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Self-regulatory capacity in vocabulary learning: Does it make difference?

Kelime öğrenme öz düzenleme kapasitesi: Fark yaratır mı?

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ABSTRACT

This study aimed to find the impact of self-regulatory capacity in vocabulary learning on students' vocabulary scores. The study followed a quantitative methodology, in which the survey method was taken up to gather data and make statistical inferences about the population being studied. The participants, preparatory class students, received the "Self-Regulatory Vocabulary Learning Capacity Scale" developed by Tseng et al. (2006) and translated into Turkish by Yeşilbursa and Bilican (2013). Descriptive statistics showed that participants mostly keep environmental factors under control when studying vocabulary. A multivariate analysis of variance (MANOVA) identified an apparent vocabulary success level effect on self-regulatory vocabulary learning capacity components. It was found that participants with high vocabulary scores have higher self-regulatory vocabulary learning capacity when compared with those who have lower scores. This result indicated that self-regulatory vocabulary learning capacity could be a predictor of vocabulary achievement. Multiple regression analysis was conducted to understand the degree of causal links between vocabulary achievement and self-regulatory vocabulary learning capacity. The results showed that self-regulatory vocabulary learning capacity can only explain 15.8% of the vocabulary scores of the participants.

ÖZ

Bu çalışmanın amacı harmanlanmış öğrenme yöntemiyle işlenen bir fen konusunun ortaokul öğrencileri üzerindeki etkilerini araştırmaktır. Amerika'da, çoğunluğu düşük sosyoekonomik düzeylerden gelen yedinci sınıf öğrencileriyle harmanlanmış olarak kalıtım konusu işlenmiştir. Bu eğitimde öğrenciler bazı etkinlikleri çevrimiçi ve bireysel olarak tamamlarken, bazi etkinlikler ve tartışmalar sınıfta yüzyüze yapılmıştır. Genel olarak eğitim araştırmalarında bulunan örüntüler burada da tekrarlanmıştır. Öğrencilerin son testteki performansları okuma yetenekleri, konu hakkındaki ön bilgileri ve öz yeterlikleri ile doğru

orantılıdır. Öğrencilerin konuya duygusal yaklaşımlarını (ilgi ve beğeni) öngören değişkenler ise öğrencilerin önbilgileri değil, okuma yetenekleri ve özyeterlilikleridir. Bu sonuçlar, teknoloji ile zenginleştirilmiş eğitimlerin faydasının öğrenci özelliklerine bağlı olarak değişebileceğini göstermektedir.

INTRODUCTION

The importance of learning lexis in a second language learning context for better and fluent productions in the target language has been demonstrated by plenty of research so far (Nation, 2001; Read, 2000). This indispensable need for acquiring lexical items is reinforced by Long's (1997) statement that says SLA inquiry should focus on acquiring linguistic knowledge associated with phonology, lexicon, and morph-syntactic rules. To support this issue, Krashen (1989) claims that vocabulary knowledge is essential for integrating four skills and considers insufficient vocabulary knowledge a great hindrance to learners. However, the acquisition of lexical items often presents a source of frustration for language learners. Their attempt to learn certain vocabulary items may give rise to failure and discouragement, resulting in, with half-remembered lexical knowledge, unsuccessful trials to use appropriate words in different contexts. Such failures have led researchers to find ways of empowering language learners to raise their awareness of keeping their self-track in learning, which may aid in raising self-directed and autonomous learners.

Furthermore, Macaro (2001) attracted the attention of the researchers on the fact that learners who are pro-active in their pursuit of language learning are better learners. In line with Macaro's statement, most research studies have proven that language learners using learning strategies can acquire language easier when compared with those who do not (Mizumoto, 2013; Zimmerman,1989; Zaki & Ellis, 1999). To highlight the importance of self-regulation while learning vocabulary, Nation (2008) discusses that teachers must "in order of importance plan, do strategy training, test and teach vocabulary" for a well-designed vocabulary development program (p1). Nation's recommendation shows that strategy training is crucial for vocabulary teaching. Therefore, the study of self-regulation has gained increasing recognition in ELT, and research on learning strategies has given its place to research on self-regulated learning behaviors. In light of the research on these studies, possible causal links between self-regulatory capacity for learning and student achievement in a foreign language have been pointed out. This study focuses on the effect of self-regulatory vocabulary learning strategies on students' vocabulary achievement in language classes.

