

Critical Reading Self-Efficacy and Metacognitive Reading Strategies: A Relational Study

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Abstract

Critical reading strengthens students' metacognitive reading strategies and allows them to reflect on their current reading strategies. The relationship between metacognitive reading techniques and critical thinking and reading must be stressed, given that critical thinking is an intentional and self-regulated choice mechanism. The aim of this study was to investigate the relationship between pre-service teachers' critical reading skills and their use of metacognitive reading strategies. The relational survey model was used and 124 preservice teachers studying at the Turkish Language Education Department of a University located in the east of Turkey participated in this study. Critical Reading Self-Efficacy Perception Scale (CRSPS) and Metacognitive Reading Strategies Questionnaire (MRSQ) were used in data collection tools. The data were analyzed using Pearson Correlation analysis and simple linear regression analysis. The findings showed that there was a positive and significant relationship between the participants' critical reading perceptions and their use of metacognitive reading strategies. It was determined that the critical reading skills of pre-service teachers should be improved for which educational content should be developed. In addition, the preservice teachers should be offered training metacognitive reading. In order to obtain more in depth information, qualitative or mixed method studies should be carried out in the future.

Keywords: Critical Reading, Metacognitive Reading Strategies, Turkish Teacher Candidates.

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INTRODUCTION

Reading had existed before the invention of the printing press in human history (Blaha & Bennett, 1993). Nowadays, it plays a crucial role for modern societies to acquire information (Alfassi, 2004). It also contributes to the development of social relations and individuals' technology use (SCANS, 1991). Since reading is a process that follows the stages of perception, interpretation and evaluation (Bamberger, 1990), many definitions have been put forward. However, in general, reading refers to "a process based on vocalizing written and printed symbols, adhering to certain rules" (Razon, 1982). It consists of different dimensions, namely operation, interaction and meaning (Grabe, 2009; Hudson, 2007; Koda, 2005). Instead of being a skill used only in the academic life, reading is a skill that individuals need in different areas during their life. Considering that reading is a meaning-making process (Durkin, 1989; Haris & Sipay, 1990; Hudson, 2007; Razi, 2008; Grabe, 2009; Güneş, 2014), it may be argued that critical reading is a higher skill than this process (Ateş, 2013). Similarly, Wheeler (2007) emphasized that critical reading differs from reading in terms of purpose, discipline, mental skills involved in the process and the achieved outcomes.

Critical Reading

Critical reading is a dynamic process with an inductive and deductive flow in which metacognitive reading strategies (MRS) are also employed, and the reader uses analysis, synthesis, evaluation and interpretation skills. Reasons such as the rapid increase in the number of multiple sources of information and the frequency of technology use in daily life indicate the need for critical reading skills. At this point, questioning the information, checking its source and comparing information sources becomes important as well as investigation, research, critical reading and critical thinking skills of the individual.

In the literature, several definitions of critical reading have been proposed (Darch & Kameenui 1987; Resnick, 1987; Beck, 1989; Comber, 1993; Mc Hagoood, 2002; Pirozzi, 2003; De Vogd, 2008; Luke, 2012) and it is defined as a process that prompts the individual to think through questions, examines the positive and negative aspects of the topic with a neutral point of view by questioning the author's purpose, and includes high-level questions in which individuals makes a judgment based on their own thinking system. At this point, it can be said that critical reading is the process of assessing the authenticity of the material being read and making a judgment about it (Bond & Wagner, 1966). Critical readers check the accuracy, logicalness, reliability of the information obtained from the text and the author's purpose of writing the text (Ünalın, 2006) and examine the evidence with strong and systematic doubts (Çifçi, 2006). Özdemir (1987) explained the critical reading process and listed the following steps of critical reading:

