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## ORIGINAL RESEARCH ARTICLE

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### Exploring the Perceptions of Pre-service English Teachers on Vocabulary Learning Strategies in a Foreign Language Teaching Context

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The purpose of this study was to investigate vocabulary learning strategies (VLSs) of pre-service English language teachers in a foreign language teaching context. The data were collected during Fall 2016 semester from 34 second-year and 54 third-year undergraduate students studying English Language Teaching (ELT) at the College of Education of a state university in Turkey. The instrument used to collect the data was a 5-point Likert-Scale survey adapted by Riankamol (2008) from the *Taxonomy of Vocabulary Learning Strategies* developed by Schmitt (1997). The main purpose of the study was to identify mostly preferred VLS categories (Cognitive, Memory, Metacognitive, Determination and Social) by second and third year pre-service teachers in ELT programs and to examine if there are any differences between the second and third year pre-service teachers in terms of the specific VLSs they use. Further, semi-structured interviews were also conducted with 20 students to triangulate the quantitative data with the qualitative data on pre-service teachers' beliefs and attitudes about VLSs. The results indicated some similarities and differences between the two groups of students. Implications highlight the importance of teaching VLSs to pre-service English teachers.

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## INTRODUCTION

Words are the building blocks of a language, and successful acquisition of words lead to better learning of a language. Learning words includes learning both their form and meaning. Thus, vocabulary learning is a key to success in second/foreign language (L2) learning, and L2 learners need to be trained on how to learn new words. Vocabulary teaching focuses on the meanings of words, followed by the forms, and teachers train learners on how to learn new vocabulary based on the meanings and forms (Thornbury, 2002). The task of vocabulary teaching is also a challenging one as teachers need to equip students with multiple forms, meanings, collocations, and usage of words in order to develop their receptive and productive vocabulary skills (Nation, 1990, 2001).

Through the emergence of learner-centered teaching, L2 learners have started to make use of language learning strategies; however, learning these strategies still requires some teacher support. As Tseng, Dörnyei, and Schmitt (2006) state, strategy specialists believe that learners with strategic knowledge of language learning, compared with those without, become more efficient, resourceful, and flexible, thus acquiring a language more easily. They further suggest that if learners can develop, personalize, and use a repertoire of learning strategies, they will be able to achieve language proficiency in a much more facilitated manner.

Although vocabulary learning seems to be an easy process, there are many issues to be considered such as different learner styles, needs and strategies. Since L2 learners have different personal and professional needs, they need to be trained on how to learn new words by employing Vocabulary Learning Strategies (VLS) so that learners can be autonomous in learning new words. It is widely acknowledged that learners use specific autonomous learning strategies to improve their lexical studies. Likewise, VLSs are important because they are considered as the steps for self-directed learning that is necessary for developing learners' lexical competence (Illés, 2012). Not only do VLSs, a subset of learning strategies, help learners acquire new vocabulary, but also research has shown that frequent, effective vocabulary strategy use is associated with higher achievement levels across all language skills (Kojic-Sabo & Lightbown, 1999; Takeuchi, 2003). Since students may find it difficult to improve their strategic competence and sometimes resist strategy training (Brown, 2002), it is, therefore, essential to help learners to become aware of their own styles, preferences and habits, for practicing their effective strategies, get them to practice good strategies, and take charge of their own learning.

Students at English Language Teaching (ELT) departments are considered competent in English because they can attend the ELT programs only if they obtain a very high proficiency in English on their university entrance exam. Thus, they are considered good at listening, speaking, writing and reading, and they are proficient in terms of vocabulary knowledge. Moreover, these students as pre-service language teachers (i.e., teacher candidates) complete extensive pre-service training on their third and fourth years in college. Although many previous studies have been carried out on assessing relationships between strategy use and vocabulary learning, research on assessing VLSs of pre-service English language teachers is limited. Therefore, researchers in this current study investigated what

type of vocabulary learning strategies they are involved in to create awareness on vocabulary learning strategies. In addition, their perceptions on vocabulary learning strategies were also investigated, and two groups of students (i.e., second and third year teacher candidates) were compared based on perception and use of VLSs.