Literature Review

The strategies that learners deploy in their foreign language learning journey have been investigated thoroughly in the literature. Practical applications of strategy training have been offered, and some empirical studies followed these practical applications. The body of research has eventually presented some claims on the positive contribution of self-regulatory behaviors on achievement in various domains of language learning (Nabavi & Shangarffam, 2012; Randi & Corno, 2000). Studies investigating the effect of this capacity have suggested that self-regulation capacity plays a mediating role between learners' strategy use and language achievement. Self-regulation refers to learners' systematic and conscious attempts to achieve educational goals (Zimmerman & Bandura, 1994). In recent years, most studies in language teaching have focused on empowering learners to become self-directed and independent in their language learning journey (Tseng, Dornyei&Schmitt, 2006) as it has been found that learners who take control of their learning to monitor their performance and advance more in the target language while those with a lower level of self-control fall behind (Coxhead, 2006). In light of research findings on the positive contribution of self-regulatory capacity in language learning, some studies specifically focused on the influence of it on lexical knowledge of learners, and found a strong positive relationship between self-regulatory behaviors and achievement in vocabulary knowledge (Hardi, 2014; Sentürk, 2016; Zarei, 2012). Therefore, learners' conscious and active participation in their vocabulary learning process has been investigated by a scale developed by Tseng et al. (2006). This system consists of five facets: commitment control, metacognitive control, satiation control, emotion control, and environmental control. Commitment control refers to learners' perseverance and attempts to increase the chances of achieving their original goals depending on either instrumental motivation or intrinsic motivation. Metacognitive control strategies involve monitoring and keeping concentration and coping with procrastination. These strategies cover planning routines to study and eliminating all potential problems at the onset of the study. Satiation control is related to adding extra attraction to the tasks and coping with boredom. Emotion control means monitoring disruptive emotional states or moods by overcoming negative feelings or emo-

tions while studying. Lastly, environmental control refers to learners' ability to organize their physical environment by eliminating possible or existing distractors. The scale was validated by Tseng et al. (2006), and Yeşilbursa and Bilican (2013) translated it into Turkish and validated it.

Some studies have investigated the relevance of self-regulation and vocabulary achievement. For example, Ma ping and Siraj's (2021) study was concluded by an urgent need to enhance Chinese learners' self-regulation in vocabulary learning. In addition, Mizumoto's (2013) study found a steady increase in learners' vocabulary test grades after they received intended self-regulatory intervention. In a similar vein, Sentürk (2016) found a strong positive correlation between high levels of self-regulation and high vocabulary scores. Although these and similar studies have shed some light on the self-regulatory capacity of vocabulary learning, there is still a need for further investigation to eliminate factors affecting the vocabulary success of learners. Therefore, the current study attempts to partially fill in the existing gap in the literature by investigating the relationship between the self-regulatory capacity of vocabulary learning and vocabulary success.

METHOD

This study follows a quantitative methodology, in which the survey method was taken up to gather data and make statistical inferences about the population being studied. Researchers favor survey methodology as it enables them to collect information on how people report themselves on their perspectives, beliefs, motivations, etc. (Best & Khan, 2006; Mackey & Gass, 2005). This study was primarily concerned with investigating the impact of self-regulatory vocabulary learning capacity on the vocabulary scores of the participants. The study further explored differences between female and male participants regarding self-regulatory vocabulary learning capacity components. To address these issues, the current study sought answers to the following research questions:

1. To what extent are components of self-regulatory vocabulary learning capacity (satiation control, emotion control, environment control, commitment control, and meta-cognitive control) used by prep students?
    a. Does gender interact with self-regulatory vocabulary learning capacity?
    b. Does the level of vocabulary success interact with self-regulatory vocabulary learning capacity?
    c. Is there gender and level of vocabulary success interaction effect on self-regulatory vocabulary learning capacity?
2. Are there any differences in self-regulatory vocabulary learning capacity components in relation to proficiency level?
3. How well do components of self-regulatory vocabulary learning capacity (satiation control, emotion control,

environment control, commitment control, and meta-cognitive control) gender predict learners' vocabulary knowledge?

