



# International Journal of Educational Methodology

Volume 6, Issue 1, 83 - 98.

ISSN: 2469-9632

<http://www.ijem.com/>

## Investigation the Relationship between Metacognitive Awareness of Reading Strategies and Self-Efficacy Perception in Reading Comprehension in Mother-tongue: Sample of 8<sup>th</sup> Graders

Hasan Bagci

Mehmet Akif Ersoy University, TURKEY

Dilek Unveren\*

Suleyman Demirel University, TURKEY

*Received: September 19, 2019 • Revised: January 21, 2020 • Accepted: January 28, 2020*

**Abstract:** This study aims to identify the effect of metacognitive awareness of reading strategies on self-efficacy perception in reading comprehension of secondary school students and whether self-efficacy perception in reading comprehension of secondary school students differs according to the variables such as their gender and reading habits. In this correlational survey model study, data were collected from the sample of 380 students of 8th grade by using 'Metacognitive Awareness of Reading Strategies Inventory' developed by Mokhtari and Reichard and translated into Turkish by Ozturk; and 'Self-Efficacy Scale in Reading Comprehension' developed by Epcacan and Demirel were used. The data gathered were evaluated statistically by multivariate analysis of variance (MANOVA) with the help of the SPSS program. As the results of the study, Reading Visual Comprehension, Self-regulation in Reading and Reading Self-confidence subscale scores of self-efficacy perception in reading comprehension, were found to be statistically and significantly larger in the groups that have a tendency to finish books that they start. Moreover, Reading Visual Comprehension, Self-regulation in Reading and Reading Self-confidence subscale scores of self-efficacy perception in reading comprehension, were found to be statistically and significantly larger in the groups that have advanced level of reading habits. Additionally, RSC, SRR and RVC subscale scores of self-efficacy perception in reading comprehension, were found to be significantly different in favor of female participants. General Reading Strategies, Problem Solving Strategies and Supporting Reading Strategies subscales of metacognitive awareness of reading strategies have a positive effect on Reading Visual Comprehension, Self-regulation in Reading and Reading Self-confidence scores of the participants. In other words, metacognitive awareness of reading strategies contributes to self-efficacy perception in reading comprehension of eighth-grade students.

**Keywords:** *Metacognitive awareness, reading strategies, self-efficacy perception in reading.*

**To cite this article:** Bagci, H., & Unveren, D. (2020). Investigation the relationship between metacognitive awareness of reading strategies and self-efficacy perception in reading comprehension in mother-tongue: Sample of 8th graders. *International Journal of Educational Methodology*, 6(1), 83-98. <https://doi.org/10.12973/ijem.6.1.83>

### Introduction

Metacognition is defined simply as the process of thinking about thinking. That refers to learners' self-regulation skills as they are aware of their learning process and effective learning styles, and they can evaluate how effective and efficient they learn or comprehend as they study or read. In this process, students simultaneously think about the content they read/learn, and they think about their learning/reading process. In this context, during metacognition practice, they question the way they think, they learn, they read, and their place and position in those processes, whether they are comprehending or learning the content they are exposed to, how they can improve those process; in other words; how they can read/learn more effectively. Students who are metacognitively aware of themselves, show self-knowledge; that means they know the best working methods and strategies for them and under which conditions they can learn better; and they use that knowledge to implement these strategies, to observe the effectiveness of them and evaluate the whole process, which refers to self-regulation.

As can be seen, metacognition is vital to learning environments, because through it, students can manage their cognitive and learning processes, they can identify their strengths and the areas that are needed to be improved by developing new cognitive skills. Each learner is capable of metacognition that means every student can think about their learning, reading or performing a skill.

---

**\* Corresponding author:**

Dilek Unveren, Suleyman Demirel University, Faculty of Education, Isparta, Turkey. ✉ [dilekkanadze@sdu.edu.tr](mailto:dilekkanadze@sdu.edu.tr)



Metacognitive awareness is the knowledge, awareness and control of individual's own thinking and learning path, activities and processes (Doganay & Kara, 1995; Kramarski, Mevarech & Arami, 2002). Papaleontiou-Louca (2003) defines it as individual's regulating their knowledge, learning and thinking processes, and being aware and consciously control of cognitive situations. Since metacognitive awareness is an intangible concept, researchers made different definitions about it. Generally, it is defined as being aware of one's own thoughts and has control on them (Paris, Lipson & Wixon, 1983). Some researchers define it as being able to plan, rank, monitor cognitive processes (Schraw & Dennison, 1994). Thus, metacognitive awareness is the process of having and employing metacognitive thinking skills (Bogar, 2018).

Metacognitively aware students are more strategic, and so they can perform better than the others since they can plan, regulate, manage and monitor their own reading and learning process that have direct effect on their achievement. In other words, metacognition is a strong and important predictor and sign of achievement and success (Kruger & Dunning, 1999). Since metacognitively aware students can reflect upon, understand and control their own reading and learning processes, metacognition is vital to individual and independent learning, and important factor affecting and increasing their learning throughout their life while developing their critical, creative thinking skills and self-confidence (Akin, Abaci & Cetin, 2007; Flavell, 1979; Memnun & Akkaya, 2009; Schraw & Dennison, 1994; Livingstone, 1997). As they reflect upon and evaluate their reading and learning strategies, they can come up with increased used of problem solving skills since they always try to solve the difficulties in their reading and learning processes (Joseph, 2010). Natural outcome of this is being more strategic and performing better than metacognitively unaware learners (Garner & Alexander, 1989). Learners who have metacognition, are aware of what they know, how to and when to transfer it to other learning environments, so they are competent and successful learners with higher academic performance (Kruger & Dunning, 1999). They can monitor and manage their own reading and learning processes that means they can master information and apply necessary strategies during learning and problem solving (Tok, Ozgan & Dos, 2010). Since they can identify what they are doing well or bad during independent reading or learning processes, they can develop effective learning strategies. Autonomous learners can use metacognitive learning and reading strategies, they can assume conscious control of learning from planning to evaluating; eg. correcting errors and making necessary amendments to their reading and learning strategies and habits (Benson, 2001; Ridley, Schutz, Glanz & Weinstein, 1992). In contrast, learners with poor metacognitive skills, have difficulty in finding working ways to any challenge they encounter independently (Joseph, 2010; Hacker, Dunlosky & Graesser, 1998).

According to studies, metacognitive awareness of reading strategies increases students' level of engagement and performance during reading (Carrell, 1989; Mokhtari & Sheorey, 2002). Oguz and Kalender (2018), found positive and significant relationship between secondary school students' metacognitive awareness and their self-efficacy perceptions. Again in a study on secondary school students by Koc and Arslan (2017), a positive correlation was found between the academic self-efficacy and the metacognitive awareness of reading strategies sub-dimensions. Bozkurt and Memis (2013), investigated and found an average relationship between the reading levels and the metacognitive awareness of reading comprehension of 5<sup>th</sup> grade students. Moreover, metacognitive awareness distinguishes skilled readers from less successful ones. However, the studies in this area are rare on Turkish students and mostly on undergraduate students and candidate teachers and on second language reading. For instance, Bedir and Dursun (2019) found through their studies with 60 students of 9<sup>th</sup> grade that metacognitive reading strategies instruction has a positive effect on increasing metacognitive awareness of reading strategy, reading comprehension achievement and self-efficacy for reading in English. Again in a study on second language teaching, Gorgoz and Tican (2020) investigated the relationship between self-regulation skills and vocabulary learning strategies and they found a positive relationship between them. Celikoz (2018) investigated the levels of use of metacognitive reading strategies by Primary School teachers. Ozaydinlik (2018) also investigated candidate teachers' metacognitive learning strategies and teacher self-efficacy perceptions. Sen (2019), made research about candidate teachers' metacognitive awareness of reading strategies. Likewise, Ates (2013) made research about metacognitive awareness levels of reading strategies of university students. Therefore, we thought that it is very important to investigate the relationship between metacognitive awareness of reading strategies and self-efficacy perception in reading comprehension in mother-tongue in secondary school level by taking 8<sup>th</sup> graders as sample since they are in the last step of the secondary school to high school.