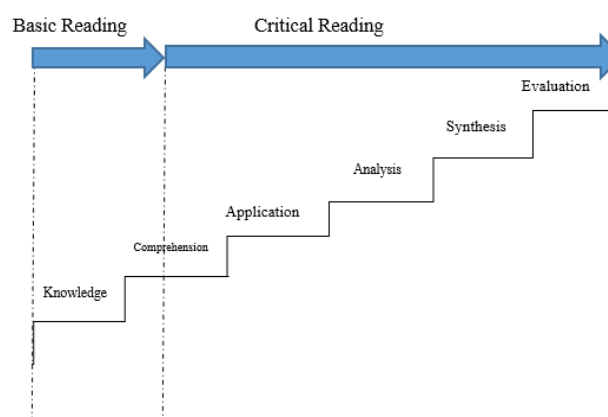


Figure 1. The steps of critical reading

As seen in Figure 1, individuals with critical reading skills can move from the basic reading stage to application, analysis, synthesis and evaluation. Therefore, critical reading skill is a functional skill that should be used in the classroom. Some questions used in the critical reading process both encourage students and improve their interpretation skills. (Flamond, 1962). Also Shotka (1960) states that critical reading improves students' ability to make comparisons, find similarities and differences, generalize and make decisions. Teachers have important responsibilities during the critical reading process. In order to conduct an efficient critical reading process, the following questions can be asked to students (Cervett, Pardales & Damico, 2001; Williams, 2002):

- Why am I reading this work, what is my purpose for reading?
- What is the idea that is wanted to be given in the work?
- Are the information sources in the work reliable?
- Is the information in the work up to date?
- What is the author's purpose for writing the work?

It should be born in mind that the individual needs cognitive and metacognitive thinking skills to be able to answer these questions.

Metacognitive Strategies

There are many studies on metacognition in the literature (Brown, 1987; Schraw & Dennison, 1994; Schraw & Moshman, 1995; Davidson & Sternberg, 1998; Kuhn, 2000; Miller, 2000; Eilers & Pinkley, 2006). Metacognition involves the awareness of individuals about their own learning styles and organizing their educational activities in line with these styles (Flavell, 1976; Özbay & Bahar, 2012). Metacognition controls the individual's thoughts, knowledge and actions (Weinert 1987; Newel & Simon, 1972). On the other hand, metacognitive awareness refers to the ability of an individual to have an idea about what and how well he/she does and to develop a guideline for himself/herself. Individuals with higher levels of metacognitive awareness have the ability to self-control (Baltaş, 2004). Therefore, metacognition is a mechanism of knowledge and control (Baker, 2002) and refers to the individual's monitoring and following his/her own cognition process. Similarly, metacognitive information informs the individual about where and when to use the strategies in reading comprehension (Pressley & Gaskins, 2006). Blakey and Spence (1990) describe metacognitive strategies as talking about thinking, identifying what is known and what is not known, planning and self-regulation, and debriefing the thinking process. Drawing attention to the use of metacognitive strategies in reading, Jacobson (1988) argues that good readers know how to control the process. The use of these strategies in the reading process reveals reading strategies which are used by students to monitor and control what and how much they have learned in the learning process.

Learners should know what and for what purpose they are learning, why they are speaking, what they are writing and reading. In other words, they should have learning purposes and strategies (Kana, 2014). In terms of reading, reading strategies are methods and techniques that help the reader to solve the problems that occur in the reading and to grasp the meaning by facilitating the process. The effective use of reading strategies ensures that readers enjoys reading by increasing the efficiency. Similarly, research on reading comprehension and reading techniques indicates that the use of reading comprehension strategies has a positive influence on the reading process (Temizkan, 2008; Cantrell & Carter, 2009; Topuzkanamış, 2010; Akkaya, 2011, Baydık, 2011). It is known that readers who are aware of reading comprehension and know how to read the material address the text more carefully and consciously in order to strengthen their comprehension skills, criticize and evaluate, and use some strategies to deal with comprehension problems (Karatay, 2009). Furthermore, MRS provide individuals the opportunity to monitor and control their reading processes (Özen & Durkan, 2016) and enable them to intervene in the process when necessary and evaluate it in all its aspects (Başaran, 2013). In this regard, the concepts of good reader and poor reader emerged in the literature on the

ability to use cognitive strategies (Paris, 1984; Pressley, 1995). In this respect, good readers use reading strategies more effectively and occasionally check what they understand. In addition, they follow the text and use estimation skill (Pressley, 1995). On the other hand, poor readers fail to use these skills effectively and identify contradictory information (Snow, Burns & Griffin, 1998). Considering that the critical thinking skill is a deliberate and self-regulated decision mechanism (Facione, 1990), the correlation between MRS and critical thinking and reading needs to be emphasized.

Significance of the Study

Although there are several studies examining students' use of MRS (Sonleitner, 2001; Çoğmen, 2008; Hong, 2008; Kummin & Rahman, 2010; Temur & Bahar, 2011), research on the relationship between pre-service teachers' MRS and critical reading skills is quite limited (Parson, 1985; Karabay, 2015). Critical reading improves students' MRS and provide the opportunity to think about existing reading strategies (Karabay, 2015). In order to bridge the gap in the literature, the relationship between preservice teachers' critical reading skills and MRS was investigated in this study.

