressed their perspectives on strategy use, they did not elaborate on how they taught strategies to students or how they planned the process. Studies suggest that appropriate strategy selection and planning are crucial for successful strategy implementation (Crowley et al., 1997; Efklides, 2006).

Teachers were asked about the impact of employing metacognitive strategies on the reading comprehension abilities of children with LD. With the exception of two participating teachers, all others asserted that the use of metacognitive strategies positively influenced students' reading and comprehension skills. This viewpoint finds support in existing literature (Antoniou & Souvignier, 2007; Boulware-Gooden et al., 2007; Cavkaytar, 2010; Eilers & Pinkley, 2006; Houtveen & Van de Grift, 2007; McDonald Connor et al., 2004; Pesa & Somers, 2007; Scarlach, 2008; Spörer et al., 2009; Van Keer, 2004). The main theme is further divided into four sub-themes: vocabulary, communication skills and cooperation, problem-solving, and others. Participating teachers indicated that the implementation of metacognitive strategies

in reading skill development enhanced the vocabulary of children with learning difficulties, consequently positively impacting comprehension. Moreover, they noted that the cooperation and communication skills of children with LD improved during reading activities involving strategy use. Teachers emphasized that the application of strategies in reading tasks facilitated problem-solving skills, stimulating critical thinking among students. Metacognitive strategies were found to enhance both comprehension skills and overall performance in diverse areas for children with learning difficulties. Furthermore, teachers reported an increase in the attention span of students with learning disabilities because of employing these strategies.

When asked about considerations when using metacognitive strategies, participating teachers' responses revealed a grouping around four distinct sub-themes: planning, strategy selection, timing, and others. Several teachers expressed that effective planning entails selecting appropriate texts, target words, and strategies to be acquired when working with students. They emphasized that meticulous and systematic planning of these processes can significantly enhance reading and comprehension outcomes, thereby ensuring the effectiveness of strategy implementation. Additionally, some teachers highlighted the criticality of strategy selection, emphasizing the importance of choosing the most suitable strategy based on individual student performance and the specific reading material being studied. The timing aspect was also underscored by certain teachers, asserting the need for a clear understanding of when, where, and how a student should employ strategies during reading activities. Collectively, teachers' responses underscore the importance of various factors in strategy use. However, it is crucial to note that these considerations should be applied in concert. Failing to incorporate all categories identified in teachers' responses may result in ineffective strategy use. Indeed, existing literature emphasizes the significance of planning, appropriate strategy selection, strategic implementation, and timing in effective strategy use (Gelen, 2003; Marge, 2001; Schoenfeld, 1985).

The final inquiry posed to participating teachers in this study concerned the challenges they encountered when employing metacognitive strategies. The analysis of their responses revealed four distinct sub-themes: self-confidence, time constraints, negative family attitudes, and lack of knowledge. Teachers most commonly identified the issue of self-confidence among students with learning disabilities when teaching strategies. These students often experience academic setbacks due to attention and memory difficulties, leading to introversion and self-doubt. These factors continue to manifest during strategy lessons, adversely affecting their learning experience. Nevertheless, teachers noted that as students began using strategies, their previous failures diminished, fostering increased self-assurance. The insufficient time allocation emerged as another significant obstacle to teaching and implementing strategies. Teachers frequently lamented the lack of available time to address the needs of mainstreamed students with learning disabilities within the classroom. An effective strategy instruction necessitates systematic planning and individualized instruction, which requires dedicated time and attention for each student. The scarcity of available time has emerged as a major predicament faced by many teachers. Potential remedies for this predicament include individualized lesson planning and classroom support from teachers. Moreover, teachers may encounter misunderstandings from typically developing students when providing individualized strategy instruction to students with special educational needs. Other students may develop feelings of envy toward their peers with special needs and complain to their parents, resulting in negative criticism directed at teachers. To mitigate these challenges, classroom support or individualized class planning for strategy training should be implemented for students with learning difficulties. It is worth noting that although only a negligible number of teachers responded with "I have no idea" or "I don't know" to previous questions about metacognitive strategies, it is imperative to address the issue of teachers lacking knowledge on the subject. Some teachers openly admitted their lack of familiarity or experience with strategies, indicating a dearth of training, seminars, or in-service programs on the topic. Consequently, it becomes evident that certain teachers lack knowledge or hold misconceptions regarding strategy use. To address these knowledge gaps and rectify misconceptions, targeted teacher training programs focusing on strategy use should be developed, recognizing the needs of educators working in this field.