## Methodology

### *Research Goal*

In this study, it was aimed to search the effect of metacognitive awareness of reading strategies on self-efficacy perception in reading comprehension. Thus, through this research, answers for the following sub-research questions were sought.

Sub-research questions:

1. What is the effect of metacognitive awareness of reading strategies on self-efficacy perception in reading comprehension of secondary school students?

2. Do the self-efficacy perceptions in reading comprehension of secondary school students differ in gender groups?
3. Do secondary school students' self-efficacy perceptions in reading comprehension differ according to their varying levels of reading habits (poor, average, advanced)?
4. Do secondary school students' self-efficacy perceptions in reading comprehension differ in groups that finish the book that they have started and that do not finish?

#### *Research Model*

In the study, it was tried to identify the effect of metacognitive awareness of reading strategies on self-efficacy perception in reading comprehension of secondary school students and whether self-efficacy perception in reading comprehension of secondary school students differs according to the variables such as their gender and reading habit (poor, average, advanced). In this quantitative study, one of the descriptive survey models, correlational survey model was preferred. The correlational survey model is a type of research model that aims at identifying the existence and/or degree of joint change between two and more variables (Karasar, 2009).

#### *Sample*

The sample of the study consists of 380 students of 8<sup>th</sup> grade, studying in the central districts of Burdur and Isparta provinces in the 2018-2019 academic year.

#### *Data Collection*

In this study, 'Metacognitive Awareness of Reading Strategies Inventory' and 'Self-Efficacy Perception in Reading Comprehension Scale' were conducted to 8<sup>th</sup>-grade students in order to collect data and necessary explanations about the scales were made before conducting them.

#### *Data Collection Instruments*

In the study, 'Metacognitive Awareness of Reading Strategies Inventory' developed by Mokhtari and Reichard (2002) and translated into Turkish by Ozturk (2012); and 'Self-Efficacy Scale in Reading Comprehension' developed by Epcacan and Demirel (2011) were used.

EFA (exploratory) and CFA (confirmatory) analyses were used to evaluate the reliability and validity of the Metacognitive Awareness of Reading Strategies Inventory. The correlation coefficient between the Turkish and English forms scores was found as .96. All factors' reliability coefficients in the inventory were found between .76 and .85. It is a five-Likert type inventory of 3-factors structure: general reading strategies, problem-solving strategies and supporting reading strategies.

The validity of the scale 'Self-Efficacy Scale in Reading Comprehension' was shown by factor analysis. The suitability of the data for factor analyzing was determined by KMO and Bartlett Sphericity tests before carrying out factor analysis. The Cronbach alpha reliability coefficient of the scale with 35 items has been found as 0.90 in reliability study before eliminating the items with factor load under 0.35 values. In order to determine the validity of the scale, the items with factor load under 0.35 were eliminated. At the end of the process, a three-dimensional scale consisting of 27 items, with a Cronbach-alpha value of .88 was developed. The dimensions of the scale are reading and visual comprehension, self-regulation in reading and self-confidence related to reading.

#### *Analyzing of Data*

The data gathered from the study were evaluated statistically by multivariate analysis of variance (MANOVA) with the help of the SPSS program. In the study, the relationship between metacognitive awareness of reading strategies and self-efficacy perception in reading comprehension, that were multidimensional in the first place, was tested by multiple multivariate regression analysis. According to the results of this test, it was seen that at least one of the independent variable dimensions predicted at least one of the dependent variable dimensions statistically. Accordingly, MANOVA and regression analyzes were made.

#### *Analysis*

A model which predicts the effect of metacognitive awareness of reading strategies on self-efficacy perception in reading comprehension was tested via multivariate multiple regressions (MMR) first. Then three different multivariate analyses of variance (MANOVA) was conducted to test the following hypothesis:

- Are the population means for the scores on RVC, SRR, and RSC (or linear combinations of these scores) the same in different gender groups?

- Are the population means for the scores on RVC, SRR, and RSC (or linear combinations of these scores) the same between the groups defined by varying levels of reading habit?
- Are the population means for the scores on RVC, SRR, and RSC (or linear combinations of these scores) the same between the groups defined by their varying tendency to finish a book that has been started?

Abbreviations for the sub-dimensions in the scale of 'Self-efficacy perception in reading comprehension' are as follow:

**RVC:** Reading and Visual Comprehension

**SRR:** Self-Regulation in Reading

**RSC:** Reading Self-Confidence

Abbreviations for the sub-dimensions in the scale of 'Metacognitive awareness of reading strategies' are as follow:

**SRS:** Supporting Reading Strategies

**PSS:** Problem Solving Strategies

**GRS:** General Reading Strategies

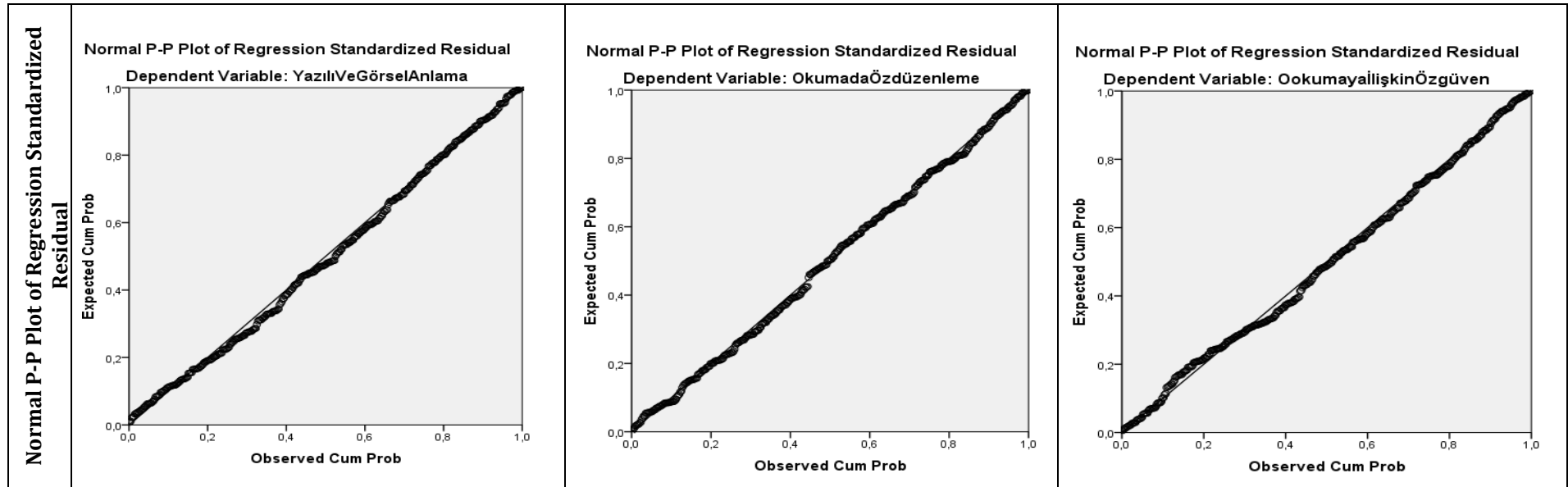
#### *Results of Preliminary Analyses and Test Assumptions*

