Investigation of Middle School Students' Self-Regulation Skills and Vocabulary Learning Strategies in Foreign Language*

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Abstract: The purpose of the current study is to investigate middle school students' self-regulation skills and vocabulary learning strategies in foreign language. The sampling of the current study consists of 990 5th, 6th, 7th and 8th grade middle school students attending state middle schools in the Mentese district of the city of Mugla, Turkey in school year 2018-2019. As the data collection tools, the Perceived Self-Regulation Scale and the Vocabulary Learning Strategies in Foreign Language Scale were used. In the analysis of the collected data, frequencies, percentages, independent-samples t-test and one-way variance analysis (ANOVA), Post-Hoc Tests (Tukey and Dunnett's C) and correlation analysis were used. The findings of the present study have revealed that the middle school students' self-regulation skills and vocabulary learning strategies in foreign language are over the medium value. The middle school students' self-regulation skills and vocabulary learning strategies in foreign language were found to vary significantly depending on gender, grade level, father-mother attitude and level of interest in English course. A medium, positive and significant correlation was found between the middle school students' total scores of self-regulation strategies and vocabulary learning strategies in foreign language.

Keywords: *Self-regulation, self-regulation skills, vocabulary learning strategies in foreign language, middle school students.*

Introduction

In today's world, teaching students "how to learn" and teaching them ways of having access to information rather than transmitting the existing information to students, have gained great importance. Thus, in the content of curricula, there are common core skills to be imparted to students. These skills are generally related to students' thinking, taking responsibility, mastering and developing strategies contributing to their learning, being responsible for their own learning and regulating their own learning. In other words, many of these objectives aim at making students individuals having self-regulation skills.

Ghazal (2007) states that one of the biggest problems encountered by students while learning a foreign language is learning vocabulary. To overcome this difficulty, the existence of students who have self-confidence and can carry out their own learning process on their own is of great importance. Therefore, today, training of students who have gained their own self-regulation skills and who are responsible for their own learning process is necessary. Students with self-regulation skills can be assumed to be responsible for their own learning and are capable of determining the strategies to be used for learning vocabulary in English.

Literature Review

Self-regulation

Self-regulation is explained through concepts such as self-regulation, will power, postponing desires, controlling and regulating emotions, self-flexibility, the state of attention and sustainability and self-regulation to meet expectations (Vohs & Baumeister, 2011). Kauffman (2004) defines self-regulation as "the effort of the student to control and manage

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complex learning activities" (p.140). Self-regulation is defined as one's self-developed feelings, thoughts and behaviours to achieve the goal. Self-regulation is neither a mental nor an academic skill. On the contrary, it is a process directed by the person in transforming one's mental skills into academic ones (Zimmerman, 2001).

The essence of self-regulation is seen as a metacognitive knowledge, which can be regarded as a successful indicator of intelligence (Hrbackova & Safrankova, 2016). Self-regulation is one of the best elements determining academic achievement and a skill used in learning. It includes the self-initiated works and self-promoted skills of students. The things students do in this process, abilities, skills, self-development, regulation of behaviours, setting goals, seeing advantages, disadvantages are all regulations made in their cognition on the basis of their needs. These students are creative students producing new projects (Zimmerman, 2002). Pintrich (2000) states that students with self-regulation skills are more motivated for academic achievement and that they learn better than other students and more successful in the ways they use to achieve their goals.

Self-regulated learning has a key position in education. Its impact on learning and its main role in achieving lifelong success at school and beyond cannot be overlooked (Boekaerts & Cascallar, 2006). Zimmerman (2002) explains self-regulated learning as ''an activity that students do for themselves in a proactive way which refers to self-generated thoughts, feelings and behaviours that are oriented to attaining goals'' (p. 65). According to Pintrich (1999), self-regulated learning is an active and systematic progression in which learners try to manage, regulate and control their cognition, motivation and behaviour by setting goals for their own learning.

Self-regulated learning and skill can be defined as the process by which learners' personal activity, cognition, emotions and systematic behaviours are sustained to achieve personal goals. In setting personal goals, learners create "a feedback loop" in which they can observe their own effectiveness and adapt their functions. During the self-regulation period, self-regulated individuals should be proactive to set and achieve their goals. In addition, supportive motivational beliefs are very important (Zimmerman & Schunk, 2011).

According to Gaskill and Woolfolk Hoy (2002), self-regulated learners are individuals who are motivated to take responsibility for their success and failure, are ready for the task, and have high self-efficacy. Cobb (2003), in turn, believes that self-regulated learners are individuals who have the cognitive, motivational and behavioural ability to participate in the learning process. Self-regulated individuals can metacognitively plan, organise, observe, supervise and evaluate learning processes in such a way as to achieve their own goals. In terms of motivation, such individuals think themselves to be sufficient, autonomous and effective in learning. They behaviourally have the ability to choose and create a suitable environment for learning. According to Akdogan, Velipasaoglu and Musal (2016), self-regulated students are highly motivated, actively manage their learning processes themselves, are successful in time management, and determine their learning strategies depending on their goals. They can change and shape the strategies they use in the process, while analysing the causes of their failure; instead of linking them to personal reasons, they reflect on the choice of the goal and the strategies they choose and review them in order to increase their success.

Vocabulary Learning Strategies

The language learning strategy is defined as "a set of processes, steps, plans and routines used by the learner to acquire, store, remember, and facilitate the use of information" (Wenden & Rubin, 1987, p. 19). Language learning strategies are processes that are consciously chosen by the learner and may result in steps taken to improve the learning and use of the target language through the storage, retention, retrieval and use of information about a second or foreign language (Cohen, 1999).

Vocabulary learning strategies are a part of language learning strategies; accordingly, a part of general learning strategies (Nation, 2001). These strategies are considered as a sub-category of general learning strategies (Oxford, 1990). Vocabulary learning strategy is defined as the process, through which information is acquired, stored, retrieved and used (Rubin, 1987). Vocabulary learning strategies refer to actions that help learners to remember and understand vocabulary elements (Cameron, 2001). They are the steps and actions as well as mechanisms used by students to learn vocabulary. These strategies help us to guess the meaning of an unknown word, to retain new words in the memory for a long time, to retrieve when needed and use them in written and spoken expressions (Catalan, 2003). According to Merriam-Webster's collegiate dictionary definition, "vocabulary knowledge is the bulk or sum of the words used by a field-specific knowledge, a job, a person, a group or a language" (Vocabulary knowledge, 1998, p.1322). Sener (2015) opines that, when we do not have sufficient vocabulary, we cannot understand other individuals and we cannot get across our own opinions, thoughts and ideas. This indicates how critical vocabulary is for language learners.

Having sufficient vocabulary knowledge in foreign language learning has an important place in effective and successful language use. Vocabulary learning strategies that enable effective learning of words will also enable learners to take control of their own learning and thus take more responsibility for their studies (Nation, 2001). According to Kocaman and Kizilkaya Cumaoglu (2014), the use of strategy in the acquisition of vocabulary affects success and language proficiency. In language teaching, identifying students' vocabulary learning strategies, encouraging them to use strategies and teaching them how to use them will be effective in improving language success.

Individuals with self-regulation skills are those who can take responsibility for their own learning, find the most appropriate strategy, apply it, and make self-evaluate at the end of the process. They also have the ability to investigate the cause of their own success and failure and to draw new paths accordingly. In this context, students with good self-regulation skills can use better vocabulary learning strategies.

Various studies have been conducted on the self-regulation skills of middle school students in Turkey. In their study, Uredi and Erden (2009) aimed at investigating the mother and father's attitudes as the predictors of self-regulation strategies and motivational beliefs. It was concluded that the mother and father's attitudes are a significant predictor of all the sub-dimensions of motivational beliefs except for the classroom anxiety sub-dimension and self-regulation strategies. A study conducted by Demircan (2014), which aimed at investigating the self-regulation strategies and motivations beliefs of the 5th grade students in relation to in-class activities and level of academic achievement in Science and Technology courses. The students having a high correlation between their activity and academic achievement levels were found to have better use of self-regulation strategies and higher self-efficacy perception and task-value perception compared to other students. In a study carried out by Aldan Karademir, Deveci and Cayli (2018), which aimed at investigating the middle school students' self-regulation and academic self-efficacy. The result of the study revealed that the middle school students' self-regulation skills are above the medium level and that there is a positive and significant correlation between the middle school students' self-regulation skills and academic self-efficacy. The students having fathers and mothers with democratic attitudes were found to have both better self-regulation skills and higher academic self-efficacy; the female students' both self-regulation skills and academic self-efficacy levels were found to be better and with increasing grade level, the middle school students' use of self-regulation strategies and academic self-efficacy were found to be decreasing. Akkaya (2012) explored the correlation between the self-regulation strategies and motivational beliefs of the 7th grade students and their attitudes towards mathematics. The students' self-regulation skills were found to be above the medium level. In their study, Kanat and Kozikoglu (2018) investigated the 8th grade students' self-regulation strategies, motivational beliefs and attitudes towards English course. It was found that the students' use of self-regulation strategies is at the medium level and that the female students use self-regulation strategies more than the male students. The female students were also found to have more positive attitudes towards English course. Aldan Karademir and Gorgun (2019) conducted a study to investigate the middle school students' self-regulation skills and problem-solving oriented reflective thinking skills depending on different variables and to reveal the correlation between them. A positive, high and significant correlation was found between reflective thinking skills and self-regulation skills.