The Purpose of the Study

This study aimed to examine the relationship between critical reading skills and metacognitive reading strategies of preservice Turkish language teachers.

Accordingly, answers to the following questions were sought:

1. What are the perceptions of preservice Turkish language teachers about critical reading skills?
2. What is the level of preservice Turkish language teachers' use of metacognitive reading strategies?
3. Is there a relationship between the perceptions of preservice Turkish language teachers about critical reading skills and their use of metacognitive reading strategies?
4. Do preservice Turkish language teachers' critical reading skills predict their perceptions of metacognitive reading strategies?

METHOD

Research Model

In the study the relational survey model, one of the quantitative research designs, was used. Survey is based on the quantitative investigation of trends, attitudes, views or behaviors in the universe through the applications with a sample or the entire universe (Creswell, 2017). The relational survey model, on the other hand, aims to identify the change and degree of change between two or more variables (Fraenkel & Wallen, 2009; Karasar, 2017).

Research Sample

The universe of the study consisted of students at the Turkish Language Education Department of the Faculty of Education in a city located in the east of Turkey. Convenience sampling, one of the purposive sampling methods, was used in sample selection. A total of 124 preservice teachers participated in this study. Demographic information of the participants is presented in Table 1.

Table 1. Participants' Demographic Information

Variable	Category	f	%
Gender	Male	71	57.26
	Female	53	42.74
Grade	1.	22	17.74
	2.	28	22.58
	3.	42	33.87
	4.	32	25.81
Number of books read in a month	None	4	3.23
	1	30	24.19
	2	43	34.68
	3 and more	47	37.90
Time devoted to TV and social media in a day	0-60 minutes	30	24.19
	61-120 minutes	53	42.74
	121- 180 minutes	28	22.58
	181 minutes and more	13	10.49
Total		124	100

Data Collection Tool

Critical Reading Self-Efficacy Perception Scale (CRSPS) and Metacognitive Reading Strategies Questionnaire (MRSQ) were used in data collection.

Critical Reading Self-Efficacy Perception Scale: In order to examine the critical reading self-efficacy of the participants, the CRSPS, which was developed by Karadeniz (2014), was used. The scale, which is scored on a 5-point Likert-type scale, consists of a total of 33 items, 25 of which are positive and 8 are negative. The negative items are reverse scored. Inquiry, analysis, evaluation, identifying parallels and differences and illation are the five subscales of the scale. The scale was graded as “Strongly Disagree=1”, “Disagree=2”, “Neutral=3”, “Agree=4” and “Strongly Agree=5” and the Cronbach's Alpha reliability coefficient of the scale was calculated as .93.

Metacognitive Reading Strategies Questionnaire: In order to determine MRS of preservice Turkish language teachers, the MRSQ, developed by Taraban, Kerr & Rynearson (2004) was adapted into Turkish by Çöğmen (2008). The five-point Likert-type scale consists of 22 items and two subscales: "analytical strategies" (Items 1-16) and "pragmatic strategies" (Items 17-22). The items in the analytical strategies subscales aim to determine the metacognitive strategies that students use while reading the course texts, whereas the items in the pragmatic strategies subscales focus on more practical strategies for remembering. The scale uses a 5-point Likert scale type and ranges from 1 (“I never do this”) to 5 (“I always do this”). The scale's Cronbach's Alpha reliability coefficient was calculated to be .81.

In the evaluation of the responses, the intervals were assumed to be equal and the score interval was calculated as .80 for the arithmetic mean: $(\text{Score Interval} = (\text{the Highest Value} - \text{the Lowest Value})/5 = (5 - 1)/5 = 4/5 = .80)$. Accordingly, the evaluation range was as follows: 1.00-1.80 “Strongly disagree”, 1.81-2.60 “Disagree”, 2.61-3.40 “Partially Agree”, 3.41-4.20 “Agree” and 4.21-5.00 “Strongly agree”.