First of all, there were no missing values observed when we checked the data for it. To identify outliers, an analysis of standard residuals was carried out on the data. This analysis indicated that 4 participant's standardized residual values are either below -3.29 or above 3.29, therefore they were identified as outliers and removed from the data set. Then, the analysis of standard residuals was carried out again to make sure there is no univariate outlier on the data set, which showed that the data contained no outliers (Std. Residual Min = -2.78, Std. Residual Max = 3.29). Additionally, multivariate outliers were checked through Mahalanobis distance (MD), based on a chi-square distribution, assessed using  $p < .001$ , four cases demonstrated larger MD than the critical chi-square value for  $df = 3$ , which was calculated as 16.27. Therefore, those 4 cases flagged as multivariate outliers and they were also removed from the data set before moving to test hypotheses. Then, descriptive statistics were conducted which can be seen in Table 1.

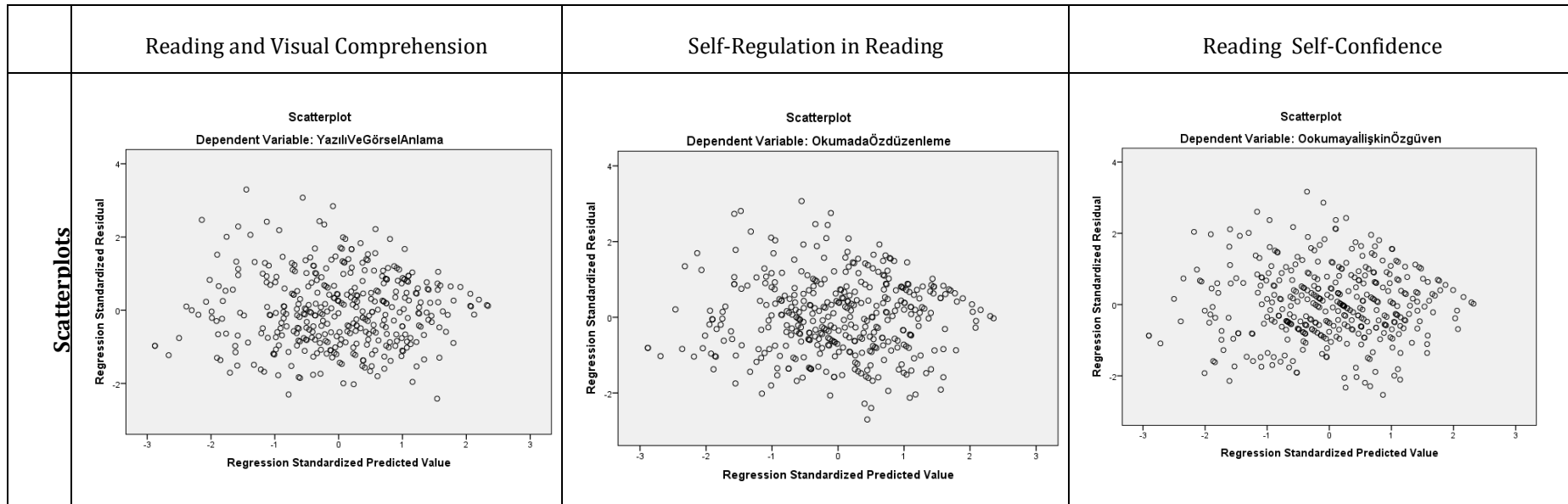
*Table 1. Descriptive Statistics*

Variables	N	Mean	Std. Deviation	Skewness		Kurtosis	
				Statistic	Std. Error	Statistic	Std. Error
GRS	380	19,07	6,063	,094	,125	-,560	,250
PSS	380	31,22	7,446	-,496	,125	-,125	,250
SRS	380	39,15	10,548	-,043	,125	-,291	,250
RVC	380	37,50	9,353	-,266	,125	-,340	,250
SRR	380	30,84	8,096	-,210	,125	-,417	,250
RSC	380	24,06	6,133	-,297	,125	-,163	,250

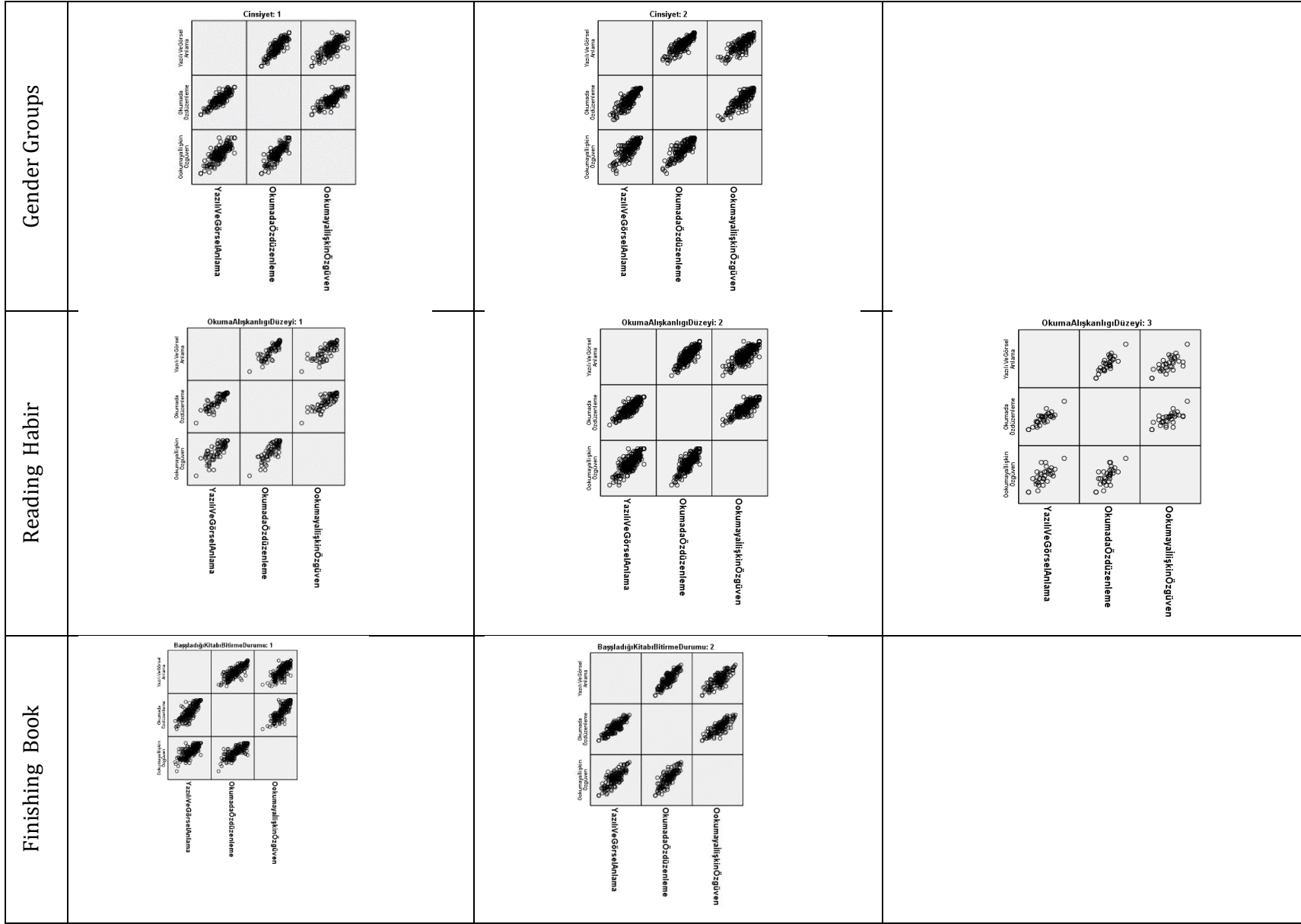
Before moving on to multivariate multiple regression (MMR) analysis, the following assumptions were checked to see if the data meet those assumptions: The normality, linearity, homoscedasticity, normally distributed residuals, and multicollinearity. Normality assumption was checked through skewness and kurtosis values for each variable. Those values (see Table 1) are between -2 and +2 which indicated that the data met the normality assumption (George & Mallery, 2010). Normal P-P plot of standardized residuals for each dependent variable were visually checked, they indicated that the data contained approximately normally distributed errors because the dots on those graphs are on, or close, to the line running diagonally (see Graph 1). Therefore, the data met the assumption of normally distributed residuals. The scatterplot of standardized predicted values for each dependent variable were visually checked, they showed that the data met the assumptions of homogeneity of variance (i.e., homoscedasticity) and linearity (see Graph 2).