Various studies have been conducted with middle school students on vocabulary learning strategies in a foreign language in Turkey. A study conducted by Uzulmez (2015), it was aimed at investigating the middle school 8th grade students' attitudes towards English course and vocabulary learning strategies in relation to different variables. It was found that the students' level of strategy use is medium, that students' use of vocabulary learning strategies and attitudes towards the course do not vary significantly depending on gender and that their attitudes towards the course do not vary significantly depending on the mother and father's education level. Izci and Ozgan Sucu (2013) investigated which learning strategies and how frequent they are used by the 8th grade students while learning English. The results of the study show that the 8th grade students use strategies at a medium level and that the strategies used by them vary by gender, in favour the female students. Moreover, the strategy use of the more successful students was found to be higher. In a study conducted by Serabatir (2008) it was aimed at investigating the vocabulary learning strategies used by the 6th and 7th grade level students. It was found that, in general, the students use vocabulary learning strategies and that the strategy use differs significantly by gender, in favour of the female students. The students' use of vocabulary learning strategies was found to be varying significantly depending on their attitudes towards English course and academic achievement. In relation to the mother and father's education level, only significant difference was found in favour the students who have university graduate mothers. In their study, Cevik, Orakci, Aktan, Toraman and Aycicek (2018) aimed at determining the middle school students' level of using vocabulary learning strategies in a foreign language, the correlation between the students' academic achievement and their use of vocabulary learning strategies in a foreign language and whether their use of vocabulary learning strategies in a foreign language varies significantly depending on some variables. It was found that there is no significant correlation between the achievement in English course and the use of vocabulary learning strategies and that the use of vocabulary learning strategies in a foreign language does not vary significantly depending on the mother and father's education level. The use of vocabulary learning strategies was found to be varying significantly depending on their state of reading grade books suitable for their level. Moreover, only the use of cognitive strategies was found to be varying significantly depending on gender while no significant difference was found for the other sub-dimensions.

However, there is no research examining both self-regulation skills and vocabulary learning strategies of middle school students depending on different variables and examining the level of correlation between them. Therefore, the current study attempts to make some contributions to the literature. In this regard, answers to the following research questions were sought:

1) What is the level of the middle school students' self-regulation skills?

2) Do the middle school students' self-regulation skills vary depending on gender, grade level, mother-father attitude and the level of interest in English course?

3) What is the level of the middle school students' vocabulary learning strategies?

4) Do the middle school students' vocabulary learning strategies in foreign language vary significantly depending on gender, grade level, mother-father attitude and the level of interest in English course?

5) Is there a significant correlation between the middle school students' self-regulation skills and vocabulary learning strategies in foreign language?

Methodology

Research Model

In the current study employing the quantitative research methods, a model complying with the single survey, relational survey and causal comparative designs were used.

Universe and Sampling

The universe of the current study is comprised of 8467 middle school students; 5003 fifth graders, 1075 sixth graders, 1376 seventh graders and 1013 eighth graders, attending state middle schools in the Mentese district of the city of Mugla in school year 2018-2019. From a total of 8467 students, at least 964 should be included in the sampling with 95% probability and $\pm$ 3% "negligible error" margin (Yazicioglu & Erdogan, 2007). Thus, we decided to include 990 students in the sampling of the current study. In this sampling, the students from four different grade levels were included according to the proportional cluster sampling method.

Middle school education covers students aged at 10-13 years old. Frequency and percentage distribution of the middle school students across the variables is given in Table 1.

Table 1. Middle School Students' Frequency and Percentage Distribution across the Variables

		f	%
Gender	Female	498	50,3
	Male	492	49,7
	Total	990	100,0
Grade Level	5th grade	596	60,2
	6th grade	123	12,4
	7th grade	161	16,3
	8th grade	110	11,1
	Total	990	100,0
Father's Attitude	Democratic	858	86,7
	Authoritarian	132	13,2
	Total	990	100,0
Mother's Attitude	Democratic	841	84,9
	Authoritarian	149	15,1
	Total	990	100,0
Level of Interest in the English Course	Low	95	9,6
	Medium	945	50,0
	High	400	40,0
	Total	990	100,0

As can be seen in Table 1, 50.3% of the participating students are females while 49.7% of them are males; 60.2% of them are 5th graders, 16.3% are 7th graders, 12.4% are 6th graders, and 11.1% are 8th graders. When the attitudes of the fathers of the participating students are examined, it is seen that 86.7% of the students have fathers exhibiting democratic attitudes and 13.2% have fathers exhibiting democratic attitudes. When the attitudes of the mother of the participating students are examined, it is seen that 84.9% of them mothers exhibiting democratic attitudes while 15.1% have mothers exhibiting authoritarian attitudes. When the students' level of interest in the English course is examined, it is seen that 50.0% of them have a medium level of interest, 40.0% have a high level of interest and 9.6% have a low level of interest.

Data Collection Tools

Personal Information Form: This personal information form developed by the researcher has items to elicit information about the participating students' gender, grade level, mother-father attitude and level of interest in English.

The Perceived Self-regulation Scale: This scale was developed by Arslan and Gelisli (2015) for middle school students. The Perceived Self-regulation Scale is a five-point Likert type scale ranging from "never" to always". The 16-item scale consists of 2 sub-dimensions, which are being open and searching. The highest score to be taken from this scale is 80 while the lowest score is 16. Sample items from the scale are given below.

Table 2. Sample Items Found in the Self-Regulation Skills Scale

Dimension	Item no	Sample items
Being open	1	If I want, I can easily learn even the most difficult subjects
Seeking	12	I develop different ways to find solutions to the problems I encounter while learning a subject

The Cronbach alpha reliability coefficient of the scale was calculated as .90. The Cronbach alpha for the sub-dimension of being open was .84 and .82 for the sub-dimension of searching. In the current study, the Cronbach alpha reliability coefficient was calculated as .88. The Cronbach alpha for the sub-dimension of being open was .77 and .83 for searching.

Vocabulary Learning Strategies in Foreign Language Scale: The scale was developed by Kocaman and Kizilkaya Cumaoglu (2014) for middle school students. The scale consists of 32 items and 6 sub-dimensions, which are memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies. The Vocabulary Learning Strategies in Foreign Language scale is a five-point Likert-type scale ranging from "never" to "always". The highest score to be taken from the scale is 160 while the lowest score is 32. Sample items from the scale are given below.

Table 3. Sample Items Found in the Scale of Foreign Language Vocabulary Learning Strategies

Dimensions	Item no	Sample items
Memory strategies	6	I try to recall the meaning of an English word by visualising it in my mind.
Cognitive strategies	9	In order to recall the meanings of English words, I stick the vocabulary cards in places where I can see.
Compensation strategies	14	I prefer to learn the English words I need for my class through technological programs.
Metacognitive strategies	19	While learning English words, I try to find the most suitable method.
Affective strategies	22	When I have learned English words, I reward myself.
Social strategies	31	While learning English words, I prefer working with the whole class to working individually.

The Cronbach alpha reliability coefficient of the scale was .89. This coefficient was as follows for the sub-dimensions: .74 for memory strategies, .67 for cognitive strategies, .71 for compensation strategies, .72 for metacognitive strategies, .64 for affective strategies and .62 for social strategies. In the current study, the Cronbach alpha reliability coefficient of the scale was .92 and it was as follows for the sub-dimensions: .81 for memory strategies, .71 for cognitive strategies, .70 for compensation strategies, .64 for metacognitive strategies, .67 for affective strategies and .75 for social strategies.

Data Analyses

The collected data were analysed with SPSS (Statistical Package for the Social Sciences) Version 22. Firstly, the normality of distribution was checked to determine the statistical tests to be run. The Kurtosis values for both of the scale and their sub-dimensions were found to be varying between +2 and -1 while their Skewness values were found to be varying between +1 and -1. According to Huck (2008), these values showed that the data collected in the current study were within the borders of normal distribution (as cited in Secer, 2015). Thus, in the analysis of the collected data, frequencies, percentages, independent samples t-test and one-way variance analysis (ANOVA), Post-Hoc Tests (Tukey and Dunnett's C) and correlation analysis were used. In the independent samples t-test, first the homogeneity of the variances was tested with Levene test. When the variances were not homogenous, the values in the column "Equal variances not assumed" were taken into consideration. In cases where group variances were found to be equal in one-way variance analysis, Dunnett's C test was run.

Findings / Results

In this section, the findings of the current study are presented within the framework of the sub-problems. The findings related to first sub-problem of the current study "What is the level of the middle school students' self-regulation skills?" are presented in Table 4.