## THEORETICAL FRAMEWORK

### Vocabulary Learning Strategies

Recent research has associated language learners' success with their strategy use in learning languages and has focused on developing strategic language learners (Cohen, 2011; Oxford, 2011; Gu, 2012; Gao & Ma, 2011; Teng, 2015). VLSs have been the focus of many researchers, and being one of the pioneers in "language learning strategies", Oxford (1990) identified a wide variety of vocabulary learning strategies. She divided VLSs into four strategy groups as Social, Memory, Cognitive, and Metacognitive strategies. In Social Strategies (SOC), interaction with other people is used as a strategy to improve language learning. Approaches that relate new material to existing knowledge fall into the Memory Strategies (MEM) category while Cognitive Strategies (COG) exhibit the common function of "manipulation or transformation of the target language by the learner" (Oxford, 1990, p.43). Finally, Metacognitive Strategies (MET) involve a conscious overview of the learning process and making decisions about planning, monitoring, or evaluating the best ways to study (Oxford, 1990).

Cook and Mayer (1983) and Nation (1990) suggested vocabulary activities that are useful for (a) the initial discovery of a word's meaning and (b) remembering that word after its first introduction. When encountering a word for the first time, learners generally use their knowledge of the language, contextual clues, or reference materials to figure out the new meaning (e.g., Determination Strategies), or ask someone who may know the word (e.g., Social Strategies). These strategies for gaining initial information about a new word are labelled "Discovery Strategies" (Schmitt, 1997, p. 6). Furthermore, Nation (2001) suggests taxonomy of various vocabulary learning strategies. The strategies in the taxonomy are divided into three general classes: 'planning', 'source' and 'processes.' Each of these classes includes a subset of key strategies. The taxonomy also gives information on different aspects of vocabulary knowledge (i.e., what is involved in knowing a word) (Nation, 2001; Riankamol, 2008).

Furthermore, Gu and Johnson (1996) categorized L2 vocabulary learning strategies as metacognitive, cognitive, memory and activation strategies. First, metacognitive strategies consist of selective awareness and self-initiation strategies. L2 learners who employ selective awareness strategies know which words are important for them to learn and are essential for adequate comprehension of a passage. Learners employing self-initiation strategies use a variety of means to make the meaning of vocabulary items clear. Next, cognitive strategies in Gu and Johnson's taxonomy involve guessing strategies, skillful use of dictionaries and note-taking strategies. Learners using guessing strategies draw upon their background knowledge and use linguistic clues, including grammatical structures of a

sentence to guess the meaning of a word. On the other hand, memory strategies are classified into practicing and encoding categories. Word lists and repetition are instances of practicing strategies while encoding strategies include such strategies as association, imagery, visual, auditory, semantic, and contextual encoding as well as word-structure (i.e., analyzing a word in terms of prefixes, stems, and suffixes). Finally, activation strategies include those strategies in which the learners actually use new words in different contexts (Riankamol, 2008).

Oxford's classification system was criticized in terms of being unsatisfactory and inadequate in categorizing vocabulary-specific strategies. As Schmitt (1997) states there is no category in Oxford's taxonomy that could adequately describe the kind of strategies used by an individual when faced with discovering a new word's meaning without recourse to another person's expertise. It was, therefore, necessary to create a new category for these strategies: Determination Strategies (DET). Secondly, Oxford's categories proved inadequate in places, as some strategies could easily fit into two or more groups, making their classification difficult (Schmitt, 1997).

Schmitt (1997, 2008) offers a more comprehensive inventory of vocabulary learning strategies. He divides the strategies into two groups: the ones to determine the meaning of new words when learners encounter them the first time, and the ones to consolidate meaning when learners encounter words again. The former group contains determination and social strategies and the latter contains cognitive, metacognitive, memory and social strategies. Schmitt includes social strategies in both categories since they can be used for both purposes. According to Schmitt (1997, 2008), DET are used when "learners are faced with discovering a new word's meaning without recourse to another person's experience" (p. 6). In this case, learners try to discover the meaning of a new word by guessing it with the help of context, structural knowledge of language, and reference materials.