Validity and Reliability

In this study, some procedures were followed to ensure validity and reliability. First, the data set was examined and the extreme values were excluded. Then, the Cronbach's Alpha reliability coefficients of the scales were calculated. The Cronbach Alpha reliability coefficients of the 33-item CRSPS were as follows: inquiry subscale=.92, analysis subscale=.91, evaluation subscale=.92, finding similarities and differences subscale=.92, illation subscale =.92 and the total scale=.93. The reliability coefficient of the MRSQ was calculated as .89 for the total scale and .91 and .94 for the analytical strategies and pragmatic strategies subscales, respectively. Based on these findings, it can be argued

that the Cronbach's Alpha reliability coefficients of the scales were quite high (Can, 2016, p.391) and that the scales were reliable and valid.

Data Collection

Ethical permission was obtained from Firat University Non-Interventional Research Ethics Committee (approval no. 134335 dated 13/01/2022). The data were collected in the fall semester of the 2021-2022 academic year. The participation was on a voluntary basis. Due to the COVID-19 pandemic, the data were collected via the online platform (Google Forms). Preservice teachers at the Turkish Language Education Department were asked to complete "CRSPS" and "MRSQ" through Google Forms.

Data Analysis

The SPSS package program was used to analyze the data. In the first stage, the data were entered to the package program. Outliers in the data were removed. In the study, in which 143 preservice Turkish Language teachers participated, 19 invalid and missing data were not included in the analysis. The “ ± 1 ” range was considered in the calculation of the outliers and to control of the skewness and kurtosis values (Cokluk, Şekercioğlu & Büyüköztürk, 2016). As a result, 124 of the collected 143 data were analyzed.

Table 2. Values of the CRSPS and the MRSQ

Scale	Subscale	n	Skewness	Kurtosis
CRSPS	Inquiry	124	.210	-.276
	Illation	124	.251	-.414
	Analysis	124	-.035	-.751
	Evaluation	124	-.579	.239
	Finding Similarities and Differences	124	-.201	-.809
	Total	124	.196	-.978
MRSQ	Analytical Strategies	124	-.046	-.579
	Pragmatic Strategies	124	-.511	-.207
	Total	124	-.102	-.776

The analyses showed that the values for the overall scales and their subscales were within the 5% confidence interval. Therefore, the data were normally distributed. Besides, Cronbach's Alpha internal consistency coefficients were calculated to ensure the validity and reliability of the scales. Correlation analysis was utilized to examine the relationship between the CRSE of the participants and their ability to use MRS. In addition, in order to investigate whether the participants' use of MRS predicted their critical reading perceptions, simple linear regression analysis was performed.

The Pearson Product-Moment Correlation Coefficient (r) is used to measure the relationships between the variables. In the interpretation of the correlation coefficient, .00 means that there is no relationship between the variables, .01-.29 refers to a small relationship, .30-.70 indicates a medium relationship, .71-.99 denotes a large relationship, and 1.00 reveals a perfect relationship (Köklü, Büyüköztürk & Çokluk, 2006).

FINDINGS

This section presents finding on the participants' perceptions of critical reading skills, their use of MRS and the relationship between their critical reading perceptions and their use of MRS. In addition, whether the use of metacognitive strategies had a predictive effect on the participants' critical reading skills was also reported. Table 3 shows the averages and standard deviations of the participants' critical reading perceptions.

Table 3. CRSPS Scores of the Participants

Subscale	n	\bar{X}	sd
Inquiry	124	3.91	.37
Illation	124	4.07	.51
Analysis	124	4.22	.51
Evaluation	124	3.83	.41
Finding Similarities and Differences	124	4.24	.57
Total	124	4.05	.41

The mean of participants' CRSPS was calculated as =4.05. In addition, the mean scores of the participants in the sub-scales were as follows: inquiry =3.91, illation =4.07, analysis =4.22, evaluation =3.83 and finding similarities and differences =4.24. Considering the intervals used in the interpretation of the five-point Likert-type scale, the participants generally “agreed” with the statements in the CRSPS. The means and standard deviations of the participants’ use of MRS are presented in Table 4:

Table 4. The Participants’ Scores on the Use of MRS

Subscale	n	\bar{X}	sd
Analytical Strategies	124	4.22	.48
Pragmatic Strategies	124	4.02	.71
Total	124	4.12	.53

The mean values of the participants’ MRS were found to be =4.12 for the overall scale, =4.22 for the analytical strategies subscale, and =4.02 for the pragmatic strategies subscale. Considering the intervals used in the interpretation of five-point Likert-type scale, it was revealed that the participants “often do” the statements in the Metacognitive Reading Strategies Questionnaire.