Table 4. Middle School Students' Level of Self-regulation Skills

	N	x̄	SD
Being open	990	30,67	5,88
Searching	990	29,88	6,52
Self-regulation (Total)	990	60,55	11,50

As can be seen in Table 4, the Self-regulation Scale is a five-point scale ranging from "never" to "always". Thus, the highest score to be taken from the 16-item scale is 80 while the lowest score is 16. The medium score to be taken from the scale was determined to be 48 points. In this study, the mean score taken from the whole scale by the participating students was found to be 60.55. Thus, the level of their self-regulation skills is over the medium value (X̄=60,55; SD:11,50).

The results of the independent samples t-test conducted to find an answer to the sub-problem "Do the middle school students' self-regulation skills vary significantly depending on gender?'' are presented in Table 5.

Table 5. Results of the t-Test Conducted to Investigate whether the Middle School Students' Self-regulation Skills Vary Significantly Depending on Gender

	Gender	n	x̄	SD	df	t	p	Cohen's d
Being open	Female	498	31.32	5.59	978.285	3.505	.000*	.22
	Male	492	30.02	6.10				
Searching	Female	498	30.61	6.36	988	3.574	.000*	.22
	Male	492	29.14	6.61				
Self-regulation (Total)	Female	498	61.93	10.97	988	3.826	.000*	.24
	Male	492	59.16	11.86				

(*p<.05)

As can be seen in Table 5, the middle school students' self-regulation skills vary significantly depending on gender in the sub-dimension of "being open" [$t_{(978.285)}$=3.505, p<.05], "searching" [$t_{(988)}$=3.574, p<.05)] and in the whole scale [$t_{(988)}$=3.826, p<.05)] depending on gender in favour of the female students.

The results of the one-way variance analysis conducted to find an answer to the sub-problem "Do the middle school students' self-regulation skills vary significantly depending on grade level?'' are presented in Table 6.

Table 6. Results of the One-way Variance Analysis Conducted to Determine whether the Middle School Students' Self-regulation Skills Vary Significantly Depending on Grade Level

	Grade Level	n	x̄	SD	df	F	p	η2	Sig. Dif.
Being open	5	596	30.82	5.43	3-986	3.436	.016*	.01	7-8
	6	123	30.08	6.20					
	7	161	29.75	7.23					
	8	110	31.88	5.45					
	Total	990	30.67	5.88					
Searching	5	596	30.21	6.17	3-986	1.953	.119		–
	6	123	29.85	7.04					
	7	161	28.84	7.26					
	8	110	29.60	6.57					
	Total	990	29.88	6.52					
Self-regulation (Total)	5	596	61.04	10.68	3-986	2.286	.077		–
	6	123	59.93	12.29					
	7	161	58.59	13.62					
	8	110	61.49	11.33					
	Total	990	60.55	11.50					

(*p<.05)

As can be seen in Table 6, the middle school students' self-regulation skills vary significantly depending on grade level only in the sub-dimension of "being open" [$F_{(3-986)}$=3.436, p<.05]. In the sub-dimension of "searching" [$F_{(3-986)}$=1.953, p>.05] and in the whole scale, there is no significant difference [F(3-986)=2.286, p>.05] depending on grade level. In order to find the source of the significant difference in the sub-dimension of "being open", Dunnett's C test was conducted and the results of this test revealed that there is a significant difference between the 7th graders (X̄ = 29.75)

and the 8th graders ($\overline{X}$ = 31.88) in favour of the 8th graders. Thus, the self-regulation skills of the 8th graders were found to be better than those of the 7th graders.

The results of the independent samples t-test conducted to find an answer to the sub-problem "Do the middle school students' self-regulation skills vary significantly depending on mother attitude?" are presented in Table 7.

Table 7. Results of the t-Test Conducted to Determine whether the Middle School Students' Self-regulation Skills Vary Significantly Depending on Mother Attitude

	Mother Attitude	n	x̄	SD	df	t	p	Cohen's d
Being open	Democratic	858	30.97	5.85	988	4.103	.000*	.38
	Authoritarian	132	28.73	5.73				
Searching	Democratic	858	30.26	6.34	164.220	4.407	.000*	.42
	Authoritarian	132	27.36	7.15				
Self-regulation (Total)	Democratic	858	61.24	11.33	988	4.838	.000*	.44
	Authoritarian	132	56.09	11.65				

(*p<.05)

As can be seen in Table 7, the middle school students' self-regulation skills vary significantly depending on mother attitude in the sub-dimensions of "being open" [$t_{(988)}$=4.103, p <.05] and "searching" [$t_{(164.220)}$=4.407, p<.05]] and in the whole scale [$t_{(988)}$=4.838, p<.05]] in favour the students whose mothers exhibit democratic attitudes.

The results of the independent samples t-test conducted to find an answer to the sub-problem "Do the middle school students' self-regulation skills vary significantly depending on father attitude?" are presented in Table 8.

Table 8. Results of the t-Test Conducted to Determine whether the Middle School Students' Self-regulation Skills Vary Significantly Depending on Father Attitude

	Father Attitude	n	x̄	Ss	sd	t	p	Cohen's d
Being open	Democratic	841	31.07	5.80	988	5.104	.000*	.45
	Authoritarian	149	28.43	5.89				
Searching	Democratic	841	30.39	6.33	988	5.919	.000*	.51
	Authoritarian	149	27.01	6.87				
Self-regulation (Total)	Democratic	841	61.46	11.27	988	5.983	.000*	.52
	Authoritarian	149	55.44	11.51				

(*p<.05)

As can be seen in Table 8, the middle school students' self-regulation skills vary significantly depending on father attitude in the sub-dimensions of "being open" [$t_{(988)}$=5.104, p<.05] and "searching" [$t_{(988)}$=5.919, p<.05]] and in the whole scale [$t_{(988)}$=5.983, p<.05)] in favour the students whose fathers exhibit democratic attitudes.

The results of the one-way variance analysis conducted to find an answer to the sub-problem "Do the middle school students' self-regulation skills vary significantly depending on their interest in English course?" are presented in Table 9.

Table 9. Results of the One-way Variance Analysis Conducted to Determine whether the Middle School Students' Self-regulation Skills Vary Significantly Depending on their Interest in English Course

	Level of Interest	n	x̄	SD	df	F	p	η2	Sig. Dif.
Being open	Low	95	25.04	6.21	2-987	134.460	.000*	.21	Low-Medium Low-High Medium-High
	Medium	495	29.37	5.53					
	High	400	33.62	4.52					
	Total	990	30.67	5.88					
Searching	Low	95	24.25	6.67	2-987	77.735	.000*	.13	Low-Medium Low-High Medium-High
	Medium	495	29.00	5.96					
	High	400	32.30	6.05					
	Total	990	29.88	6.52					
Self-regulation (Total)	Low	95	42.29	11.69	2-987	121.935	.000*	.19	Low-Medium Low-High Medium-High
	Medium	495	58.37	10.51					
	High	400	65.93	9.69					
	Total	990	60.55	11.50					

(*p<.05)

As can be seen in Table 9, the middle school students' self-regulation skills vary significantly depending on interest in English course in the sub-dimensions of "being open" [$F_{(2-987)}$=134.460, p<.05], "searching" [$F_{(2-987)}$=77.735, p<.05] and in the whole scale [$F_{(2-987)}$=121.935, p<.05]. In order to determine the source of the difference, Dunneet's C test was conducted and the results of this test revealed that there are significant differences between all the interest levels in the sub-dimension of "being open". In this regard, when the self-regulation mean scores of the groups were examined, the highest mean score was found for the students with high level of interest ($\overline{X}$=33.62), followed by the students with medium level of interest $\overline{X}$=29.37) and the students with low level of interest ($\overline{X}$=25.04). According to the results of Tukey test, there are significant differences between all the levels of interest in the sub-dimension of "searching". In this regard, when the self-regulation mean scores of the groups were examined, the highest mean score was found for the students with high level of interest ($\overline{X}$ = 32.30), followed by the students with medium level of interest ($\overline{X}$ = 29.00) and the students with low level of interest ($\overline{X}$ = 24.25). According to the results of Dunnett's C test, significant differences were found between the all the levels of interest in the whole scale. In this regard, when the self-regulation mean scores of the groups were examined, the highest mean score was found for the students with high level of interest ($\overline{X}$ = 65.93), followed by the students with the medium level of interest ($\overline{X}$ = 58.37) and the students with low level of interest ($\overline{X}$ = 42.29). As a result, it was concluded that the students with high level of interest in English course have higher levels of self-regulation skills.

The results of the analysis conducted to find an answer to the third sub-problem of the study "What is the level of the middle school students' vocabulary learning strategies? are presented in Table 8.