Graph 1. Normal P-P plot of standardized residuals



Graph 2. Lastly, test to see if the data met the assumption of collinearity indicated that multicollinearity was not a concern, because no VIF value is greater than 10 and no Tolerance value is less than 0.1 (GRS, Tolerance = .34, VIF = 2.92; PSS, Tolerance = .41, VIF = 2.43; SRS, Tolerance = .27, VIF = 3.77).



Graph 3. Linear relationships between each pair of dependent variables for each group defined by independent variable

Before conducting MANOVAs, normality was checked through skewness and kurtosis values, all those values were between -2 and +2 which suggested as a normal distribution (see skewness and kurtosis values in Table 4, 5 and 7). Linear relationships between each pair of dependent variables for each group defined by each independent variable were visually checked through respected matrixes, they suggested that the data set met the linearity assumption (see Graph 3). Homogeneity of variance-covariance matrices was checked thorough Box' M tests, the data set also met those assumptions. Multicollinearity assumptions were checked by bivariate correlations between each pair of independent variables because there was no correlation coefficient larger than 0.9, the multicollinearity was not a concern (see Table 2).

Table 2. Correlations between each pair of dependent variables

		RVC	SRR	RSC
RVC	Pearson Correlation	1	,865**	,813**
	Sig. (2-tailed)		,000	,000
	N	380	380	380
SRR	Pearson Correlation	,865**	1	,843**
	Sig. (2-tailed)	,000		,000
	N	380	380	380
RSC	Pearson Correlation	,813**	,843**	1
	Sig. (2-tailed)	,000	,000	
	N	380	380	380

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### Test Results

A multivariate multiple regression analysis was conducted to test the model that predicts the effects of metacognitive awareness of reading strategies on self-efficacy perception in reading comprehension. The model contained three independent variables (GRS, PSS, and SRS) and three dependent variables (RVC, SRR, and RSC). First, Wilk's  $\Lambda$ , we tested the omnibus hypothesis that all beta coefficients across all dependent variables equal zero, was statistically significant:  $F(9, 910) = 54.678, p < .001$ . Consequently, it was concluded that one or more independent variables are statistically significant predictors of at least one dependent variable. To further explore the relationships between the independent and each dependent variable, each dependent variable was regressed on all three independent variables. For the model  $RVC = b_0 + b_1.GRS + b_2.PSS + b_3.SRS, R^2 = 0.588, F(3, 376) = 178.75, p < .01$ . For the model  $SRR = b_0 + b_1.GRS + b_2.PRS + b_3.SRS, R^2 = 0.559, F(3, 376) = 160.93, p < .01$ . For the model  $RSC = b_0 + b_1.GRS + b_2.PSS + b_3.SRS, R^2 = 0.578, F(3, 376) = 174.04, p < .01$ . These results suggest that these three independent variables explain 58.8% of the total variance in RVC, 55.9% of the total variance in SRR, and 57.8% of the total variance in RSC variables. To see the relative contribution of each independent variable in the three models, standardized regression coefficients were calculated (see Table 3).

Table 3. Parameter Estimates

Dependent Variable	Parameter	B	Std. Error	t	Sig.
RVC	Intercept	7,508	1,358	5,528	,000
	GRS	,031	,087	,352	,725
	PSS	,458	,065	7,058	,000
	SRS	,386	,057	6,779	,000
SRR	Intercept	5,401	1,212	4,457	,000
	GRS	,076	,078	,974	,331
	PSS	,402	,058	6,945	,000
	SRS	,293	,051	5,757	,000
RSC	Intercept	4,362	,898	4,860	,000
	GRS	,040	,058	,688	,492
	PSS	,333	,043	7,781	,000
	SRS	,218	,038	5,786	,000

According to standardized regression coefficients, PSS makes the biggest contribution to all dependent variables: RVC, SRR, and RSC (Beta = 0.458, 0.402, 0.333 respectively). Contribution of GRS on all three dependent variables is not statistically significant ( $p > .05$ ) whereas the other two independent variables make a statistically significant contribution to all dependent variables ( $p < .05$ ).

One-way MANOVA was conducted to determine the effect of gender on the three dependent variables: RVC, SRR, and RSC. First, Box's M test for equality of variance yielded non-significant results ( $p > .05$ ). Significant differences were found between the gender on the dependent measures, Wilk's  $\Lambda = .938, F(3, 376) = 8.26, p < .01$ . The multivariate  $\eta^2$



based on Wilk's  $\Lambda$  was .06. Table 4 contains descriptive statistics on the dependent variables for the two groups: male and female. Analysis of variances (ANOVA) on the dependent variables was conducted as follow-up test to the MANOVA. Applying Bonferroni method, each ANOVA tested at the .017 level. ANOVAs on the RVC scores  $F(1, 378) = 20.45$ ,  $p < .01$ ,  $\eta^2 = .05$ ; SRR scores  $F(1, 378) = 19.94$ ,  $p < .01$ ,  $\eta^2 = .05$ , and RSC scores  $F(1, 378) = 23.86$ ,  $p < .01$ ,  $\eta^2 = .06$  were statistically significant.