Table 5. Correlation Values of the Variables

Scale	Variable	1	2	3	4	5	6	7	8	9
CRSPS	1.Overall	1	.81**	.84**	.90**	.83**	.86**	.77**	.81**	.60**
	2.Inquiry		1	.65**	.65**	.62**	.62**	.65**	.71**	.50**
	3.Illation			1	.70**	.62**	.61**	.68**	.65**	.57**
	4.Analysis				1	.72**	.74**	.62**	.68**	.46**
	5.Evaluation					1	.62**	.62**	.63**	.49**
	6.Finding Similarities and Differences						1	.70**	.76**	.53**
MRSQ	7. Overall							1	.83**	.92**
	8.Analytical								1	.57**
	9.Pragmatic									1

**p<.01,*p<.05

It was found that there was a positive and large relationship between the inquiry sub-scale of the CRSPS and the analytical strategies subscale of the MRSQ (r=.71, p<.01) and a positive and medium correlation between the pragmatic strategies (r=.50, p<.01). In addition, illation subscale had a positive and medium correlation with analytical strategies (r=.65, p<.01) and pragmatic strategies (r=.57, p<.01) subscales. It was also found that there was a medium relationship between analysis subscale of CRSPS and analytical strategies (r=.68, p<.01) and pragmatic strategies (r=.46, p<.01) of MRSQ. Furthermore, there was a positive and significant relationship between the evaluation subscale of CRSPS and the analytical strategies (r=.63, p<.01) and pragmatic strategies (r=.49, p<.01) of MRSQ. Also finding similarities and differences subscale of CRSPS was found to have a large correlation with analytical strategies (r=.76, p<.01), and a medium relationship with pragmatic strategies (r=.53, p<.01). In addition, it was found that there was a positive and significant correlation (r=.77, p<.01) between CRSPS and MRSQ in general. Table 6 shows the results of the regression analysis performed to investigate whether the participants' use of MRS predicted their CRSE perceptions.

Table 6. Regression Analysis Results of Critical Reading Perception and Metacognitive Reading Strategies

Variable	B	Standard Error	B	t	p	r
Constant	1.625	.183		8.881	.000	.772
MRSQ	.590	.044	.772	13.421	.000	
R=.772 R ² =.596 F ₍₁₋₁₂₂₎ =180.114 p=.000						

Simple linear regression analysis conducted to reveal whether the use of MRS predicted students' critical reading perception showed that there was a significant relationship between the use of MRS and critical reading perception (R=.772, R²= .596). In addition, the use of metacognitive strategy was found to be a significant predictor of critical reading perception (F(1-122) =180.11,p<.01). The use of MRS explained 59% of the change in critical reading scores of the participants. The regression coefficient (B=.590) also showed that the use of metacognitive strategy was a significant predictor (p<.01). Regression analysis revealed that the MRS factor was a positive and significant predictor of CRSE. The regression equation predicting metacognitive reading strategy use was as follows:

$$\text{Critical reading perception level} = (.590 \times \text{use of metacognitive reading strategies}) + 1.625.$$

DISCUSSION, CONCLUSION AND SUGGESTIONS

This study investigated the relationship between preservice Turkish language teachers' critical reading perceptions and MRS was examined. The findings revealed that the CRSE perceptions of the participants were above the average. Similarly, it was found that they had a positive perception of MRS. In addition, it was indicated in this study that the participants' critical reading perceptions were a significant variable that predicted MRS. This finding reveals that pre-service teachers' CRSE perceptions play an important role in their use of MRS.

In line with the first research question of the study, it was found that the participants "agreed" with the statements in the CRSPS. This finding is in consistence with those in the literature. In this sense, highlighting this issue, Flemming (2011) argued that critical reading skills requires the messages given in the text to be understood and the obtained results to be evaluated. Critical perspective is an inquiry and examination based process which includes cognitive processing steps such as interpretation, analysis, inference, and evaluation (Facione, 1990). The fact that the participants had higher levels of self-efficacy perceptions in critical reading indicated that they understood, questioned and evaluated the texts they read. Self-efficacy is the most important predictor of an individual's behavior (Schunk, 1990). Accordingly, the participants' higher levels of CRSE perceptions suggests that they can be successful in critical reading as well. Aşılıoğlu & Yaman (2017) also reported that pre-service teachers in their study had higher levels of CRSE perceptions which was above the average. Similarly, Çam Aktaş (2016) stated that the CRSE levels of the students at the pedagogical formation certificate program were "high". Similar to the present study, the participants in Aybek & Aslan (2015) agreed" with CRSE perception statements, which is consistent with the findings of Ünal & Sever (2013). On the contrary, Karasakaloğlu, Saracaloğlu & Özelçi (2012) stated that preservice classroom teachers had a low level of self-efficacy perceptions of critical reading. In addition, Özdemir (2017) reported that CRSE perceptions of the students were at a "moderate" level. Finally, Işık (2010) found that high school students had a moderate level of critical reading.