Table 10. Level of the Middle School Students' Vocabulary Learning Strategies

	N	x̄	SD
Memory Strategies	990	23.81	6.31
Cognitive Strategies	990	15.81	4.73
Compensation Strategies	990	13.30	3.91
Meta-cognitive Strategies	990	14.63	3.57
Affective Strategies	990	21.39	5.07
Social Strategies	990	19.52	5.60
Vocabulary Total	990	108.50	23.30

The Vocabulary Learning Strategies in Foreign Language Scale is a five-point Likert scale ranging from "never" to "always". Thus, the highest score to be taken from the scale is 160 while the lowest score is 32. The medium score was determined to be 96 for this scale. The mean score taken from the scale by the participating students was found to be 108.50. This value shows that the students' level of vocabulary learning strategies in foreign language ($\overline{X}$=108.50; SD:23.30) is over the medium level.

The results of the t-test analysis conducted to find an answer to the fourth sub-problem of the study "Do the middle school students' vocabulary learning strategies in foreign language vary significantly depending on gender?" are presented in Table 11.

Table 11. Results of the t-Test Conducted to Determine whether the Middle School Students' Vocabulary Learning Strategies in Foreign Language Vary Significantly Depending on Gender

	Gender	n	x̄	SD	df	t	p	Cohen's d
Memory Strategies	Female	498	24.44	6.21	988	3.145	.002*	.20
	Male	492	23.18	6.35				
Cognitive Strategies	Female	498	16.51	4.48	988	4.709	.000*	.30
	Male	492	15.10	4.87				
Compensation Strategies	Female	498	13.44	3.80	988	1.163	.245	-
	Male	492	13.15	4.01				
Meta-cognitive Strategies	Female	498	14.34	3.42	980.399	2.722	.007*	.16
	Male	492	14.92	3.69				
Affective Strategies	Female	498	21.86	4.77	973.013	2.945	.003*	.18
	Male	492	20.92	5.31				
Social Strategies	Female	498	19.67	5.41	988	.860	.390	-
	Male	492	19.36	5.79				
Vocabulary Total	Female	498	110.88	22.03	974.809	3.244	.001*	.20
	Male	492	106.09	24.30				

(*p<.05)

As can be seen in Table 11, the middle school students' vocabulary learning strategies in foreign language vary significantly depending on gender in the sub-dimensions of "memory strategies" [$t_{(988)}$=3.145, p<.05], "cognitive strategies" [$t_{(988)}$=4.709, p<.05)], 'meta-cognitive strategies'' [$t_{(980.399)}$=2.722, p<.05], "affective strategies'' [$t_{(973.013)}$=2.945, p<.05] and in the whole scale [$t_{(974.809)}$=3.244, p<.05)] in favour of the female students. Their vocabulary learning strategies were found to be not varying significantly depending on gender in the sub-dimensions of ''social strategies'' [$t_{(988)}$=.860, p>.05] and "compensation strategies" [$t_{(988)}$=1.163, p>.05].

The results of the one-way variance analysis conducted to find an answer to the sub-problem "Do the middle school students' vocabulary learning strategies in foreign language vary significantly depending on grade level?'' are presented in Table 12.

Table 12. Results of the One-way Variance Analysis Conducted to Determine whether the Middle School Students' Vocabulary Learning Strategies in Foreign Language Vary Significantly Depending on Grade Level

	Grade Level	n	x̄	SD	df	F	p	η2	Sig. Dif.
Memory Strategies	5	596	24.31	6.06	3-986	7.725	.000*	.02	5-7
	6	123	24.77	6.16					5-8
	7	161	22.09	6.96					6-7
	8	110	22.58	6.22					6-8
	Total	990	23.81	6.31					
Cognitive Strategies	5	596	15.95	4.54	3-986	3.125	.025*	.00	6-8
	6	123	16.58	5.04					
	7	161	15.26	5.06					
	8	110	14.99	4.72					
	Total	990	15.81	4.73					
Compensation Strategies	5	596	13.45	3.81	3-986	2.420	.065	-	-
	6	123	13.69	3.75					
	7	161	12.67	4.34					
	8	110	12.93	3.83					
	Total	990	13.30	3.91					
Meta-cognitive Strategies	5	596	14.90	3.33	3-986	5.494	.001*	.01	5-7
	6	123	14.96	3.36					6-7
	7	161	13.77	4.26					
	8	110	14.09	3.73					
	Total	990	14.63	3.57					
Affective Strategies	5	596	21.55	4.82	3-986	4.127	.006*	.01	5-7
	6	123	21.77	4.99					6-7
	7	161	20.14	5.82					7-8
	8	110	21.93	5.04					
	Total	990	21.39	5.07					
Social Strategies	5	596	19.75	5.37	3-986	2.499	.058	-	-
	6	123	20.09	5.86					
	7	161	18.81	6.16					
	8	110	18.65	5.57					
	Total	990	19.52	5.60					
Vocabulary Total	5	596	109.97	22.03	3-986	5.715	.001*	.01	5-7
	6	123	111.88	23.48					6-7
	7	161	102.77	27.16					
	8	110	105.19	22.15					
	Total	990	108.50	23.30					

(*p<.05)

As can be seen in Table 12, the middle school students' vocabulary learning strategies vary significantly depending on grade level in the sub-dimensions of "memory strategies" [$F_{(3-986)}$=7.725, p<.05], "cognitive strategies" [$F_{(3-986)}$=3.125, p<.05], ''meta-cognitive strategies'' [$F_{(3-986)}$=5.494, p<.05], ''affective strategies'' [$F_{(3-986)}$=4.127, p<.05] and in the whole scale [$F_{(3-986)}$=5.715, p<.05]. The middle school students' vocabulary learning strategies were found to be not varying significantly depending on grade level in the sub-dimensions of "compensation strategies" [$F_{(3-986)}$=2.420, p>.05] and "social strategies" [$F_{(3-986)}$=2.499, p>.05]. According to the results of Turkey test conducted to determine the source of the difference, there are significant differences in the sub-dimension of "memory strategies" between the 5th graders $\overline{(X} = 24.31)$ and 7th graders $(\overline{X} = 22.09)$ in favour of the 5th graders; between the 5th graders $(\overline{X} = 24.31)$ and 8th graders $(\overline{X} = 22.58)$ in favour of the 5th graders, between the 6th graders $(\overline{X} = 24.77)$ and 7th graders $(\overline{X} = 22.09)$ in favour of the 6th graders, between the 6th graders $(\overline{X} = 24.77)$ and 8th graders $(\overline{X} = 22.58)$ in favour of the 8th graders. According to the results of Tukey test, there is a significant difference in the sub-dimension of "cognitive strategies" between the 6th graders $(\overline{X} = 16.58)$ and the 8th graders $(\overline{X} = 14.99)$ in favour of the 6th graders. According to the

results of Dunnett's C test, there are significant differences in the sub-dimension of "meta-cognitive strategies" between the 5th graders ($\overline{X}$ = 14.90) and the 7th graders ($\overline{X}$ = 13.77) in favour of the 5th graders and between the 6th graders ($\overline{X}$ = 14.96) and 7th graders $\overline{X}$ = 13.77) in favour of the 6th graders. According to the results of Tukey test, there are significant differences in the sub-dimension of "affective strategies" between the 5th graders ($\overline{X}$ = 21.55) and the 7th graders ($\overline{X}$ = 20.14) in favour of the 5th graders; between the 7th graders ($\overline{X}$ = 20.14) and the 8th graders ($\overline{X}$ = 21.93) in favour of the 8th graders and between the 6th graders ($\overline{X}$ = 21.77) and the 7th graders ($\overline{X}$ = 20.14) in favour of the 6th graders. According to the results of Dunnett's C test, there are significant differences in the whole scale between the 5th graders ($\overline{X}$ = 109.97) and the 7th graders ($\overline{X}$ = 102.77) in favour of the 5th graders and between the 6th graders ($\overline{X}$ = 111.88) and the 7th graders ($\overline{X}$ = 102.77) in favour of the 6th graders. Thus, it can be said that the vocabulary learning strategies of the 5th and 6th graders are better than the vocabulary learning strategies of the 7th graders.

The results of the t-test analysis conducted to find an answer to the sub-problem "Do the middle school students' vocabulary learning strategies in foreign language vary significantly depending on mother attitude?" are presented in Table 13.