Upon comprehensive evaluation of the research findings, it becomes clear that more than half of the participating teachers either misdefined or could not provide a definition for metacognitive strategies. Their definitions often revealed misconceptions regarding the nature of these strategies. However, concerning the application of strategies, most teachers demonstrated an attempt to use metacognitive strategies. They emphasized the positive impact of strategy use on reading comprehension, which is consistent with findings from the existing literature (Antoniou & Souvignier, 2007; Dymock, 2007; Eilers & Pinkley, 2006). Notably, diverse interpretations emerged regarding the key considerations for strategy implementation, indicating that the teachers' definitions were more accurate when considered collectively but incomplete when examined individually. The teachers' statements also shed light on the challenges they face in strategy use, primarily stemming from the absence of support personnel in inclusive classrooms. Addressing these challenges may require classroom support or individualized lesson planning. When assessing the overall results of the study, it can be concluded that teachers possess a fundamental understanding of the strategies employed to enhance reading comprehension. Furthermore, their statements indicate an awareness of the importance of strategy use. However, significant deficiencies in the implementation of strategies among teachers are evident. A well-designed teacher training program can effectively address these deficiencies and provide valuable support in this domain.

Based on the study findings, several suggestions can be put forward:

- First, future studies should increase the number of participating teachers working with children with learning disabilities. By expanding the participant pool, the validity and generalizability of the findings can be enhanced.
- Second, in terms of research methodology, future investigations could replicate the study using quantitative instruments in addition to the semi-structured interview and demographic information forms employed in this study. This would allow for a more comprehensive analysis of the data.
- Furthermore, while the current study focused on exploring teachers' knowledge of metacognitive strategies and their perceived impact on reading comprehension, it did not collect data on actual classroom practices or measure student outcomes. Future research should consider incorporating measurements and observations of classroom practices to provide a more holistic understanding of the implementation and effectiveness of metacognitive strategies.
- Considering the study findings, it is recommended to provide teachers with in-service training specifically focused on metacognitive strategies and effective instructional techniques for teaching these strategies to children. Such training programs can enhance teachers' knowledge and pedagogical skills in this area.
- Additionally, it is suggested to establish a collaborative model of cooperation among schools, teachers, and families in the context of strategy instruction for children with learning disabilities. This collaborative approach would facilitate consistent support and communication among all stakeholders ultimately enhancing the effectiveness of strategy teaching and learning outcomes for these students.

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References

Alatlı, R., Güldenoğlu, İ. B., & Kargın, T. (2022). Investigation of reading comprehension skills of good and poor readers in the dimension of components of reading by developing reading skills assessment tool. *Education and in Science*, *47*(211). [CrossRef]

Antoniou, F., & Souvignier, E. (2007). Strategy instruction in reading comprehension: An intervention study for students with learning disabilities. *Learning Disabilities: A Contemporary Journal*, *5*(1), 41–57.