Table 4. Descriptive Statistics of gender groups

<b>Male</b>								
	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
RVC	191	35,40	9,134	83,430	-,142	,176	-,033	,350
SRR	191	29,04	7,749	60,051	-,090	,176	,013	,350
RSC	191	22,57	5,782	33,436	-,217	,176	,259	,350
Valid N (listwise)	191							
<b>Female</b>								
RVC	189	39,63	9,109	82,979	-,436	,177	-,420	,352
SRR	189	32,66	8,051	64,821	-,403	,177	-,558	,352
RSC	189	25,56	6,126	37,525	-,501	,177	-,202	,352
Valid N (listwise)	189							

One-way MANOVA was conducted to determine the effect of reading habit levels on the three dependent variables: RVC, SRR, and RSC. First, Box's M test for equality of variance yielded non-significant results ( $p > .05$ ). Significant differences were found between the gender on the dependent measures, Wilk's  $\Lambda = .813$ ,  $F(3, 376) = 13.63$ ,  $p < .01$ . The multivariate  $\eta^2$  based on Wilk's  $\Lambda$  was .10. Table 5 shows descriptive statistics on the dependent variables for the three groups: advanced, average, poor. Analysis of variances (ANOVA) on the dependent variables was conducted as a follow-up test to the MANOVA. Applying Bonferroni method, each ANOVA tested at the .017 level. ANOVAs on the RVC scores  $F(2, 377) = 37.93$ ,  $p < .01$ ,  $\eta^2 = .17$ ; SRR scores  $F(2, 377) = 37.88$ ,  $p < .01$ ,  $\eta^2 = .17$ , and RSC scores  $F(2, 377) = 31.25$ ,  $p < .01$ ,  $\eta^2 = .14$  were statistically significant.

Table 5. Descriptive Statistics of reading habits of groups

<b>Advanced</b>								
	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
RVC	70	43,69	7,986	63,784	-,540	,287	-,445	,566
SRR	70	35,79	7,356	54,113	-,695	,287	,110	,566
RSC	70	27,89	5,581	31,146	-,753	,287	,229	,566
Valid N (listwise)	70							
<b>Average</b>								
RVC	276	37,06	8,650	74,818	-,252	,147	-,204	,292
SRR	276	30,63	7,433	55,252	-,158	,147	-,321	,292
RSC	276	23,74	5,680	32,257	-,257	,147	,039	,292
Valid N (listwise)	276							
<b>Poor</b>								
RVC	34	28,38	8,907	79,334	,346	,403	,659	,788
SRR	34	22,38	7,295	53,213	,426	,403	1,252	,788
RSC	34	18,71	6,048	36,578	,003	,403	-,104	,788
Valid N (listwise)	34							

Post Hoc analyses to the univariate ANOVAs for RVC, SRR, and RSC scores consisted of conducting pairwise comparison to find out the effects of each reading habit level on each dependent variable. Each pairwise comparison was conducted at the .017 divided by 3 or .006 level. Multiple comparison results for all dependent variables were found to be significantly different among the groups defined by the levels of reading habit at .006 level. These results are demonstrated in Table 6.

Table 6. Multiple Comparisons among the levels of reading habits

Dependent Variable	(I) Levels of Reading Habit	(J) Levels of Reading Habit	Mean Difference (I-J)	Std. Error	Sig.
RVC	Advanced	Avarage	6,63*	1,145	,000
		Poor	15,30*	1,788	,000
	Avarage	Advanced	-6,63*	1,145	,000
		Poor	8,68*	1,555	,000
	Poor	Advanced	-15,30*	1,788	,000
		Avarage	-8,68*	1,555	,000
SRR	Advanced	Avarage	5,16*	,991	,000
		Poor	13,40*	1,548	,000
	Avarage	Advanced	-5,16*	,991	,000
		Poor	8,25*	1,346	,000
	Poor	Advanced	-13,40*	1,548	,000
		Avarage	-8,25*	1,346	,000
RSC	Advanced	Avarage	4,14*	,762	,000
		Poor	9,18*	1,190	,000
	Avarage	Advanced	-4,14*	,762	,000
		Poor	5,04*	1,035	,000
	Poor	Advanced	-9,18*	1,190	,000
		Avarage	-5,04*	1,035	,000

One-way MANOVA was conducted to determine the effect of a tendency to finish a book on the three dependent variables: RVC, SRR, and RSC. First, Box's M test for equality of variance yielded non-significant results ( $p > .05$ ). Significant differences were found among the groups defined by finishing a book on the dependent measures, Wilk's  $\Lambda = .835$ ,  $F(3, 376) = 24.82$ ,  $p < .01$ . The multivariate  $\eta^2$  based on Wilk's  $\Lambda$  was .17.

Table 7. Descriptive Statistics of groups defined by finishing a book

	Always								
	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error	
RVC	218	40,71	8,011	64,181	-,151	,165	-,686	,328	
SRR	218	33,47	7,000	49,006	-,086	,165	-,860	,328	
RSC	218	26,00	5,456	29,770	-,265	,165	-,285	,328	
Valid N (listwise)	218								
	Not Always								
	RVC	162	33,19	9,317	86,814	-,099	,191	-,393	,379
	SRR	162	27,31	8,145	66,339	-,036	,191	-,391	,379
	RSC	162	21,44	6,033	36,397	-,200	,191	-,162	,379
	Valid N (listwise)	162							

Table 7 shows descriptive statistics on the dependent variables for the two groups: always and not always. Analysis of variances (ANOVA) on the dependent variables was conducted as follow-up test to the MANOVA. Applying Bonferroni method, each ANOVA tested at the .017 level. ANOVAs on the RVC scores  $F(1, 378) = 71.10$ ,  $p < .001$ ,  $\eta^2 = .16$ ; SRR scores  $F(1, 378) = 62.53$ ,  $p < .001$ ,  $\eta^2 = .14$ , and RSC scores  $F(1, 378) = 59.34$ ,  $p < .001$ ,  $\eta^2 = .14$  were statistically significant.

### Discussion and Conclusion

In this section, conclusions and results for each research question are discussed by referring to relevant literature and studies conducted.

1. Research Question: *What is the effect of metacognitive awareness of reading strategies on self-efficacy perception in reading comprehension of secondary school students?*

As a result of the research, it was seen that 58.8% of the variance in the RVC sub-dimension of self-efficacy perceptions in reading comprehension of 8<sup>th</sup>-grade students could be attributed to the GRS, PSS, and SRS subscales of metacognitive awareness of reading strategies. It can be said that a one-point change in each of the GRS, PSS, and SRS sub-dimensions will increase the RVC score by .031, .458, and .386 points, respectively.

As a result of the study, it was seen that 55.9% of the variance in the SRR sub-dimension of self-efficacy perceptions in reading comprehension of 8<sup>th</sup>-grade students could be attributed to the GRS, PSS, and SRS subscales of metacognitive awareness of reading strategies. It can be said that a one-point change in each of the GRS, PSS, and SRS sub-dimensions will increase the SRR score by .076, .402, and .293 points, respectively.

As a result of the study, it was seen that 57.8% of the variance in the RSC sub-dimension of self-efficacy perceptions in reading comprehension of 8<sup>th</sup>-grade students could be attributed to the GRS, PSS, and SRS subscales of metacognitive awareness of reading strategies. It can be said that a one-point change in each of the GRS, PSS, and SRS sub-dimensions will increase the RSC score by .040, .333, and .218 points, respectively.

Therefore, it can be concluded that the students that have a higher level of awareness about their metacognitive strategies have also more developed skills to read and comprehend visual and written material, which is a sub-dimension of self-efficacy perception in reading comprehension. Thus, it can be asserted by using this finding that exercises supporting and developing metacognitive strategies of students about reading, would have a positive effect and cause an increase in their self-efficacy perceptions on reading. This is an important conclusion when it is interpreted with the studies that found as their results that reading, comprehending and analysis skills can be developed by using metacognitive strategies, by increasing students awareness about them, and so increasing their self-efficacy perceptions in reading comprehension (Channa, 2012; Channa & Nordin, 2014; Lipp, 2017). Metacognitive strategies of reading helps readers in pre-reading process by supporting them to plan their reading, make divisions if required, making necessary preparations, in terms of conditions, researches or mentally readiness etc., that is required by readers to comprehend and evaluate (Baker & Brown, 1984; Brown and Palincsar, 1982; Schiff & Calif, 2004). Shikalepoh (2016), found in his study learners' awareness of others' reading difficulties; their self-efficacy perception in reading comprehension; their engagement in reading activities and their reading comprehension skills are positively correlated to and effected by each other and

As a conclusion, the results of this research overlap with the findings of these studies.