Table 13. Results of the t-Test Conducted to Determine whether the Middle School Students' Vocabulary Learning Strategies in Foreign Language Vary Significantly Depending on Mother Attitude

	Mother Attitude	n	x̄	SD	df	t	p	Cohen's d
Memory Strategies	Democratic	858	24.15	6.18	988	4.391	.000*	0.39
	Authoritarian	132	21.59	6.70				
Cognitive Strategies	Democratic	858	16.00	4.68	988	3.201	.001*	0.29
	Authoritarian	132	14.59	4.89				
Compensation Strategies	Democratic	858	13.47	3.83	988	3.529	.000*	0.31
	Authoritarian	132	12.18	4.23				
Meta-cognitive Strategies	Democratic	858	14.77	3.50	165.728	2.862	.005*	0.27
	Authoritarian	132	13.75	3.87				
Affective Strategies	Democratic	858	21.66	5.03	988	4.286	.000*	0.40
	Authoritarian	132	19.65	5.00				
Social Strategies	Democratic	858	19.80	5.59	988	4.081	.000*	0.38
	Authoritarian	132	17.68	5.36				
Vocabulary Total	Democratic	858	109.90	22.96	988	4.849	.000*	0.44
	Authoritarian	132	99.45	23.51				

(*p<.05)

As can be seen in Table 13, the middle school students' vocabulary learning strategies in foreign language vary significantly depending on mother attitude in the sub-dimensions of "memory strategies" [$t_{(988)}$=4.391, p<.05], "cognitive strategies" [$t_{(988)}$=3.201, p<.05]), "compensation strategies" [$t_{(988)}$=3.529, p<.05], "meta-cognitive strategies" [$t_{(165.728)}$=2.862, p<.05], "affective strategies" [$t_{(988)}$=4.286, p<.05]), "social strategies" [$t_{(988)}$=4.081, p<.05] and in the whole scale [$t_{(988)}$=4.849, p<.05]] in favour of the students whose mother exhibit democratic attitudes.

The results of the t-test analysis conducted to find an answer to the sub-problem "Do the middle school students' vocabulary learning strategies in foreign language vary significantly depending on father attitude?" are presented in Table 14.

Table 14. Results of the t-Test Conducted to Determine whether the Middle School Students' Vocabulary Learning Strategies in Foreign Language Vary Significantly Depending on Father Attitude

	Father Attitude	n	x̄	SD	df	t	p	Cohen's d
Memory Strategies	Democratic	841	24.19	6.19	988	4.488	.000*	.39
	Authoritarian	149	21.69	6.55				
Cognitive Strategies	Democratic	841	16.01	4.70	988	3.133	.002*	.27
	Authoritarian	149	14.69	4.77				
Compensation Strategies	Democratic	841	13.48	3.80	988	3.518	.000*	.29
	Authoritarian	149	12.26	4.33				
Meta-cognitive Strategies	Democratic	841	14.83	3.52	988	4.189	.000*	.36
	Authoritarian	149	13.51	3.64				
Affective Strategies	Democratic	841	21.65	4.96	988	3.869	.000*	.33
	Authoritarian	149	19.92	5.40				
Social Strategies	Democratic	841	19.78	5.61	988	3.519	.000*	.31
	Authoritarian	149	18.04	5.36				
Vocabulary Total	Democratic	841	109.98	22.81	988	4.804	.000*	.41
	Authoritarian	149	100.14	24.28				

(*p<.05)

As can be seen in Table 14, the middle school students' vocabulary learning strategies in foreign language vary significantly depending on father attitude in the sub-dimensions of "memory strategies" [$t_{(988)}$=4.488, p<.05], "cognitive strategies" [$t_{(988)}$=3.133, p<.05)], "compensation strategies" [$t_{(988)}$=3.518, p<.05], "meta-cognitive strategies" [$t_{(988)}$=4.189, p<.05], "affective strategies" [t(988)=3.869, p<.05)], "social strategies" [$t_{(988)}$=3.519, p<.05] and in the whole scale [$t_{(988)}$=4.804, p<.05)] in favour of the students whose fathers exhibit democratic attitudes.

The results of the one-way variance analysis conducted to find an answer to the sub-problem "Do the middle school students' vocabulary learning strategies in foreign language vary significantly depending on their interest in English course?" are presented in Table 15.

Table 15. Results of the One-way Variance Analysis Conducted to Determine whether the Middle School Students' Vocabulary Learning Strategies in Foreign Language Vary Significantly Depending on their Interest in English Course

	Level of interest	n	x̄	SD	df	F	p	η2	Sig. Dif.
Memory Strategies	Low	95	17.17	5.63	2-987	124.819	.000*	.20	Low-Medium
	Medium	495	22.78	5.56					Low-High
	High	400	26.66	5.74					Medium-High
	Total	990	23.81	6.31					
Cognitive Strategies	Low	95	12.28	4.36	2-987	52.630	.000*	.09	Low-Medium
	Medium	495	15.32	4.36					Low-High
	High	400	17.25	4.70					Medium-High
	Total	990	15.81	4.73					
Compensation Strategies	Low	95	10.41	3.75	2-987	68.634	.000*	.12	Low-Medium
	Medium	495	12.67	3.65					Low-High
	High	400	14.76	3.66					Medium-High
	Total	990	13.30	3.91					
Meta-cognitive Strategies	Low	95	11.41	3.84	2-987	97.848	.000*	.16	Low-Medium
	Medium	495	14.03	3.33					Low-High
	High	400	16.15	3.02					Medium-High
	Total	990	14.63	3.57					
Affective Strategies	Low	95	17.82	5.46	2-987	66.135	.000*	.11	Low-Medium
	Medium	495	20.55	4.81					Low-High
	High	400	23.29	4.52					Medium-High
	Total	990	21.39	5.07					
Social Strategies	Low	95	16.42	5.13	2-987	26.036	.000*	.05	Low-Medium
	Medium	495	19.14	5.04					Low-High
	High	400	20.72	6.03					Medium-High
	Total	990	19.52	5.60					
Vocabulary Total	Low	95	85.52	22.90	2-987	114.084	.000*	.18	Low-Medium
	Medium	495	104.54	20.57					Low-High
	High	400	118.86	21.10					Medium-High
	Total	990	108.50	23.30					

(*p<.05)

As can be seen in Table 15, the middle school students' vocabulary learning strategies in foreign language vary significantly depending on their level of interest in English course in the sub-dimensions of "memory strategies" [$F_{(2-987)}$=124.819, p<.05], "cognitive strategies" [$F_{(2-987)}$=52.630, p<.05], "compensation strategies" [$F_{(2-987)}$=68.634, p<.05], "meta-cognitive strategies" [$F_{(2-987)}$=97.848, p<.05], "affective strategies" [$F_{(2-987)}$=66.135, p<.05], "social strategies" [$F_{(2-987)}$=26.036, p<.05] and in the whole scale [$F_{(2-987)}$=114.084, p<.05]. According to the results of Tukey test conducted to determine the source of the difference, there are significant differences between all the levels of interest in the sub-dimension "memory strategies". In this regard, when the vocabulary learning strategies mean scores of the groups were examined, it was found that the highest mean score was taken by the students with high level of interest ($\overline{X}$ =26.66), followed by the students with middle level of interest ($\overline{X}$ =22.78) and the students with low level of interest ($\overline{X}$ = 17.17). According to the results of Tukey test, there are significant differences between all levels of interest in the sub-dimension of "cognitive strategies". In this regard, when the vocabulary learning strategies mean scores of the groups were examined, it was found that the highest mean score was taken by the students with high level of interest ($\overline{X}$ =17.25), followed by the students with medium level of interest ($\overline{X}$ = 15.32) and the students with low level of interest ($\overline{X}$ = 12.28). According to the results of Tukey test, there are significant differences between all the levels of interest in the sub-dimension of "compensation strategies". In this regard, when the vocabulary learning strategies in foreign language mean scores were examined, it was found that the highest mean score was taken by the students with high level of interest ($\overline{X}$ = 14.76), followed by the students with medium level of interest ($\overline{X}$ = 12.67) and the students

with low level of interest ($\overline{X} = 10.41$). According to the results of Dunnett's C test, there are significant differences between all levels of interest in the sub-dimension of "meta-cognitive". In this regard, when the vocabulary learning strategies mean scores of the groups were examined, it was found that the highest mean score was taken by the students with high level of interest ($\overline{X} = 16.15$), followed by the students with medium level of interest $\overline{X} = 14.03$) and the students with low level of interest ($\overline{X} = 11.41$). According to the results of Tukey test, there are significant differences between all levels of interests in the sub-dimension of "affective strategies". In this regard, when the vocabulary learning strategies mean scores of the groups were examined, it was found that the highest mean score was taken by the students with high level of interest ($\overline{X} = 23.29$), followed by the students with medium level of interest $\overline{X} = 20.55$) and the students with low level of interest ($\overline{X} = 17.82$). According to the results of Dunnett's C test, there are significant differences between all levels of interest in the sub-dimension of "social strategies". In this regard, when the vocabulary learning strategies mean scores of the groups were examined, it was found that the highest mean score was taken by the students with high level of interest ($\overline{X} = 20.72$), followed by the students with medium level of interest $\overline{X} = 19.14$) and the students with low level of interest ($\overline{X} = 16.42$). According to the results of Tukey test, there are significant differences between all levels of interest in the whole scale. In this regard, when the vocabulary learning strategies mean scores of the groups were compared, it was found that the highest mean score was taken by the students with high level of interest ($\overline{X} = 118.86$), followed by the students with medium level of interest ($\overline{X} = 104.54$) and the students with low level of interest ($\overline{X} = 85.52$). Thus, it was concluded that the students with higher level of interest in English course have better vocabulary learning strategies.