Arabsolghar, F., & Elkins, J. (2001). Teachers's expectations about students' use of reading strategies, knowledge and behaviour in grades 3, 5 and 7. *Journal of Research in Reading*, *24*(2), 154–162. [CrossRef]

Arabsolghar, F., & Elkins, J. (2001). Teachers's expectations about students' use of reading strategies, knowledge and behaviour in grades 3, 5 and 7. *Journal of Research in Reading*, *24*(2), 154–162. [CrossRef]

Astriani, D., Susilo, H., Suwono, H., Lukiati, B., & Purnomo, A. R. (2020). Mind mapping in learning models: A tool to improve student metacognitive skills. *International Journal of Emerging Technologies in Learning*, *15*(6), 4–17. [CrossRef]

Asy'ari, M., Ikhsan, M., & Muhali, M. (2019). The effectiveness of inquiry learning model in improving prospective teachers' metacognition knowledge and metacognition awareness. *International Journal of Instruction*, *12*(2), 455–470. [CrossRef]

Aydemir, H., & Kubanç, Y. (2014). Investigation of metacognitive behaviours in problem solving process. *Electronic Turkish Studies*, *9*(2).

Bakar, M. A. A., & Ismail, N. (2020). Mathematical instructional: A conceptual of redesign of active learning with metacognitive regulation strategy. *International Journal of Instruction*, *13*(3), 633–648. [CrossRef]

Başaran, M. (2013). 4th grade students' use of metacognitive reading strategies and the relationship between these strategies and reading comprehension. *Electronic Turkish Studies8*(8). 321-332.

Baydık, B. (2011). Investigation of students with reading difficulties' use of metacognitive reading strategies and their teachers' reading comprehension teaching practices. *Education and in Science36*(162). 301-319.

Bogdan, R. C., & Biklen, S. K. (2007). *Qualitative research for education: An Introduction to theories and methods* (5th ed). Allyn and Bacon.

Bos, C. S., & Anders, P. L. (1992). Using interactive teaching and learning strategies to promote text comprehension and content learning for students with learning disabilities. *International Journal of Disability, Development and Education*, *39*(3), 225–238. [CrossRef]

Botsas, G., & Padeliadu, S. (2003). Goal orientation and reading comprehension strategy use among students with and without reading difficulties. *International Journal of Educational Research*, *39*(4–5), 477–495. [CrossRef]

Boulware-Gooden, R., Carreker, S., Thornhill, A., & Joshi, R. M. (2007). Instruction of metacognitive strategies enhances reading comprehension and vocabulary achievement of third grade students. *Reading Teacher*, *61*(1), 70–77. [CrossRef]

Çakıroğlu, A., & Ataman, A. (2008). The effect of metacognitive strategy instruction on increasing achievement in students with low reading comprehension achievement level. *Sakarya University Journal of Faculty of Education*, *16*, 1–13.

Cavkaytar, S. (2010). *Implementation of balanced literacy approach in Turkish language teaching: An action research in the 5th grade of primary education*. Anadolu University.

Chan, L. K. S. (1991). Promoting strategy generalization through self-instructional training in students with reading disabilities. *Journal of Learning Disabilities*, *24*(7), 427–433. [CrossRef]

Creswell, J. W., Hanson, W. E., Plano, C., V. L., & Morales, A. (2007). Qualitative research designs: Selection and implementation. *Counseling Psychologist*, *35*(2), 236–264. [CrossRef]

Crowley, K., Shrager, J., & Siegler, R. S. (1997). Strategy discovery as a competitive negotiation between metacognitive and associative mechanisms. *Developmental Review*, *17*(4), 462–489. [CrossRef]

Dermitzaki, I., Andreou, G., & Paraskeva, V. (2008). High and low reading comprehension Achievers' strategic behaviors and their Relation to performance in a reading comprehension situation. *Reading Psychology*, *29*(6), 471–492. [CrossRef]

Dönmez, G. (2017). *Secondary school students' metaphorical perceptions and images towards science course, science, science teacher and scientist*(Master's Thesis). Adnan Menderes Üniversitesi, Graduate School of Natural and Applied Sciences.