Setting and Participants

The study took place in one of the state schools in Turkey. The participants were preparatory class students assigned in different proficiency groups by proficiency exams (prepared by the school of foreign languages) conducted four times a year. The questionnaire was administered to only the students who were voluntarily agreed to participate in the study. The following table shows the personal characteristics of the sample (see Table 1).

The table shows that 49.3% of the participants were male, and 50.7% were female. The percentage of the participants in the C level is the highest with 43.9%, while B level participations had the lowest percentage with 16.1. Convenience sampling method in which members of the target population are selected if they meet specific criteria such as geographical proximity, availability at a certain time, easy accessibility, or the willingness to volunteer was used for the study (Dörnyei, 2007).

Instruments

The composite instrument employed in the study consisted of two parts. The first part collected demographic and background information. The second part of the instrument was the "Self-Regulatory Vocabulary Learning Capacity Scale" developed by Tseng et al. in 2006. "Self-Regulatory Vocabulary Learning Capacity" scale was a Likert- type asking for participants to specify their level of agreement from strongly agree (5) to disagree (1) strongly.

Vocabulary Scores

Participants have to take four general language proficiency tests to pass the prep class at the end of each period. Same tests were administered to the participants regardless of their levels to see their advancement and assign them to higher proficiency levels. These tests consist of grammar, vocabulary, reading, writing, and speaking sections. For this study, the vocabulary scores of the participants were elicited from the third-period midterm exam.

Table 1. Participants' Demographic Characteristics

	Frequency	Percent
Gender		
Male	110	49.3
Female	113	50.7
Level		
B1	36	16.1
B1+	89	39.9
C1	98	43.9

Self-regulatory Vocabulary Learning Capacity Scale

The Self-regulatory vocabulary learning capacity scale (SRCvoc) consists of five subscales. The first one is related to goal setting (commitment control); the second one includes sentences on concentration and procrastination (metacognitive control); the third one is related to controlling boredom (satiation control); the fourth one is concerned with dealing with disruptive emotional states emotional control); and finally the fifth one is related with controlling for negative environment (environment control).

Procedures for Data Collection and Analysis

The researcher administered the instrument during regular class hours. Analysis was carried out utilizing SPSS 21. A multivariate analysis of variance (MANOVA) was conducted to compare the main effects of gender and vocabulary success level on components of the SRCvoc scale and to explore the interaction effect between these two variables. Components of this scale were taken as dependent variables, gender and vocabulary success levels were taken as independent variables. The participants were divided into two groups according to their vocabulary knowledge scores as high and low achievers. One-way ANOVA was run to determine differences in components of SRCvoc and proficiency level (B1, B1+, and C1). Multiple regression analysis was run to seek an answer to the second research question. As an initial data screening process, Pearson correlation coefficients of all variables and outliers were checked. Pearson correlation coefficients revealed that all variables but gender under investigation in this study were correlated positively at a statistically significant level. Additionally, singularity does not occur as only subscale scores are entered for regression analysis. Extreme scores were checked and deleted from the data set (Pallant, 2016). Depending on Pallant's (2010) suggestions for regression analysis, the sample size (n=224 on SRCvoc score) was adequate. Therefore, this study had a conformably satisfactory number of participants for such an analysis. The effects of five SRCvoc subscales and gender were tested for their predictive property of the vocabulary score of the participants.

RESULTS

The study initially sought to explore the self-regulatory vocabulary learning capacities of the participants and reveal differences between groups. Descriptive statistics showed that students mostly keep environmental problems while learning vocabulary under control. Descriptive statistics can be found in Table 2.

Participants in this study appear to keep environmental factors under control more than other factors (M=3.77, SD=.650); this is followed by commitment control (M=3.34, SD=.736) and emotion control (M=3.12, SD=725). Metacognitive control (M=3.07,SD=.728) and satiation control (M=3.06, SD=.674). Breakdown of vocabulary scores according to self-regulatory vocabulary learning capacity was presented in table 3.

Table 2. Descriptives for Components of Self-Regulatory Vocabulary Learning Capacity Scale

	N	Mean	Std. Deviation
Environment Control	223	3.77	.65
Commitment Control	222	3.34	.73
Emotion Control	222	3.12	.72
Metacognitive Control	221	3.07	.72
Satiation Control	221	3.06	.67

Table 3. Vocabulary Scores according to Self-Regulatory Vocabulary Learning Capacity Groups

Group	Mean	SD	N
High Self. Reg. Voc. Learn. Cap.	73,12	16,452	134
Low Self. Reg. Voc. Learn. Cap.	58,15	18,346	89

Table 3 shows that vocabulary scores of high self-regulatory vocabulary learning group (M=73.12, SD=16.452) are higher than those of low self-regulatory vocabulary learning capacity group (M=58.15, SD=18.346).