The results of the correlation analysis conducted to find an answer to the fifth sub-problem of the study "Is there a significant correlation between the middle school students' self-regulation skills and vocabulary learning strategies in foreign language?" are presented in Table 16.

Table 16. Correlations between the Middle School Students' Self-regulation Skills and Vocabulary Learning Strategies in Foreign Language

Dimensions	1	2	3	4	5	6	7	8	9	10
1. Being open	1									
2. Searching	.71**	1								
3. Self-regulation Total	.91**	.93**	1							
4. Memory Strategies	.52**	.59**	.60**	1						
5. Cognitive Strategies	.43**	.50**	.50**	.62**	1					
6. Compensation Strategies	.46**	.49**	.52**	.61**	.63**	1				
7. Meta-cognitive Strategies	.52**	.57**	.59**	.59**	.51**	.55**	1			
8. Affective Strategies	.52**	.55**	.58**	.57**	.51**	.52**	.62**	1		
9. Social Strategies	.43**	.49**	.50**	.49**	.52**	.54**	.49**	.56**	1	
10. Vocabulary Learning Total	.60**	.67**	.69**	.83**	.79**	.79**	.76**	.79**	.77**	1

* p< 0.05

As can be seen in Table 16, there is a medium, positive and significant correlation between the middle school students' self-regulation strategies and vocabulary learning strategies in foreign language (r=0.69; p<0.05).

Discussion and Conclusion

The middle school students' level of self-regulation skills was found to be over the medium value. Parallel to the finding of the current study, Aldan Karademir et al. (2018) stated that the middle school students' level of self-regulation strategies is over the medium value. Harrison and Prain (2009) revealed that the middle school 8th graders' level of self-regulation strategies in English course is over the medium value. Akkaya (2012); Kanat and Kozikoglu (2018); Mutweleli (2014) reported that the middle school students' level of self-regulation strategies is over the medium value. It can be said that the students consider themselves as adequate in terms of their vocabulary learning strategies and that they contribute to their academic achievement.

The middle school students' self-regulation skills were found to be varying significantly depending on gender in the sub-dimensions of "being open" and "searching" and in the whole scale in favour of the female students. In the literature, there are studies reporting similar findings. Akkaya (2012); Erdogan and Sengul (2014), for instance, revealed that the middle school students' self-regulation skills vary significantly in favour of the female students. Uredi and Uredi (2005) found that the middle school male students use more self-regulation strategies, which does not concur with the finding of the current study. Given that self-regulation skills are acquired from early ages onwards, these skills may vary due to many factors such as different ways of raising male and female students adopted in the society, the place of residence, culture, physiological and biological developmental differences and earlier maturation of females than males.

The middle school students' self-regulation strategies were found to be varying depending on grade level in the sub-dimension of "being open". In this regard, it was found that there is a significant difference between the 7th and 8th

graders in the sub-dimension of "being open" in favour of the 8th graders; thus, it can be argued that the 8th graders' self-regulation skills are better than those of the 7th graders. Aldan Karademir et al. (2018) reported that middle school students' self-regulation strategies are better in lower grade levels. This finding contradicts with the related finding of the current study. Zimmerman and Martinez Pons (1990) reported findings parallel to the findings of the current study. They found that the 11th graders use self-regulation strategies better than the 8th graders and the 8th graders better than the 5th graders. In this connection, it can be said that with increasing age, students become more autonomous, free and independent and have more developed self-regulation skills and they conduct their learning in a more planned, conscious manner. In the sub-dimension of "searching" and in the whole scale, no grade level-based significant differences were found.

The middle school students' self-regulation skills were found to be varying significantly depending on mother and father attitude in the sub-dimensions of "being open" and "searching" and in the whole scale in favour of the students whose mothers and fathers have democratic attitudes. Uredi (2005) found that the children of families with democratic attitudes have better self-regulated learning strategies than the children of families with authoritarian, negligent and indulgent attitudes. These findings are parallel to the findings of the current study. Thus, it can be said that the children raised in democratic families are more successful and socially and psychologically healthier.

The middle school students' self-regulation skills were found to be varying significantly depending on the level of interest in English course in the sub-dimensions of "being open" and "searching" and in the whole scale. When the self-regulation mean scores of the groups were examined, it was found that the highest mean score was taken by the students with high level of interest, followed by the students with medium level of interest and the students with low level of interest. Wolters and Pintrich (1998) stated that the students' use of task value, self-efficacy, cognitive and self-regulation strategies while being engaged in learning activities was a positive predictor of their achievement in Mathematics, English and Social studies. Kucuksuleymanoglu (1997) stated that some personality traits affect students' attitudes towards English course. In this connection, it is said that learners with self-regulation skill are more active in their learning processes and self-regulation skill, which has a positive effect on students' academic achievement, increases the interest in and desire for English course.

It was determined that middle school students' use of vocabulary learning strategies in foreign language was above the medium value. Izci and Ozgan Sucu (2013) stated that the middle school 8th grade students used medium level of language learning strategies while learning English and Uzulmez (2015), on the other hand, stated that the 8th grade students' use of vocabulary learning strategies is at the medium level. The findings of these studies support the findings of the present study. Cevik et al. (2018) found the arithmetic mean of the middle school students' vocabulary learning strategies scores (94.07) under the medium value. This finding contradicts with the related finding of the current study. As a result, it can be concluded that the middle school students' vocabulary learning strategies' being over the medium value can facilitate their learning English.

The middle school students' vocabulary learning strategies were found to be varying significantly depending on gender in the sub-dimensions of "memory strategies", "cognitive strategies", "meta-cognitive strategies", "affective strategies" and in the whole scale in favour of the female students. In a study conducted by Cevik et al. (2018) on middle school students, it was found that the female students' rate of using cognitive strategies is higher than that of the male students. Serabatir (2008) concluded that the middle school 6th and 7th grade students' state of using vocabulary learning strategies in English classes varied significantly depending gender in favour of the female students. Izci and Ozgan Sucu (2013); in their study on the 8th grade students, found that all the language learning strategies varied significantly depending on gender in favour of the female students. The findings of this study support the findings of the current study. Yaacob et al. (2019) contrary to the findings of the current study, reported that the male students' level of using vocabulary learning strategies is higher than that of the female students.

According to Baron-Cohen, Knickmeyer and Belmonte (2005), the reason for the differentiation of the level of using vocabulary learning strategies depending on gender may be based on male and female cognition. Cognitive profiles of males and females are different from each other. Hall (2011) argued that the reason for female students' being more successful than male students in language learning and use is that their social communication skills and strategy development is more effective than male students. In this connection, the significant difference found in favour of the female students might be because of the female students' using mental processes better than the male students and more developed learning skills of the female students. Such a gender-based significant difference was not found in the sub-dimensions of "social strategies" and "compensation strategies".

The middle school students' vocabulary learning strategies were found to vary depending on grade level in the sub-dimensions of "memory strategies", "cognitive strategies", "meta-cognitive strategies", "affective strategies" and in the whole scale. In the "memory strategies" sub-dimension, significant differences were found between the 5th graders and 7th graders in favour of the 5th graders; between the 5th graders and the 8th graders in favour of the 5th graders; between the 6th graders and the 7th graders in favour of the 6th graders and between the 6th graders and 8th graders in favour of the 6th graders. In the "cognitive strategies" sub-dimension, a significant difference was found between the 6th graders and 8th graders in favour of the 6th graders. In the "meta-cognitive strategies" sub-dimension, there are significant

differences between the 5th graders and the 7th graders in favour of the 5th graders and between the 6th graders and 7th graders in favour of the 6th graders. In the "affective strategies" sub-dimension, there are significant differences between the 5th and 7th graders in favour of the 5th graders; between the 7th graders and 8th graders in favour of the 8th graders and between the 6th and 7th graders in favour of the 6th graders. In the whole scale, there are significant differences between the 5th graders and 7th graders in favour of the 5th graders and between the 6th and 7th graders in favour of the 6th graders. Thus, it can be argued that the 5th and 6th grade students' level of using vocabulary learning strategies in foreign language is higher than that of the 7th graders. In a study conducted by Yaacob et al. (2019) on the middle school students, it was found that with students' increasing grade level, their level of using vocabulary-learning strategies also increases. Thus, this finding reported in the literature does not concur with the finding of the current study.

In general, with increasing grade level, it middle school students' level of using vocabulary learning strategies decreases. In other words, students at lower grades use more vocabulary learning strategies. Due to students' learning phases and status, motivation level, student and teacher expectations and desires, personality traits and language learning goals, differentiation may have occurred between grade levels. With increasing grade level, students' future plans are more clarified and they become more certain about the major they want to specialise in. All these can affect their strategy use and desire and effort for learning a foreign language. No grade level-based significant difference was found in the sub-dimensions of "compensation strategies" and "social strategies".