Schmitt (2008) stated, "another way to discover a new meaning is through employing the social strategies of asking someone for help with the unknown words. By the initial discovery of a word, learners need to employ a variety of strategies to practice and retain vocabulary" (p. 6). Learners, thus, use a variety of social, memory, cognitive, and metacognitive strategies to combine their vocabulary knowledge. Cooperative group learning through which learners study and practice the meaning of new words in a group is an instance of social strategies for consolidating a word. On the other hand, memory strategies, traditionally known as Mnemonics, involve relating the word with some previously learned knowledge by using some form of imagery or grouping. Cognitive strategies in this taxonomy are similar to memory strategies but are not focused on manipulative mental processing. They include repetition and using mechanical means such as word lists, flash cards, and vocabulary notebooks to study words. Finally, metacognitive strategies in Schmitt's taxonomy are defined as strategies used by learners to control and evaluate their own learning, by having an overview of the learning process in general. Schmitt's (1997) taxonomy of vocabulary learning strategies is shown below (see Figure 1):

Figure 1

*Schmitt's Taxonomy of Vocabulary Learning Strategies (1997)*

***A Taxonomy of Vocabulary Learning Strategies***

**Strategy Group**

Strategies for the discovery of a new word's meaning

- DET Analyze part of speech
- DET Analyze affixes and roots
- DET Check for L1 cognate
- DET Analyze any available pictures or gestures
- DET Guess from textual context
- DET Bilingual dictionary (e.g. English-Thai dictionary)
- DET Monolingual dictionary (e.g. English-English dictionary) DET Word lists
- DET Flash cards
- SOC (Discovery) Ask teacher for an L1 translation
- SOC (Discovery) Ask teacher for paraphrase or synonym of new word
- SOC (Discovery) Ask teacher for a sentence including the new word
- SOC (Discovery) Ask teacher for meaning
- SOC (Discovery) Discover new meaning through group work activity

**Strategy Group**

Strategies for consolidating a word once it has been encountered

- SOC (Consolidation) Study and practice meaning in a group
- SOC (Consolidation) Teacher checks students' word lists for accuracy
- SOC (Consolidation) Interact with native speakers
- MEM Study word with a pictorial representation of its meaning
- MEM Imagine word's meaning
- MEM Connect word to a personal experience
- MEM Associate the word with its coordinates
- MEM Connect the word to its synonyms and antonyms
- MEM Use semantic maps
- MEM Use "scales" for gradable adjectives
- MEM Peg Method1
- MEM Logic Method2
- MEM Group words together to study them
- MEM Group words together spatially on a page
- MEM Use new word in sentence
- MEM Group words together of a word
- MEM Study the spelling of a word
- MEM Study the sound of a word
- MEM Say new word aloud when studying
- MEM Imagine word form
- MEM Underline initial letter of the word

**Strategy Group**

Strategies for consolidating a word once it has been encountered

- MEM Configuration
- MEM Use keyword Method
- MEM Affixes and roots (remembering)
- MEM Part of speech (remembering)
- MEM Paraphrase the word's meaning
- MEM Use cognates in study

MEM Learn the words of an idiom together  
 MEM Use physical action when learning a word  
 MEM Use semantic feature grids  
 COG Verbal repetition  
 COG Written repetition  
 COG Word lists  
 COG Flash cards  
 COG Take notes in class  
 COG Use the vocabulary section in your textbook  
 COG Listen to tape of word lists  
 COG Put English labels on physical objects  
 COG Keep a vocabulary notebook  
 MET Use English-language media (songs, movies, newspaper, etc)  
 MET Testing oneself with word tests  
 MET Use spaced word practice  
 MET Skip or pass new word  
 MET Continue to study word over time

## Related Research

Many studies concerning the use of VLSs have been conducted so far, and some of these studies investigated the use of VLSs by English as a Second/Foreign Language (ESL/EFL) learners (Aktekin & Guven, 2013; Amirian & Heshmatifar, 2013; Asgari & Mustapha, 2011; Erten & Williams, 2008; Hamzah, Kafipour, & Abdullah, 2009; Lai, 2013; Khatib, Hassanzadeh, & Rezaei, 2011; Kırmızı & Topcu, 2014; Nalkesen & Ozek, 2011; Riankamol, 2008; Teng, 2015). Kırmızı and Topcu (2014) investigated the frequency of the use of foreign language vocabulary learning strategies of Turkish EFL students at Karabuk University as well as the connection between the frequency of VLSs and the field of study, achievement and student status. They found that the participants had moderate level of VLSs. They also observed statistically significant differences among the participants from different fields in terms of top-down strategies, note taking strategies, repetition strategies, activation strategies, and anxiety level, and selective attention, using linguistic clues.