Self-Regulatory Vocabulary Learning Capacity in relation to Gender and Vocabulary Scores

The study also aimed to explore whether component scores of self-regulatory vocabulary learning capacity are stable across different gender (male, female) (see table 4) and vocabulary success levels (high vocabulary achievers, low vocabulary achievers). Another aim was to explore the interaction effect between these two variables. A multivariate analysis of variance (MANOVA) identified a clear vocabulary success level effect on self-regulatory vocabulary learning capacity components. Using Wilk`s Lambda statistics, a significant main effect of participants "vocabulary success level" was found ($\Lambda=.883$, F=5.548, p<.000), indicating a large effect size (partial eta squared = .117). The result of the analysis showed a sharp decrease in all components of self-regulatory vocabulary learning capacity in low vocabulary achievers, which indicated a significant difference between these two groups (in order of size of F values):Emotion Control (High=3.26; Low= 2.72; F= 24.236; p=.000; eta squared= .102; Satiation Control (high=3,180; low=2,717; F= 20.003; p=.000; eta squared= .085; Commitment Control (high=3,466; low=3,024;F= 15.155; p=.000; eta squared= .066; Metacognitive Control (high=3,174; low=2,745; F=14.320; p=.000; eta squared= .063; Environmental Control (high=3,854;low=3,562; F=8.176; p=.005; eta squared= .037. A breakdown of mean values for each component according to vocabulary achievement level can be seen in Table 5. Gender did not seemed to exert main effect on components of self-regulatory vocabulary learning capacity ($\Lambda=.973$, F=1.187, p=.316).

Table 5 indicates that low vocabulary achievers (M=2.73,

Table 4. Vocabulary Scores in Relation to Gender and SRCvoc

	Female		Male	
	Mean	**SD**	**Mean**	**SD**
Low SRCvoc Group	62.27	14.985	53.44	20.165
High SRCvoc Group	73.60	15.665	72.62	14.965

SD=.603) have less satiation control than high vocabulary achievers (M=3.17, SD=.655; F=20.003, p=.000; eta squared =.085); have less emotion control (M=2.72, SD=.690) than high vocabulary achievers (M=3.26, SD= .685; F=24.236; p=.000; eta squared= .102. Similarly, Commitment Control appeared to be lower in low vocabulary achievers (M= 3,024, SD=.775) than high vocabulary achievers (M=3,466, SD= .687; F= 15.155; p=.000; eta squared= .066. Low vocabulary achievers (M=2,745, SD= .711) have less metacognitive control than high vocabulary achievers (M=3,174, SD= .631; F=14.320; p=.000; eta squared= .063). Lastly, environmental control has been observed to be less in low vocabulary achievers (M=3,562, SD= .648) than high vocabulary achievers (M=3,854, SD= .627; F=8.176; p=.005; eta squared= .037).

Self-Regulatory Vocabulary Learning Capacity and Proficiency Level

A one-way ANOVA was conducted to determine if self-regulatory vocabulary learning capacity components differed for groups with different proficiency levels. Proficiency group consisted of three-level: B1 (n=36), B1+ (n=89) and C1 (n=98). Only the emotional control subscale was statistically significantly different between proficiency levels. Post-hoc comparisons using the Bonferroni test demonstrated a significant difference between B level (M=2.89, SD= .619) and C level (M=3.25, SD=.665), p=. 034 with a small effect size.

Self-Regulatory Vocabulary Learning Capacity and gender: Predictor of Vocabulary Scores?

A Pearson's product-moment correlation was run to assess the relationship between the vocabulary scores of the participants and all of the variables under investigation (see table 6). With specific reference to vocabulary scores and other variables, vocabulary scores were related to all significantly but gender. The strongest correlation was with emotion control (r = .342, p<.000); commitment control (r=.335, p<.00); satiation control (r=305, p<.00) ; metacognitive control (r=256, p<.00); environment control (r=.242,p<.00).