Drigas, A., Mitsea, E., & Skianis, C. (2022). Virtual reality and metacognition training techniques for learning disabilities. *Sustainability*, *14*(16), 10170. [CrossRef]

Dymock, S. (2007). Comprehension strategy instruction: Teaching narrative text structure awareness. *Reading Teacher*, *61*(2), 161–167. [CrossRef]

Efklides, A. (2006). Metacognition and affect: What can metacognitive experiences tell us about the learning process? *Educational Research Review*, *1*(1), 3–14. [CrossRef]

Eilers, L. H., & Pinkley, C. (2006). Metacognitive strategies help students to comprehend all text. *Reading Improvement*, *43*(1), 13–29.

Firat, T. (2019). Effects of the TWA strategy instruction on reading comprehension of students with learning disabilities. *Educational Research Quarterly*, *43*(2), 24–54.

Flavell, J. H. (1976). Metacognitive aspects of problem solving. In L. B. Resnick (Ed.). *The nature of intelligence* (pp. 231–235). Lawrence Erlbaum Associates.

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, *34*(10), 906–911. [CrossRef]

Gajria, M., & Salvia, J. (1992). The effects of summarization instruction on text comprehension of students with learning disabilities. *Exceptional Children*, *58*(6), 508–516. [CrossRef]

Garner, R. (1987). *Metacognition and reading comprehension*. Ablex Publishing.

Gelen, İ. (2003). *The effect of cognitive awareness strategies on attitude towards Turkish lesson, reading comprehension and retention* (Doctoral Dissertation). Çukurova Üniversitesi.

Gersten, R., Fuchs, L. S., Williams, J. P., & Baker, S. (2001). Teaching reading comprehension strategies to students with learning disabilities: a review of research. *Review of Educational Research*, *71*(2), 279–320. [CrossRef]

Gill, M. J. (2014). The possibilities of phenomenology for organizational research. *Organizational Research Methods*, *17*(2), 118–137. [CrossRef]

Girgin, D., & Şahin, Ç. (2020). Classroom teacher candidates' levels of using metacognitive reading strategies: A mixed method study. *Journal of Mother Tongue Education*, *8*(4), 1149–1164. [CrossRef]

Görgün, B., & Melekoğlu, M. A. (2019). Examination of studies in the field of specific learning disabilities in Turkey. *Sakarya University Journal of Education*, *9*(1), 83–106. [CrossRef]

Graham, S., & Harris, K. R. (1997). Self-regulation and writing: Where do we go from here? *Contemporary Educational Psychology*, *22*(1), 102–114. [CrossRef]

Güldenoğlu, B., Kargın, T., & Miller, P. (2012). A comparative study of word processing and reading comprehension skills of good and poor readers. *Educational Sciences in Theory and Practice*, *Autumn*, 2807.

Hallahan, D. P., Kauffman, J. M., & Lloyd, J. W. (1996). *Introduction to learning disabilities*. Allyn & Bacon.

Hartman, H. J. (2001). Developing students' metacognitive knowledge and skills. In *Metacognition in learning and instruction* (pp. 33–68). [CrossRef]

Houtveen, A. A. M., & Van de Grift, W. J. C. M. (2007). Effects of metacognitive strategy instruction and instruction time on reading comprehension. *School Effectiveness and School Improvement*, *18*(2), 173–190. [CrossRef]

Hoy, A. W., Davis, H., & Pape, S. J. (2006). Teacher knowledge and beliefs. In P. A. Alexander & P. H. Winne (Eds.). *Handbook of educational psychology* (pp. 715–737). Lawrence Erlbaum Associates Publishers.

Idris, N., Md Isa, H., Zakaria, N. N. N., Mohd Taib, N. A., Ismail, S., & Rahmat, N. H. (2022). An investigation of the use of cognitive and metacognitive strategies in foreign language learning. *International Journal of Academic Research in Business and Social Sciences*, *12*(2), 70–89. [CrossRef]

Jenkins, J. R., Barksdale, A., & Clinton, L. (1978). Improving reading comprehension and oral reading: Generalization across behaviors, settings, and time. *Journal of Learning Disabilities*, *11*(10), 607–617. [CrossRef]

Johnson, L., Graham, S., & Harris, K. R. (1997). The effects of goal setting and self-instruction on learning a reading comprehension strategy: A study of students with learning disabilities. *Journal of Learning Disabilities*, *30*(1), 80–91. [CrossRef]

Kent, A. M. (2004). Improving teacher quality through professional development. *Education*, *124*(3). 427-435.