Riankamol (2008) carried out a study to investigate VLSs of English gifted (i.e., high proficient) students and found the most and least frequently used strategies that were used by the learners. The results of her study indicated that these students used metacognitive strategies most frequently while they used cognitive strategies least frequently. In addition, Teng (2015) explored the correlation between direct and indirect vocabulary learning strategies along with the depth and breadth of vocabulary knowledge of 145 low proficiency EFL students. The results indicated that direct strategies were frequently used and indirect strategies were less frequently used strategies by EFL learners. Her study revealed that participants' scores in strategy use were correlated significantly and positively with breadth and depth of vocabulary knowledge. However, indirect strategy use had a higher level of correlation with two dimensions of vocabulary knowledge, implying that EFL students with a higher level of depth and breadth of lexical repertoire tended to use strategies that are more indirect.

Investigating the effects of explicit vocabulary learning strategy instruction on learners' vocabulary acquisition, Lai (2013) collected data from 180 EFL learners enrolled in the freshmen English program at a university in Taiwan. She compared participants' use of these different vocabulary learning strategies and their perceived usefulness of the strategies before and after strategy training as well as student attitudes and opinions toward vocabulary learning strategy use and strategy training. The results of her study suggested that vocabulary learning strategy training could bring about positive effects in students learning, as the majority of the participants reported using a greater number of strategies, using strategies more frequently, and found that such use of strategies was more useful.

Similarly, Nguyen and Gu (2013) have incorporated metacognitive strategy instruction into a writing program and found that learners who received strategy-based instruction outperformed their counterparts in both the post- and the delayed writing tests. Moreover, Macaro and Erler (2008) and Urlaub (2012) found that learners who underwent strategy training outperformed those who did not in the reading comprehension tests. Urlaub (2012) compared improvements in test scores for the intermediate and advanced level and found that the training was more beneficial for the learners of low language proficiency.

In addition, both the explicit vocabulary strategy training designed by Mizumoto and Takeuchi (2009) and the explicit metacognitive strategy training carried out by Rasekh and Ranjbar (2003) resulted in improvements in vocabulary learning and demonstrated that learners who were taught to use strategies outperformed their peers who had not received that training. Furthermore, Peacock and Ho (2003) studied the strategy use of tertiary-level students and found that compensation strategies were the most frequently used strategies, followed by metacognitive, cognitive, memory and affective strategies. Wu's (2008) study also revealed that 10 students in an education program of Hong Kong used a wide variety of metacognitive, cognitive and affective vocabulary learning strategies and improved their vocabulary knowledge. Moreover, Rahimy & Shams (2012) investigated the effectiveness of VLSs on Iranian EFL learners' vocabulary test scores. They gave students an intermediate level vocabulary test of 20 questions based on their class textbook after VLS training. They found a significant effect of VLSs on EFL learners' performance in this vocabulary test.

Additionally, a few studies have investigated the beliefs of EFL learners and/or pre-service and in-service teachers' on VLSs (Gao & Bao, 2011; Hedrik, Harmon, & Wood, 2008). Gao & Bao (2008) investigated the vocabulary learning and teaching beliefs of pre-service and in-service teachers in Hong Kong and in Mainland China by using a mixed-design approach. The analyses revealed variations in the beliefs held by the participants in these two different contexts. Investigating secondary pre-service teachers' familiarity on VLSs and instructional strategies for teaching vocabulary on textbooks, Hedrik et al. (2008) found that the learners were mostly familiar with contextual analysis and semantic mapping. These two strategies also were favored in the usability and the intention to use in future teaching promptings.