2. Research Question: *Do the self-efficacy perceptions in reading comprehension of secondary school students differ in gender groups?*

RVC subscale scores of self-efficacy perception in reading comprehension were significantly different in favor of females; the effect of the difference was small.

SRR subscale scores of self-efficacy perception in reading comprehension were significantly different in favor of females; the effect of the difference was small.

RSC subscale scores of self-efficacy perception in reading comprehension were significantly different in favor of females; the effect of the difference was medium.

As a result, it can be said that reading and visual comprehension and that self-regulation in reading that both constitute the subscale of self-efficacy perception of reading comprehension of students, were found to be higher in female participants than males. However, the difference between them in terms of this sub-dimension was found as small. Therefore, we can conclude that gender is not an effective factor that discriminates students in terms of their abilities and skills of reading and visual comprehension and self-regulation in reading that are sub-dimensions of self-efficacy perceptions in reading. However, in terms of self-confidence related to reading that is sub-dimensions of self-efficacy perceptions in reading was found higher in female participants than males. Therefore we can conclude that gender is a medially effective factor in favor of females, in terms of self-confidence in reading.

This finding partially overlaps with the study conducted by Osman and his friends (2016) that revealed a gender gap in EFL reading achievement in favor of female participants; thus, they found that females have higher self-efficacy for reading achievement than males and the study of Karadeniz (2015) that found that female participants have higher perceptions of self-efficacy for critical reading compared to males. Moreover, their research finding showed that there is a strong relationship between reading self-efficacy beliefs and students' achievement in reading tests. Therefore, it is again proven that an increased level of reading self-efficacy has a positive effect on students' performance on reading comprehension.

Rachmajanti and Musthofiyah (2017) found through their studies that although females are more successful in reading comprehension, in terms of the relationship between self-efficacy on reading comprehension, males surpass females. In other words, self-efficacy has a bigger effect on reading comprehension scores of males compared to females. Additionally, Smith and his friends (2012) found in their study that girls outperformed boys in reading achievement and showed advanced reading habits. However, as in our study, their study resulted in a small difference between girls and boys in terms of self-efficacy.

Kargar and Zamanian (2014), in their study to explore the relationship between self-efficacy and reading comprehension strategies used by Iranian male and female English as a foreign language (EFL) learners, found a positive relationship between self-efficacy and reading comprehension strategies. However, there was no significant difference between female and male participants. Moreover, they concluded that increasing self-efficacy contributes to

the reading achievement of learners. Therefore, findings of this study overlaps with ours and with the one conducted by Naseri and Zaferanieh (2012) that found a significant strong positive correlation between reading self-efficacy beliefs and reading comprehension and also between reading self-efficacy beliefs and reading strategies use, however, regarding the gender they found that there was no difference between female and male participants regarding the relationship between reading self-efficacy and reading strategies used. Peura et al. (2019), Piercy (2013) also found through their studies that there was no difference between females and males in terms of their self-efficacy levels.

3. Research Question: *Do secondary school students' self-efficacy perceptions in reading comprehension differ according to their varying levels of reading habits (poor, average, advanced)?*

RVC subscale scores of self-efficacy perception in reading comprehension in reading habit groups (poor, average, advanced) were found to be statistically significantly different and the effect size of this difference was found to be large. Post-hoc tests were conducted to identify the difference between the groups. Thus, test results revealed the significant difference between (1) the groups of advanced and average, in favor of the advanced; between (2) the groups of advanced and poor, in favor of the advanced; between (3) the groups of average and poor, in favor of the average.

SRR subscale scores of self-efficacy perception in reading comprehension in reading habit groups (poor, average, advanced) were found to be statistically significantly different and the effect size of this difference was found to be large. Post-hoc tests were conducted to identify the difference between the groups. Thus, test results revealed the significant difference between (1) the groups of advanced and average, in favor of the advanced; between (2) the groups of advanced and poor, in favor of the advanced; between (3) the groups of average and poor, in favor of the average.

RSC subscale scores of self-efficacy perception in reading comprehension in reading habit groups (poor, average, advanced) were found to be statistically significantly different and the effect size of this difference was found to be large. Post-hoc tests were conducted to identify the difference between the groups. Thus, test results revealed the significant difference between (1) the groups of advanced and average, in favor of the advanced; between (2) the groups of advanced and poor, in favor of the advanced; between (3) the groups of average and poor, in favor of the average.

As a conclusion, we can say by evaluating these results that, reading and visual comprehension, self-regulation in reading and self-confidence in reading that constitute the subscale of self-efficacy perception of reading comprehension of students, were found to be higher and developed in the groups that have average and advanced reading habits, whereas they were found lower in the group of students that can be described as having poor reading habits. Therefore, it can be concluded that fostering reading habits and encouraging students about reading more, can develop their self-efficacy perceptions of reading comprehension, thus their reading comprehension, analysis and evaluation skills. These findings partially overlap with the study by Bozkurt and Memis (2013). In their study that was conducted to investigate the metacognitive reading comprehension awareness of 5<sup>th</sup>-grade students and their reading motivation found that the level of independent reader has been assessed as having the highest medium in relation with the metacognitive awareness of reading comprehension and reading motivation and they found an average relationship between the reading levels and the metacognitive awareness of reading comprehension. Likewise, Oguz and Kalender (2018) conducted a study to search for the relationship between metacognitive awareness and self-efficacy of secondary school students. They found a significant difference between the academic self-efficacy sub-dimension and total self-efficacy perceptions of the students in terms of the number of books they read per month.

4. Research Question: *Do secondary school students' self-efficacy perceptions in reading comprehension differ in groups that finish the book that they have started and that do not finish?*

It was seen that RVC subscale scores of self-efficacy perception in reading comprehension, were found to be statistically and significantly different between the groups that finish the book they start, and those that do not finish. Additionally, this difference was found to be in favor of the group that finishes the book, and the effect size of the difference was large.

It was seen that SRR subscale scores of self-efficacy perception in reading comprehension, were found to be statistically and significantly different between the groups that finish the book they start, and those that do not finish. Additionally, this difference was found to be in favor of the group that finishes the book, and the effect size of the difference was large.

It was seen that RSC subscale scores of self-efficacy perception in reading comprehension, were found to be statistically and significantly different between the groups that finish the book they start, and those that do not finish. Additionally, this difference was found to be in favor of the group that finishes the book, and the effect size of the difference was large.

In accordance with the results and findings of 3<sup>rd</sup> research questions of this research, we can conclude by analyzing the results of 4<sup>th</sup> research question that, reading and visual comprehension, self-regulation in reading and self-confidence

in reading that constitute the subscale of self-efficacy perception of reading comprehension of students, were found to be higher and developed in the group that have higher tendency and perseverance for finishing a books that they start, whereas they were found lower in the group of students that can be described as not having such a perseverance to finish books that they have started. Therefore, it can be concluded that supporting students and showing methods, strategies about reading effectively, and identifying the factors that prevent them finish the book that they start and try to find strategies to eliminate them, can encourage them to complete books by comprehending and by having fun. Therefore, their self-efficacy perceptions of reading comprehension can be developed in parallel with their reading comprehension, analysis and evaluation skills. As we found and supported with other studies and explained above as a result of 1<sup>st</sup> research question of this study that self-efficacy perceptions of students are higher in students that use metacognitive reading strategies. Also, students with higher levels of employing metacognitive reading strategies and higher levels of awareness about them are more successful in reading comprehension and evaluation.