Keogh, B. K. (1994). A matrix of decision points in the measurement of learning disabilities. *Frames of reference for the assessment of learning disabilities: New views on measurement issues* Brookes Publishing (pp. 15–26).

Kircaali-Iftar, G., & Tekin, E. (1997). *Single-subject research methods*. Türk Psikologlar Dernegi Yayinlari.

Kirk, S. A. (1963). Behavioral diagnosis and remediation of learning disabilities. In Proceedings of the annual meeting: Conference on exploration into the problems of the perceptually handicapped child (vol. *1*, pp. 1–7). Evanston, IL.

Kvale, S. (1996). The 1,000-page question. *Qualitative Inquiry*, *2*(3), 275–284. [CrossRef]

LaçİN, E., & ÇetİN, E. (2022). An examination of teachers' use of metacognitive strategies in supporting the reading comprehension skills of children with learning disabilities. *International Journal of Contemporary Educational Research*, *9*(3), 519–531. [CrossRef]

Lennox, C., & Siegel, L. S. (1993). Visual and phonological spelling errors in subtypes of children with learning disabilities. *Applied Psycholinguistics*, *14*(4), 473–488. [CrossRef]

Livingston, J. A. (2003). *Metacognition: An overview* University at Buffalo State University of New York.

Lucangeli, D., Fastame, M. C., Pedron, M., Porru, A., Duca, V., Hitchcott, P. K., & Penna, M. P. (2019). Metacognition and errors: The impact of self-regulatory trainings in children with specific learning disabilities. *ZDM*, *51*(4), 577–585. [CrossRef]

Lytra, N., & Drigas, A. (2021). STEAM education-metacognition–specific learning disabilities. *Scientific Electronic Archives*, *14*(10). [CrossRef]

Marge, J. J. (2001). *The effect of metacognitive strategy scaffolding on student achievement in solving complex math word problems* (Doctoral Dissertation). University of California, Riverside.

Mastropieri, M., & Scruggs, T. E. (1997). Best practices in promoting reading comprehension in students with Learning Disabilities: 1976–1996. *Remedial and Special Education*, *18*, 197–213. [CrossRef]

McDonald Connor, C., Morrison, F. J., & Petrella, J. N. (2004). Effective reading comprehension instruction: Examining child X instructions. *Journal of Educational Psychology*, *96*(4), 682–698. [CrossRef]

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Sage.

Muhid, A., Amalia, E. R., Hilaliyah, H., Budiana, N., & Wajdi, M. B. N. (2020). The effect of metacognitive strategies implementation on students' reading comprehension achievement. *International Journal of Instruction*, *13*(2), 847–862. [CrossRef]

Nicolielo-Carrilho, A. P., Crenitte, P. A. P., Lopes-Herrera, S. A., & Hage, S. R. V. (2018). Relationship between phonological working memory, metacognitive skills and reading comprehension in children with learning disabilities. *Journal of Applied Oral Science: Revista FOB*, *26*, e20170414. [CrossRef]

Oakhill, J., & Cain, K. (2000). Children's difficulties in text comprehension: Assessing causal issues. *Journal of Deaf Studies and Deaf Education*, *5*(1), 51–59. [CrossRef]

Öktem, Ü. (2005). Phenomenology and Edmund Husserl'de Evidenz problem. *Ankara University Journal of Language and History-Geography Faculty*, *45*(1), 27–55.

Özkubat, U., Sanır, H., & Özmen, E. (2021). Teachers' opinions on instructional adaptations for students with learning disabilities. *AHI Evran University Journal of Institute of Social Sciences*, *7*(3), 881–900. [CrossRef]

Patton, M. N. (1990). *Qualitative evaluation and research methods*. SAGE Publications.