## PURPOSE OF THE STUDY

In this study, the researchers aimed to find out the mostly preferred VLS categories (Cognitive, Memory, Metacognitive, Determination and Social) by second and third year pre-service teachers in ELT programs and also to find if there are any differences between the second and third year pre-service teachers in terms of the specific VLSs they use and their perceptions in using these strategies. The main significance of this research focuses on pre-service teachers' consciously making use of VLSs to learn more vocabulary and to be able to teach their future students when they become in-service teachers. As previous literature indicated (Cohen, 2011; Oxford, 2011; Gu, 2012; Gao & Ma, 2011; Teng, 2015), pre-service teachers may assist their students to use VLSs when they engage in learning vocabulary themselves and they may encourage their students to become more autonomous learners. By being aware of VLSs, pre-service teachers may design appropriate materials and activities to help students enhance their lexical competence.

According to the purpose of this study (i.e., to find out the mostly preferred VLS categories (Cognitive, Memory, Metacognitive, Determination and Social) by second and third year pre-service teachers in ELT programs and also to find out if there are any differences between the second and third year pre-service teachers in terms of the specific VLSs they use and their perceptions in using these strategies), four main research questions were posed. To answer the first three research questions, a questionnaire was distributed to the pre-service teachers participating in this study. In addition, to answer the fourth question, semi-structured interviews were carried out with 10 pre-service teachers in each group. The research questions of the study are: a) Which VLSs are preferred by second and third year pre-service teachers in ELT programs? b) Are there any statistically significant differences between the two groups (second and third year pre-service teachers) based on different categories of VLSs? c) Which specific VLSs created statistically significant differences between the two groups (second and third year pre-service teachers), if there are any? And d) What are pre-service teachers' beliefs on VLSs?

## METHODOLOGY

### Subjects

The participants in this study were 54 (41 female and 13 male) third-year ELT students and 34 (20 female and 14 male) second-year students in an ELT program at a state university in Turkey. The age range of third-year students was 19 - 22, and the age range of second-year students was 18 - 21. All participants in this study were pre-service teachers (i.e., teacher candidates) who are preparing to be English teachers to teach English as a foreign language (EFL).



## Instrument and Data Collection Procedures

The data were collected via an adapted survey and semi-structured interviews. The survey included 25 Five-Point Likert-Scale items (see Appendix A) based on Schmitt's taxonomy, and it was originally adapted by Riankamol (2008). Riankamol restructured the survey by modifying some strategy items after carrying out a pilot study with 10 students. The new version of this survey consisted of two parts. The first part included demographic information of the subjects such as their age, gender and duration of their English studies, while the second part consisted of Likert-Scale items. Specifically, in this study, the participants were asked to choose items on a 5-point Likert-Scale (i.e., 1 = *ever use it*, 2 = *seldom use it*, 3 = *sometimes use it*, 4 = *often use it*, 5 = *always use it*) regarding their use of VLSs. Then, semi-structured interviews were carried out with randomly chosen 10 pre-service teachers in each group (i.e., second-year students and third-year students), and they were asked to reflect on their choice of the strategies and the reasons for their preferences. All interviews were recorded and transcribed for data analysis.

## Data Analysis

Quantitative data analysis was conducted through SPSS (version 25.0) by using .05 as the alpha value. To answer the first research question, composite scores for each VLS category were created, and then the means and the standard deviations were calculated. Then, two different independent *t*-tests were conducted to answer the second and the third research question. The first *t*-test was used to find out if there were statistically significant differences between the second-year and third-year pre-service teachers based on the six main categories of VLSs (i.e., Determination Strategies, Social Discovery Strategies, Social consolidation Strategies, Memory Strategies, Cognitive Strategies, Metacognitive Strategies). The second *t*-test was used to find out which specific VLSs created statistically significant differences between the two groups (second and third year pre-service teachers); therefore, the differences were analyzed based on each strategy item, and only the statistically significant differences were reported in the quantitative results section. Finally, semi-structured interview data were transcribed, and emerging themes were analyzed and categorized manually. For reliability, researchers crosschecked the emerging themes after all the qualitative analyses were completed.