Middle school students' vocabulary learning strategies in foreign language were found to vary significantly depending on mother-father attitude in the sub-dimensions of "memory strategies", "cognitive strategies", "meta-cognitive strategies", "affective strategies", "compensation strategies" and "social strategies" and in the whole scale in favour of the students whose mothers and fathers exhibit democratic attitudes. According to Erdogdu (2006), students who are able to establish a comfortable dialogue with their parents and are raised in a democratic family environment, can communicate, discuss and exchange ideas on all issues, are more comfortable, active, and can share their opinions and respect different opinions and thoughts in classes.

The family is the first and most important learning environment. From an early age, children acquire a lot of knowledge and skills, attitudes, values, problem solving skills and ways of self-evaluation by taking their parents as models. In addition, the basis of working habits, the desire to learn and the acquisition of the first knowledge is formed in the family environment. While the children at school age participate in the learning environment with these characteristics, the effects of the growing environment, family attitudes and behaviours are revealed. In this context, the place and importance of communication, interaction and sharing are very important in learning the changing and developing language. The success of the strategies used in vocabulary learning can be observed by the richness of the acquired vocabulary acquired, their active use and the ability to communicate.

Middle school students' vocabulary learning strategies in foreign language were found to vary significantly depending on the level of interest in English course in the sub-dimensions of "memory strategies", "cognitive strategies", ''meta-cognitive strategies'', ''affective strategies'', "compensation strategies" and "social strategies" and in the whole scale. When the vocabulary learning strategies mean scores of the groups were examined, it was found that the highest mean score was achieved by the students with high level of interest, followed by the students with medium level of interest and the students with low level of interest. Thus, students with higher level of interest in English course used more vocabulary learning strategies. Somuncuoglu and Yildirim (2000) reported that the students' interest in the course positively affect their attitudes and use of cognitive and meta-cognitive strategies. In this regard, it can be thought that the reason why the interest in English course positively affects the use of vocabulary learning strategies may be that the students having positive opinions about the course try to do what is required by the course willingly and enthusiastically. Moreover, those students have greater motivation and attempt to discover, evaluate, develop and use the learning strategies suitable for better learning.

In the current study, a medium, positive and significant correlation was found between the middle school students' self-regulation skills and vocabulary learning strategies mean scores (r=0.69). Thus, it can be argued that with improving self-regulation skills of students, their level of using vocabulary learning strategies also increases.

As a conclusion, the middle school students' self-regulation skills were found to be over the medium value. It was also found that the middle school students' self-regulation skills were found to be varying significantly depending on gender in the sub-dimensions of "being open", "searching'' and in the whole scale in favour of the female students. No significant difference was found between the students' self-regulation skills depending on grade level in the sub-dimension of "being open". In the sub-dimension of "being open", a significant difference was found between the 7th graders and the 8th graders in favour of the 8th graders. The middle school students' self-regulation skills were found to be varying significantly depending on mother and father attitude in the sub-dimensions of "being open" and "searching" and in the whole scale in favour of the students whose mothers and fathers exhibit democratic attitudes. The middle school students' self-regulation skills were found to be varying depending on the level of interest in English course in the sub-dimensions of "being open" and "searching" and in the whole scale. The highest mean score was taken by the

students with high level of interest, followed by the students with medium level of interest and the students with low level of interest.

Middle school students' level of using vocabulary learning strategies is over the medium value. Middle school students' vocabulary learning strategies in foreign language were found to be varying significantly depending on gender in the sub-dimensions of "memory strategies", "cognitive strategies", ''meta-cognitive strategies'', ''affective strategies'' and in the whole scale. Middle school students' vocabulary learning strategies in foreign language were found to be varying significantly depending on grade level in the sub-dimensions of "memory strategies", "cognitive strategies", ''meta-cognitive strategies'', ''affective strategies'' and in the whole scale. In general, it was found that with increasing grade level, the middle school students' level of using vocabulary learning strategies decreases. Middle school students' vocabulary learning strategies were found to be varying significantly depending on mother and father attitude in the sub-dimensions of "memory strategies", "cognitive strategies", "meta-cognitive strategies'', ''affective strategies'', "social strategies", "compensation strategies" and in the whole scale in favour of the students whose mothers and fathers exhibit democratic attitudes. Middle school students' vocabulary learning strategies were found to be varying significantly depending on the level of interest in English course in the sub-dimensions of "memory strategies", "cognitive strategies", ''meta-cognitive strategies'', ''affective strategies'', "social strategies", "compensation strategies" and in the whole scale. In this regard, the highest mean score was taken by the students with high level of interest followed by the students with medium level of interest and the students with low level of students. A positive, medium and significant correlation was found between the middle school students' self-regulation skills and vocabulary learning strategies in foreign language mean scores.

Suggestions

In self-regulated learning processes, girls use more strategies in all areas. Studies on the reasons for lower self-regulation skills of male students can be done. Developing students' self-regulation skills is facilitated in appropriate learning environments. For this reason, studies on teachers' perceptions, attitudes and practices related to self-regulated learning can be done. Authoritarian parents can be given seminars about what they can do and how they can support their children in order to improve their children's self-regulation skills.

When the literature is reviewed, it is seen that there are few studies about the use of vocabulary learning strategies for middle school students; thus, new studies on this subject can be conducted. Studies on the reasons for male students' lower level of success in vocabulary and language learning in terms of various variables can be done.

English teachers can be given in-service seminars on the use and teaching of effective vocabulary teaching strategies. In these seminars, interactive communication can be established with teachers from countries where foreign languages are taught effectively so that information exchange can be accomplished.

For pre-service teachers of English, elective courses related to vocabulary learning strategies can be included in teacher education programs of education faculties. Meetings can be organised with parents to inform them about how to train their children in English classes and how they can help their children learn vocabulary.

References

Akkaya, R. (2012). *Ilkogretim 7. sınıf ogrencilerinin oz duzenleme stratejileri ve motivasyonel inanclari ile matematige yonelik tutumlari arasindaki iliskinin incelenmesi* [Examining the relationship between self-regulation strategies, motivatinal beliefs and attitudes towards mathematics of 7th grades students]. Paper presented at the X. International Sciences and Mathematics Education Congress, Nigde, Turkey.

Akdogan, D., Velipasaoglu, S., & Musal, B. (2016). Oz duzenlemeli ogrenme [Self-regulated learning]. *The Journal of Pamukkale Medicine, 9*(3), 254-260. doi: 10.5505/ptd.2016.05657.

Aldan Karademir, C., Deveci, O., & Cayli, B. (2018). Ortaokul ogrencilerinin oz duzenlemeleri ve akademik oz-yeterliklerinin incelenmesi [Self-regulation and academic self efficacy of secondary school students]. *The Journal of e-Kafkas Education Researches*, *5*(3), 14-29. doi:10.30900/kafkasegt.446793

Aldan Karademir, C., & Gorgun, S. (2019). Ortaokul ogrencilerinin problem cozmeye yonelik yansitici dusunme becerileri ile oz-duzenleme becerilerinin incelenmesi [Examination of reflective thinking and self regulation skills of secondary school students for problem solving]. *The Journal of Avrasya International Research*, *7*(16), 292-313.

Arslan, S., & Gelisli, Y. (2015). Algilanan oz duzenleme olceginin gelistirilmesi: Gecerlik ve guvenirlik calismasi [Development of perceived self-regulation scale: Validity and reliability study]. *Sakarya University Journal of Education, 5*(3), 67-74. doi: http://dx.doi.org/10.19126/suje.91303

Baron-Cohen, S., Knickmeyer, R. C., & Belmonte, M. K. (2005). Sex differences in the brain: Implications for explaining autism. *Science,* 310, 819–23. https://doi.org/10.1126/science.1115455

Boekaerts, M., & Cascallar, E. (2006). How far have we moved toward the integration of theory and practice in self-regulation? *Educational Psychology Review, 18,* 199-210. doi:10.1007/s10648-006-9013-4

Cameron, L. (2001). *Teaching languages to children.* Cambridge: Cambridge University Press. Retrieved from http://.doi.org/10.1017/CBO9780511733109

Catalan, R. (2003). Sex differences in L2 vocabulary learning strategies. *Applied Linguistics*, *13*(1), 54-77. http://doi.org/10.1111/1473-4192.00037

Cevik, H., Orakci, S., Aktan, O., Toraman, C., & Aycicek, B. (2018). Ortaokul ogrencilerinin kelime ogrenme stratejilerinin cesitli degiskenler bakimindan incelenmesi [Examination of vocabulary learning strategies of secondary school students in terms of various variables]. *The Journal of Abant Izzet Baysal University Education Faculty, 18*(2), 796-814.

Cobb, R. (2003). *The relationship between self-regulated learning behaviors and academic performance in web-based courses* (Unpublished doctoral thesis). Virginia State University, Blacksburg, Virginia.

Cohen, A. D. (1999). *Strategies in learning and using a second language*. London, UK & New York, NY: Taylor & Francis Group.