Findings of the second research question showed that participants "often did" the statements in the Metacognitive Reading Strategies Questionnaire. In critical reading, pre-service teachers make use of the strategies of checking and evaluating meaning (Karabay, 2015). The fact that the preservice teachers had high levels of metacognitive reading strategy use is considered as a positive situation. Metacognitive awareness the use of metacognitive strategies improves students' reading skills (Paris, Cross, & Lipson, 1984; Çubukçu, 2008; Young&Fry, 2008). The studies in the literature examined the relationship between metacognitive reading awareness and demographic variables (Azizoğlu & Okur, 2020), reading motivation (Guthire&Coddington, 2009; Schiefele, Schaffner & Möller, 2012), and

reading attitude (Stokmans, 1999, McKenna, 2001). The studies in the literature supports the findings of the present study. For example, Akın & Çeçen (2014) found that elementary school students had a high level of awareness of MRS. Metacognitive awareness skills have an influence on students' reading comprehension (Çöğmen & Saracaloğlu, 2009; Başaran, 2013; Zhang & Seepho, 2013; Hong-Nam, Leavell, & Maher, 2014) and exam success (Bağçeci, Döş & Yoleri, et al. Sarıca, 2011). Finally, it was reported that students with high cognitive awareness have high academic success (Karatay, 2010).

For the third research question, correlation analysis revealed a positive and large relationship between the participants' critical reading perceptions and MRS ($r=.77$, $p<.01$). The studies in the literature have focused on students' critical skills, metacognitive strategies and MRS (Özbay & Bahar, 2012; Ateş, 2013; Kana, 2014). A reader who has adopted metacognitive strategies has the ability to predict the reading material, plan the reading, monitor reading and comprehension and evaluate the reading process (Özbay & Bahar, 2012). Therefore, critical reading skills is thought to be related to thinking skills such as analysis, interpretation, evaluation, inference and explanation used in the critical reading process. In this sense, Karabay (2015) also reported that students use strategies such as checking comprehension and evaluating in the critical reading process. It may be argued that the relationship between critical reading and comprehension has an important effect on this situation.

Finally, the regression analysis conducted for the last researcher question showed that the use of MRS predicted the CRSE perceptions. Higher level cognitive behaviors have an influence on the self-efficacy of the individuals facilitate adopting different perspectives (Aşılıoğlu, 2008). In this sense, Karabay (2015) found that the critical reading education predicted the MRS of the students. The results of the present study is consistent with these findings. The critical reading is a text and author-based process and the reader concentrates on the text, makes evaluations, and uses existing reading strategies, which is considered important for the reading process. Similarly, the fact that metacognitive strategies are at the heart of critical reading (Facione, 2007), and MRS such as judging, deducing, perceiving the situation between reality and thought (Darch & Kammenui, 1987) in this process may have positively affected the participants' CRSE. Parson (1985) addressed the effect of metacognitive strategy education on critical reading skills of students and found that the mean score of the experimental group was higher than that of the control group, but this difference was not statistically significant. The limited period of training and the limited data collection tools may be the reason of this finding.

In sum, it was concluded as a result of this study that pre-service Turkish language teachers' perceptions of CRSE and MRS were related and this relationship was significant. Further studies are needed to emphasize the importance of CRSE and MRS. In future studies, larger sample groups can be included in order to examine the issue in depth and to provide more comprehensive results. In this study, the data was collected through two different scales. Therefore, more scales may be used in future studies. This study adopted a quantitative research design. However, the relationship between critical reading and MRS can also be investigated using qualitative or mixed research designs. Finally, studies aiming to expand students' critical perspectives and increase their metacognitive reading awareness with classroom practices can be carried out.

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COVID-19 pandemic, the data were collected via the online platform (Google Forms). Preservice teachers at the Turkish Language Education Department were asked to complete "CRSPS" and "MRSQ" through Google Forms.

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