Pesa, N., & Somers, S. (2007). *Improving reading comprehension through application and transfer of reading strategies (A Research Project)*. Saint Xavier University & Pearson Achievement Solutions.

Pintrich, P. R., Anderman, E. M., & Klobucar, C. (1994). Intraindividual differences in motivation and cognition in students with and without learning disabilities. *Journal of Learning Disabilities*, *27*(6), 360–370. [CrossRef]

Pressley, M. (2000). What should comprehension instruction be the instruction of? In M. L. Kamil, P. B. Mosenthal, P. D. Pearson & R. Barr (Eds.). *Handbook of reading research* (vol. *III*). Lawrence Erlbaum Associates, Publishers.

Pressley, M., & Gaskins, I. W. (2006). Metacognitively competent reading comprehension is constructively responsive reading: How can such reading be developed in students? *Metacognition and Learning*, *1*(1), 99–113. [CrossRef]

Reid, R., & Lienemann, T. O. (2006). Self-regulated strategy development for written expression with students with attention deficit/hyperactivity disorder. *Exceptional Children*, *73*(1), 53–68. [CrossRef]

Salman, U., Özdemir, S., Salman, A. B., & Özdemir, F. (2016). Özel öğrenme güçlüğü "Disleksi". *İstanbul Bilim Üniversitesi Florence Nightingale Tıp Dergisi*, *2*(2), 170–176.

Scharlach, T. D. (2008). START comprehending: Students and teachers actively reading text. *Reading Teacher*, *62*(1), 20–31. [CrossRef]

Schoenfeld, A. (1985). *Mathematical problem solving*. Academic Press.

Shamir, A., & Dushnitzky, G. (2019). Metacognitive intervention with e-books to promote vocabulary and story comprehension among children at risk for learning disabilities. In *Reading in the digital age: Young children's experiences with e-books* (pp. 237–257). Springer. [CrossRef]

Silverman, D. (2011). *A guide to the principles of qualitative research* 5 th edition SAGE Publications.

Soto, C., Gutiérrez de Blume, A. P., Jacovina, M., McNamara, D., Benson, N., & Riffo, B. (2019). Reading comprehension and metacognition: The importance of inferential skills. *Cogent Education*, *6*(1), 1565067. [CrossRef]

Spörer, N., Brunstein, J. C., & Kieschke, U. (2009). Improving students' reading comprehension skills: Effects of strategy instruction and reciprocal teaching. *Learning and Instruction*, *19*(3), 272–286. [CrossRef]

Stake, R. E. (2011). Qualitative research and case study. *Silpakorn Educational Research Journal*, *3*(1–2), 7–13.

Swanson, H. L. (1999b). Reading research for students with LD: A meta-analysis of intervention outcomes. *Journal of Learning Disabilities*, *32*(6), 504–532. [CrossRef]

Swanson, H. L., & Cochran, K. F. (1991). Learning disabilities, distinctive encoding, and hemispheric resources. *Brain and Language*, *40*(2), 202–230. [CrossRef]

Uçar Rasmussen, M., & Cora İnce, N. (2017). Özel öğrenme güçlüğü olan Bireylere Üstbilişsel Okuduğunu anlama Stratejilerinin Öğretiminde sesli düşünme Yönteminin etkililiği. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, *17*(4), 2180–2201. [CrossRef]

Van Keer, H. (2004). Fostering reading comprehension in fifth grade by explicit instruction in reading strategies and peer tutoring. *British Journal of Educational Psychology*, *74*(1), 37–70. [CrossRef]

Yıldırım, A., & Simsek, H. (2018). *Qualitative research methods in social sciences* (11th ed). Seckin Publishing.

Zohar, A. (1999). Teachers' metacognitive knowledge and the instruction of higher order thinking. *Teaching and Teacher Education*, *15*(4), 413–429. [CrossRef]