Demircan, Y. (2014). *5. sinif ogrencilerinin sinif ici etkinlik ve akademik basari duzeylerine gore oz duzenleme stratejileri ve motivasyonel inanclarinin incelenmesi* [*Examination of self regulation strategies and motivational beliefs of 5th grades students according to their level of activity and academic achievement*] (Unpublished master's thesis). University of Mersin, Mersin, Turkey.

Erdogdu, M. Y. (2006). Ana-baba tutumlari ve ogretmen davranislari ile ogrencilerin akademik basarilari arasindaki iliskiler [Relationships between parental attitudes and teacher behaviors and students' academic achievements]. *Sakarya University the Journal of Education Faculty, 13*, 23- 33.

Erdogan, F., & Sengul, S. (2014). Ilkogretim ogrencilerinin matematik dersine yonelik oz duzenleyici ogrenme stratejileri uzerine bir inceleme [A review of self regulatory learning strategies for elemantary school students in mathematics]. *The Journal of Education and Training Researches, 3*(3), 108-118.

Gaskill, P. J., & Woolfolk-Hoy, A. (2002). Self-efficacy and self-regulated learning: The dynamic duo in school performance. In J. Aronson and D. Cordova (Eds.), *Improving education: Classic and contemporary lessons from psychology* (pp.183-206). New York, NY: Academic Press.

Ghazal, L. (2007). Learning vocabulary in EFL contexts through vocabulary learning strategies. *Novitas-ROYAL, 1*(2), 84-91.

Harrison, S., & Prain, V. (2009). Self-regulated learning in junior secondary English. *Issues in Educational Research, 19*(3), 227-242.

Hall, G. (2011). *Exploring English language teaching language in action*. New York, NY: Routledge Hall.

Hrbackova, K., & Safrankova, A. P. (2016). Self-regulation of behaviour in children and adolescents in the natural and institutional environment. *Procedia-Social and Behavioral Sciences, 217*, 679–687. doi: 10.1016/j.sbspro.2016.02.119.

Izci, E., & Ozgan Sucu, H. (2013). Ilkogretim 8. sinif ogrencilerinin yabanci dil ogrenirken kullandiklari ogrenme stratejileri [8th grades of students' learning strategies which used in learning English (Instance of Nevsehir province)]. *The Journal of Inonu University Education Faculty, 14*(3), 19-38.

Kanat, F., & Kozikoglu, I. (2018). Ortaokul 8. sinif ogrencilerinin Ingilizce ogrenmeye iliskin oz-duzenleme stratejileri, motivasyonel inanclari ve tutumlari [8th grade secondary school students' self-regulation strategies, motivational beliefs and attitudes towards learning English]. *The Journal of Erzincan University Education Faculty, 20*(3), 725–748. https://doi.org/10.17556/erziefd.435105.

Kauffman, D. F. (2004). Self-regulated learning in web-based environments: Instructional tools designed to facilitate cognitive strategy use, metacognitive processing and motivational beliefs. *J. Educational Computing Research, 30*(1-2), 139-161. doi.org/10.2190/ax2d-y9vm-v7px-0tad

Kocaman, O., & Kizilkaya Cumaoglu, G. (2014). Developing the scale of vocabulary learning strategies in foreign languages. *Education and Science, 39*(176), 293-303. doi: 10.15390/EB.2014.3611

Kucuksuleymanoglu, R. A. (1997). *A path pnalytic study for english language attitude, and students' background chareccteristics in an ELT program: A case study* (Unpublished master's thesis). METU, Ankara, Turkey.

Mutweleli, S. M. (2014). *Academic motivation and self-regulated learning as predictors of academic achievement of students in public secondary schools in Nairobi Country, Kenya* (Unpublished doctoral dissertation). University of Kenyatta, Kenya.

Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge, UK: Cambridge University Press.

Oxford, R. L. (1990). *Language learning strategies: What every teacher should know.* Boston, MA: Heinle & Heinle.

Pintrich, P. R. (1999). The role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research*, *31*(6), 459-470. doi.org/10.1016/s0883-0355(99)00015-4

Pintrich, P. R. (2000). The role of goal orientation in self-regulated learning. In M. Boekaerts, P. R. Pintrich & M. Zeidner (Eds.), *Handbook of self regulation: Theory, research and applications* (pp. 452-502). San Diego, CA: Academic.

Rubin, J. (1987). Learner strategies: Theoretical assumptions, research history and typology. In Wenden, A., & Rubin, J. (Eds.), *Learner strategies in language learning* (pp.15-30). New York, NY: Prentice Hall.

Secer, I. (2015). *SPSS ve lisrel ile pratik veri analizi* [Practical data analaysis with SPSS and Lisrel]. Ankara, Turkey: Ani Publishing.

Serabatir, S. (2008). *Ilkogretim 6. ve 7. sinif ogrencilerinin Ingilizce dersinde kullandiklari kelime ogrenme stratejileri* [*6th and 7th grades students' usage of vocabulary learning strategies in English course]* (Unpublished master's thesis). University of Abant Izzet Baysal, Bolu, Turkey.

Sener, S. (2015). Vocabulary learning strategy preferences and vocabulary size of preservice English teachers*. Educational Research Association the International Journal of Educational Researchers, 6*(3), 15-33.

Somuncuoglu, Y., & Yildirim, A. (2000). Ogrenme stratejileri kullaniminin cesitli degiskenlerle iliskisi [The relationship between the use of learning strategies and various variables]. *Education and Science, 25*(115), 57-64.

Uredi, I., & Erden, M. (2009). Oz duzenleme stratejileri ve motivasyonel inanclarinin yordayicisi olarak algilanan anne baba tutumlari [Self-regulation strategies and perceived parental attitudes as predictors of motivational beliefs]. *The Journal of Turkish Education Sciences, 7*(4), 781-811.

Uredi, I. (2005). *Algilanan anne baba tutumlarinin ilkogretim 8. sinif ogrencilerinin oz-duzenleyici ogrenme stratejileri ve motivasyonel inanclari uzerindeki etkisi* [The contributions of perceived parenting styles to 8th class primary school students' self regulated learning strategies and motivational beliefs] (Unpublished doctoral dissertation). University of Yildiz Teknik, Istanbul, Turkey.

Uredi, I., & Uredi, L. (2005). Ilkogretim 8. sinif ogrencilerinin oz duzenleme stratejileri ve motivasyonel inanclarinin matematik basarisini yordama gucu [Predictive power of 8th grade students' self-regulation strategies and motivational beliefs towards mathematics achievements]. *The Journal of Mersin University Education Faculty*, *1*(2), 250-260.

Uzulmez, Y. K. (2015). *Ortaokul 8. sinif ogrencilerinin Ingilizce dersine karsi tutumlarinin ve Ingilizce kelime ogrenme stratejilerinin cesitli degiskenler acisindan incelenmesi* [Examination of 8th grade students' attitudes towards English lesson and English word Learning strategies in terms of various variables] (Unpublished master's thesis). University of Mersin, Mersin, Turkey.

Vocabulary knowledge. (1998). *Merriam-Webster's collegiate dictionary* (10 th ed.). Springfield, MA: Merriam-Webster.

Vohs, K. D., & Baumeister, R. F. (2011). *Handbook of self-regulation: Research, theory, and applications* (3rd ed.)*.* New York, NY & London, UK: The Guilford Press.

Wenden, A., & Rubin, J. (1987). *Learner strategies in language learning*. Englewood Cliffs, NJ: Prentice Hall.

Wolters, C. A., & Pintrich, P. R. (1998). Contextual differences in student motivation and self-regulated learning in mathematics, English and social studies classrooms. *Instructional Science*, *26*, 27-47. doi.org/10.1007/978-94-017-2243-8_6

Yazicioglu, Y., & Erdogan, S. (2007). *SPSS uygulamali bilimsel arastirma yontemleri* [SPSS applied scientific research methods]*.* Ankara, Turkey: Detay Publishing.

Yaacob, A., Shapii, A., Alobaisy A. S., Al-Rahmi, W. M., Al-Dheleai, Y. M., Yahaya, N., & Alamri, M. M. (2019). Vocabulary learning staratagies through secondary students at Saudi school in Malaysia. *SAGE open, 9*(1) 1-12. https://doi.org/10.1177/21582440198359

Zimmerman, B. J. (2001). Theories of self-regulated learning and academic achievement: An overview and analysis. In Zimmerman, B. J., & Schunk, D. H. (Eds.), *Self-regulated learning and academic achievement* (pp. 1-33). New Jersey, NJ: Lawrence Erlbaum Associates Inc.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice*, *41*(2), 64-70. doi:10.1207/s15430421tip4102_2

Zimmerman, B. J., & Pons, M. N. (1990). Student differences in self-regulated learning: Relating grade, sex and giftedness to self-efficacy and strategy use. *Journal of Educational Psychology*, *82*(1), 51-59. doi: 10.1037/0022-0663.82.1.51

Zimmerman, B. J., & Schunk, D. H. (2011). *Handbook of self-regulation of learning and performance.* New York, NY & London, UK: Routledge Taylor & Francis Group.