According to studies, engaged, self-regulated, motivated readers that can finish the books that they start are the ones that can set realistic goals for themselves, can identify and choose effective reading strategies for specific purposes, are aware of their comprehension process of the text, and analyse and evaluate their improvement regarding their goals and aims (Martinez-Pons, 1996; Sherri & Craig, 2002; Zimmerman, 1986; Zimmerman, Bonner & Kovach, 1996). According to researches, there is a positive relationship between motivation and reading, and also reading motivation and reading achievement (Bamidele, Haliso & Onuoha, 2016; Erten, Topkaya & Karakas, 2010; Kirchner & Mostert, 2017; Schutte & Malouff, 2007; Scott, 1996). Bandura (1986) identifies motivation as the result of an individual's self-efficacy related to a task. According to him, it is people's beliefs that help them to show perseverance about a task, to put effort into it. So, this study's result overlaps with Bandura's suggestion that reading and visual comprehension, self-regulation in reading and self-confidence in reading that constitute the subscale of self-efficacy perception of reading comprehension of students, were found to be higher and developed in the group that have higher tendency and perseverance for finishing a books that they start, whereas they were found lower in the group of students that can be described as not having such a perseverance to finish books that they have start. Karadeniz (2015) found a positive correlation between the participants' perceptions of self-efficacy for critical reading and their reading habits in his study. Boakye (2017), found that students who have little reading experience and use inappropriate reading strategies, also have low self-efficacy and poor reading habits, moreover, they were identified as having difficulty in reading comprehension. Therefore, we can conclude that the findings of these studies overlap with our study in terms of our results for the 3<sup>rd</sup> and 4<sup>th</sup> research questions, focusing on reading habits (poor, average or advanced) and perseverance of students to finish books that they start. The students who have higher tendency to finish books that they start and have advance or average reading habits, were found to be have higher self-efficacy reading comprehension, and so, higher level of reading comprehension as studies show.

### Suggestions

Since the study did not include an achievement test, future research could include it to identify the correlation between the variables of this study and reading comprehension of the students.

Since it was shown as a result of the study that higher levels of reading habits and being engaged in more reading activities are positively correlated with reading self-efficacy and so metacognitive awareness of reading strategies, encouraging students to read and helping them to find their most convenient way of reading could increase their motivation to read and develop comprehension skills.

Since this study's findings are limited to its sample, 380 students of 8<sup>th</sup> graders, it is suggested for future researches to make a survey at the end of primary school and high school levels.

### References

- Akin, A., Abaci, R., & Cetin, B. (2007). The validity and reliability of the Turkish version of the metacognitive awareness inventory. *Educational Sciences: Theory & Practice*, 7(2), 671-678.
- Ates, A. (2013). Universite ogrencilerinin okuma stratejileri ustbilissel farkindalik duzeyleri [Metacognitive awareness levels of reading strategies of university students]. *International Journal of Turkish Literature Culture Education/ Uluslararası Turkçe Edebiyat Kultur Egitim Dergisi*, 4, 258-273.
- Baker, L., & Brown, A. L. (1984). Metacognitive skills and reading. In P. D. Pearson (Ed.), *Handbook of reading research* (pp. 353-394). Newyork, NY: Longman
- Bamidele, I.A., Haliso, Y. & Onuoha U.D. (2016). Self-efficacy, reading, library use habits and academic achievement of senior secondary school students in Ogun state, Nigeria. *Ebonyi Journal of Library and Information Science*, 3(1), 3-23.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

- Bedir, S., & Dursun, F. (2019). Ustbilissel okuma stratejileri ogretiminin ogrencilerin ustbilissel farkindaligi, Ingilizce okuma basarisi ve oz yeterliklerine etkisi. [The effect of metacognitive reading strategies instruction on students' metacognitive awareness, reading achievement and self-efficacy in English]. *Journal of National Education/ Milli Egitim Dergisi*, 48 (222), 185-211.
- Benson, P. (2001). *Teaching and researching autonomy in language learning*. London, UK: Longman.
- Boakye, N. (2017). Exploring students' reading profiles to guide a reading intervention programme. *English Language Teaching*, 10(7), 158-174.
- Bogar, Y. (2018). Literature review on metacognition and metacognitive awareness. *Anatolian Journal of Teacher*, 2(2), 136-168.
- Bozkurt, M., & Memis, A. (2013). Besinci sinif ogrencilerinin ustbilissel okudugunu anlama farkindaligi ve okuma motivasyonlari ile okuma duzeyleri arasindaki iliski [The relationship between 5th-grade elementary school students' metacognitive reading comprehension awareness, reading motivation and reading level]. *Ahi Evran University Journal of Faculty of Education /Ahi Evran Universitesi Kirsehir Egitim Fakultesi Dergisi*, 14(3),147-160
- Brown, A. L., & Palinscar, A. S. (1982). Inducing strategic learning from text by means of informed, self-control training. *Topics in Learning and Learning Disabilities*, 2(1), 1-17.
- Carrell, P.L. (1989). Metacognitive awareness and second language reading. *Modern Language Journal*, 73(2), 121-133.
- Channa, A. M., & Nordin, Z. S. (2014). Identifying metacognitive strategies through learners' reading comprehension: A Review of related studies. *Science International (Lahore)*, 26(5), 2457- 2460.
- Channa, A. M. (2012). Teachers' perceptions towards English language as a medium of instructions in Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*, 4(5), 759-764.
- Celikoz, N. (2018). Levels of use of meta-cognitive reading strategies by primary school teachers. *International Online Journal of Educational Sciences*, 10(2), 221-234.
- Doganay, A., & Kara, Z. (1995). Dusunmenin boyutlari. Program ve ogretim icin bir model. [Dimensions of thinking. A model for the program and teaching]. *Cukurova University Journal of Faculty of Education /Cukurova Universitesi Egitim Fakultesi Dergisi*, 1(11), 25-38.
- Epcacan, C., & Demirel, O. (2011). Okudugunu anlama oz yeterlik algisi olcegi. [Reading comprehension self-efficacy scale]. *The Journal of International Social Research/ Uluslararası Sosyal Arastirmalar Dergisi*, 4(16), 120-128.
- Erten, I. H., Topkaya, E. Z., & Karakas, M. (2010). Exploring motivational constructs in foreign language reading. *H. U. Journal of Education /Hacettepe Universitesi Egitim Fakultesi Dergisi*, 39, 185-196.
- Flavell, J.H. (1979). Metacognition and cognitive monitoring: A new area of cognitive developmental inquiry. *American Psychologist*, 34(10), 906-911
- Garner, R., & Alexander, P. A. (1989). Metacognition: Answered and unanswered questions. *Educational Psychologist*, 24(2), 143-158.
- George, D., & Mallery, M. (2010). *SPSS for windows step by step: A simple guide and reference* (10th ed.). Boston, MA: Pearson.
- Gorgoz, S., & Tican, C. (2020). Investigation of middle school students' self-regulation skills and vocabulary learning strategies in foreign language. *International Journal of Educational Methodology*, 6(1), 25-42. <https://doi.org/10.12973/ijem.6.1.25>
- Hacker, D.J., Dunlosky, J., & Graesser, A. C. (1998). *Metacognition in educational theory and practice*. Mahwah, NJ: Earlbaum
- Joseph, N. (2010). Metacognition needed: Teaching middle and high school students to develop strategic learning skills. *Preventing School Failure*, 54(2), 99-103.
- Karadeniz, A. (2015). An examination of critical reading self-efficacy perceptions among the students of the faculty of education over different variables. *Anthropologist*, 22(2), 167-175.
- Karasar, N. (2009). *Bilimsel arastirma yontemi* [Scientific research method]. Ankara, Turkey: Nobel.
- Kargar, M., & Zamanian, M. (2014). The relationship between self-efficacy and reading comprehension strategies used by Iranian male and female EFL learners. *International Journal of Language Learning and Applied Linguistics World*, 7(2), 313-325.
- Kirchner, E., & Mostert, L. (2017). Aspects of the reading motivation and reading activity of Namibian primary school readers. *Cogent Education*, 4(1), 1411036. <https://doi.org/10.1080/2331186X.2017.1411036>