To find causal relationship between these variables, a multiple linear regression was run to predict vocabulary achievement of the participants from components of self-regulatory vocabulary learning capacity (satiation control, emotion control, environment control, metacognitive control, and commitment control) and gender.

Emotion control and gender emerged as significant predictors of vocabulary scores of the participants, together explaining 13.8% of the total variation (R^2= .138; Adjusted R^2= .130). This is presented in Table 7.

DISCUSSION AND CONCLUSION

The study's primary purpose was to explore the effect of self-regulatory vocabulary learning capacity on participants' vocabulary scores and compare the effect of gender and vocabulary success levels on participants' self-regulatory vocabulary learning capacity. In addition, the study also aimed to reveal causal links between self-regulatory vocabulary learning capacity components and vocabulary scores.

Descriptive statistics showed that participants mostly keep environmental factors under control when studying vocabulary. This indicates that learners are aware that they need to focus on studying vocabulary without being interrupted or distracted by environmental factors. The least agreed subscale was satiation control which was about controlling boredom while studying vocabulary. The descriptive statistics reveal that students need to be trained in coping with boredom while learning and studying vocabulary.

One-way ANOVA revealed no statistically significant difference between satiation control, environment control, metacognitive control, commitment control but emotion control, and proficiency level. Only emotion control was found to be different between B-level students and C-level students. Therefore, the result of the study indicates that as students advance in their language ability, they may cope with stress when learning vocabulary.

Table 5. Components of Self-Regulatory Vocabulary Learning Capacity according to Vocabulary Achievement Group

	Overall			High Voc. Achievers			Low Voc. Achievers			p
	N	**Mean**	**SD**	**N**	**Mean**	**SD**	**N**	**Mean**	**SD**	
Environment Control	223	3.77	.650	170	3.84	.641	53	3.55	.636	.005
Commitment Control	222	3.34	.736	170	3.45	.687	52	2.99	.787	.000
Emotion Control	222	3.12	.725	169	3.25	.688	53	2.70	.685	.000
Metacognitive Control	221	3.07	.728	169	3.18	.702	52	2.73	.708	.000
Satiation Control	221	3.06	.674	168	3.17	.655	53	2.70	.607	.000

Table 6. Pearson Correlation Coefficients

		1	2	3	4	5	6	7
1	Vocabulary Score	1						
2	Satiation control	.305**	1					
3	Emotion control	.342**	.694**	1				
4	Environment control	.242**	.379**	.359**	1			
5	Commitment control	.335**	.602**	.670**	.429**	1		
6	Metacognitive control	.256**	.552**	.678**	.407**	.645**	1	
7	Gender	.114	-.092	-.081	.072	-.059	.001	1

Table 7. Multiple Regression Analysis for Self-Regulatory Vocabulary Learning (N=223)

Predictors	B	SE_B	β	Sig.
Emotion Control	5.436	2.657	.213	.042
Gender	5.116	2.361	.139	.031
Commitment Control	3.652	2.385	.145	.127
Environment Control	3.153	2.087	.110	.132
Metacognitive Control	-1.798	2.407	-.071	.456
Satiation Control	1.648	2.505	.060	.511

A multivariate analysis of variance (MANOVA) identified an apparent vocabulary success level effect on self-regulatory vocabulary learning capacity components (Table 5). As participants with high vocabulary scores have higher self-regulatory vocabulary learning capacity when compared with those who have lower scores, this result indicates that self-regulatory vocabulary learning capacity is an important factor that can explain student achievement. However, no statistically significant main effect was found for gender, which means that SRCvoc subscale scores were similar for males and females.

To understand the degree of causal links between vocabulary achievement and self-regulatory vocabulary learning capacity, multiple regression analysis was conducted. The results showed that self-regulatory vocabulary learning capacity can only explain 15.8% of vocabulary scores of the participants, which means that self-regulatory vocabulary learning capacity can explain only a limited number of the success rate of the students. The findings from the current study suggest that by increasing the self-regulatory learning capacity of the learners, it would be possible for teachers to help learners enhance their vocabulary level, which will contribute to their foreign language success. The pedagogical implication of the current study results relates to the importance of self-regulatory vocabulary learning on learner achievement. Therefore, teachers should be encouraged to enhance this capacity through vocabulary learning strategy training.

Ethics: There are no ethical issues with the publication of this manuscript.

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