- Koc, C., & Arslan, A. (2017). Ortaokul ogrencilerinin akademik oz yeterlik algilari ve okuma stratejileri bilisustu farkindalıkları [Academic self-efficacy perceptions and metacognitive awareness of reading strategies of secondary school students]. *YYU Journal of Education Faculty /YYU Egitim Fakultesi Dergisi*, 14(1), 745-778.
- Kramarski, B., Mevarech, Z. R., & Arami, M. (2002). The effects of metacognitive instruction on solving mathematical authentic tasks. *Educational Studies in Mathematics*, 49(2), 225-250.
- Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: How differences in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, 77(6), 1121-1134.
- Lipp, E. (2017). Building self-efficacy, strategy use, and motivation to support extensive reading in multilingual university students. *The Catesol Journal*, 29(2), 21-39.
- Livingstone, J. A. (1997). *Effects of metacognitive instruction on strategy use of college students*. Unpublished manuscript. State University of New York, Buffalo.
- Martinez-Pons, M. (1996). Test of a model of parental inducement of academic self-regulation. *Journal of Experimental Education*, 64, 213-227.
- Memnun, D.S., & Akkaya, R. (2009). The levels of metacognitive awareness of primary teacher trainees. *Procedia Social and Behavioral Sciences*, 1(1), 1919-1923.
- Mokhtari, K., & Sheorey, R. (2002). Measuring ESL students' awareness of reading strategies. *Journal of Development Education*, 25(3), 2-10.
- Nasari, M., & Zaferanieh, E. (2012). The relationship between reading self-efficacy beliefs, reading strategy use and reading comprehension level of Iranian EFL learners. *World Journal of Education*, 2(2), 64-75.
- Oguz, A., & Kutlu-Kalender, M. D. (2018). Ortaokul ogrencilerinin ust bilissel farkindalıkları ile oz yeterlik algilari arasindaki iliski [The relationship between metacognitive awareness and self-efficacy of secondary school students]. *Theory and Practice in Education/ Egitimde Kuram ve Uygulama*, 14(2), 170-186. doi:10.17244/eku.319267
- Olivares, F., Fidalgo, R., & Torrance, M. (2016). Differences in reading self-efficacy between school years and according to gender. *Journal of Psychodidactics /Revista de Psicodidactica*, 21(1), 45-63.
- Osman, M. E. T., Al Khamisi, H., Al Barwani, T., & Al Mekhlafi, A. (2016). EFL reading achievement: Impact of gender and self-efficacy beliefs. *International Journal of Learning, Teaching and Educational Research*, 15(3), 54-73.
- Ozaydinlik, K. B. (2018). Ogretmen adaylarının ustbilissel ogrenme stratejileri ve ogretmen yeterlik algilari uzerine karsilastirmali bir inceleme [A comparative analysis of pre-service teachers' metacognitive learning strategies and teacher self-efficacy perceptions]. *H. U. Journal of Education/ Hacettepe Universitesi Egitim Fakultesi Dergisi*, 33(1), 125-143. doi: 10.16986/HUJE.2017028409
- Ozturk, E. (2012). The validity and reliability of the Turkish version of the metacognitive awareness of reading strategies inventory. *Elementary Education Online*, 11(2), 292-305.
- Papaleontiou-Louca, E. (2003). The concept and instruction of metacognition. *Teacher Development*, 7(1), 9-30.
- Paris, S. G., Lipson, M. Y., & Wixson, K. K. (1983). Becoming a strategic reader. *Contemporary Educational Psychology*, 8(3), 293-316.
- Piercy, R. R. (2013). *Reading self-efficacy in early adolescence: which measure works best?* (Unpublished doctoral dissertation). College of Education, University of Kentucky, Lexington, KY.
- Peura P. I., Viholainen, H. J. K., Aro, T. I., Raikkonen, E. M., Usher, E. L., Sorvo, R. M. A., ... & Aro, M. T. (2019). Specificity of reading self-efficacy among primary school children. *The Journal of Experimental Education*, 87(3), 496-516. DOI: 10.1080/00220973.2018.1527279
- Rachmajanti, S., & Musthofiyah, U. (2017). The relationship between reading self-efficacy, reading attitude and EFL reading comprehension based on gender difference. *Journal of English Language, Literature and Teaching*, 1(1), 20-26.
- Ridley, D. S., Schutz, P. A., Glanz, R. S., & Weinstein, C. E. (1992). Self-regulated learning: the interactive influence of metacognitive awareness and goal-setting. *Journal of Experimental Education*, 60(4), 293-306.
- Schraw, G., & Dennison, R. S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology*, 19(4), 460-475.
- Scott, J. E. (1996). Self-efficacy: a key to literacy learning. *Reading Horizons: A Journal of Literacy and Language Arts*, 36(3), 195-213
- Sherri, L. H., & Craig S. S. (2002). Becoming an engaged, self-regulated reader. *Theory into Practice*, 41(2), 102-109.

- Shikalepoh, P. P. (2016). Learners' self-efficacy beliefs in reading comprehension in English Second Additional Language in a Namibian rural school. (Unpublished master's thesis). North-West University, Mmabatho, South Africa.
- Smith, J., Smith, L., Gillmore, M., & Jameson, A. (2012). Students' self-perception of reading ability, enjoyment of reading and reading achievement. *Learning and Individual Differences, 22*(2), 202–206.
- Sen, H. S. (2019). Lisans ogrencilerinin ust bilissel okuma farkindalıkları: cesitli degiskenlere gore bir inceleme [Undergraduate students' awareness of metacognitive reading: a study according to different variables]. *Mediterranean Journal of Educational Research /Akdeniz Egitim Arastirmalari Dergisi, 13*(30), 199-216. doi: 10.29329/mjer.2019.218.12
- Tok, H., Ozgan, H., & Dos, B. (2010). Assessing metacognitive awareness and learning strategies as positive predictors for success in a distance learning class. *Mustafa Kemal University Journal of Social Sciences Institute, 7*(14), 123-134.
- Zimmerman, B.J. (1986). Becoming a self-regulated learner: Which are the key sub processes? *Contemporary Educational Psychology, 11*(4), 307-313.
- Zimmerman, B.J., Bonner, S., & Kovach, R. (1996). *Developing self-regulated learners: Beyond achievement to self-efficacy*. Washington, DC: American Psychological Association.