# RESULTS

## Quantitative Data Results

In order to answer the first research question, the means and standard deviations of the main VLSs are examined. According to the group statistics, third-year pre-service teachers preferred using cognitive strategies ( $M = 18.01$ ,  $SD = 5.02$ ) to other strategies, including metacognitive strategies ( $M = 16.22$ ,  $SD = 3.06$ ), memory strategies ( $M = 14.11$ ,  $SD = 3.50$ ), social discovery strategies ( $M = 13.14$ ,  $SD = 3.09$ ), determination strategies ( $M$

= 11.33,  $SD = 1.83$ ), and social consolidation strategies ( $M = 9.94$ ,  $SD = 2.66$ ). On the other hand, second-year pre-service teachers preferred using metacognitive strategies ( $M = 17.02$ ,  $SD = 3.27$ ) to other strategies, including cognitive strategies ( $M = 16.20$ ,  $SD = 5.26$ ), memory strategies ( $M = 13.55$ ,  $SD = 3.19$ ), social discovery strategies ( $M = 12.41$ ,  $SD = 2.66$ ), determination strategies ( $M = 10.38$ ,  $SD = 2.24$ ), and social consolidation strategies ( $M = 9.29$ ,  $SD = 2.74$ ).

Table 1

*Pre-Service Teacher Means on VLSs*

Types of VLSs	Pre-service Teachers	N	Mean	Std. Deviation
Cognitive Strategies	3	54	18.01	5.02
	2	34	16.20	5.26
Metacognitive Strategies	3	54	16.22	3.06
	2	34	17.02	3.27
Memory Strategies	3	54	14.11	3.50
	2	34	13.55	3.19
Social Discovery Strategies	3	54	13.14	3.09
	2	34	12.41	2.66
Determination Strategies	3	54	11.33	1.83
	2	34	10.38	2.24
Social Consolidation Strategies	3	54	9.94	2.66
	2	34	9.29	2.74

When examined in details, it is seen that both groups of pre-service teachers displayed a similar pattern to each other's in terms of the means of mostly preferred VLSs. In other words, when mostly preferred strategy categories are ranked from the highest to the lowest mean, both second and third year pre-service teachers showed similarity (see Table 1). As seen in Table 1, two mostly used strategies were cognitive and metacognitive strategies, and then both second-year and third-year pre-service teachers preferred using memory strategies, social discovery strategies, determination strategies, and social consolidation strategies, respectively.

Next, to answer the second research question to find out if there are any statistically significant differences between the two groups (second and third year pre-service teachers) based on different categories of VLSs, independent t-test results were examined. Levene's tests indicated that the assumption of homogeneity of variances was met for all the six categories of VLSs (see  $F$  and  $p$  values on Table 2). Therefore, the  $t$  statistics were examined. There was a statistically significant difference between the two groups (second and third year pre-service teachers) based on determination strategies,  $t(86) = 2.172$ ,  $p = .033$ . Third-year pre-service teachers had a higher mean ( $n = 54$ ,  $M = 11.33$ ,  $SD = 1.83$ ) than second-year pre-service teachers ( $n = 34$ ,  $M = 10.38$ ,  $SD = 2.24$ ). The 95% confidence interval for the difference between means was .08 and 1.82. Furthermore, even though third-year pre-service teachers had a higher mean ( $n = 54$ ,  $M = 18.01$ ,  $SD = 5.02$ ) than second-year pre-service teachers ( $n = 34$ ,  $M = 16.20$ ,  $SD = 5.26$ ) regarding cognitive strategies, this difference was not statistically significant,  $t(86) = 1.618$ ,  $p = .109$ . The 95% confidence interval for the difference between means was -.41 and 4.04. On the other hand,

when the difference between two groups of pre-service teachers was examined in terms of metacognitive strategies, it was found that there was also not a statistically significant difference between the two groups,  $t(86) = -1.173$ ,  $p = .244$ . However, in terms of metacognitive strategies, second-year pre-service teachers had a higher mean ( $n = 34$ ,  $M = 17.02$ ,  $SD = 3.27$ ) than third-year pre-service teachers ( $n = 54$ ,  $M = 16.22$ ,  $SD = 3.06$ ).

Table 2

*Independent t-test Results Based on VLS Categories*

Types of VLSs	<i>t</i>	df	Sig.
Determination Strategies	2.172	86	.033
	2.074	59.973	.042
Cognitive Strategies	1.618	86	.109
	1.601	67.867	.114
Metacognitive Strategies	-1.173	86	.244
	-1.155	66.829	.252
Memory Strategies	.745	86	.458
	.761	75.075	.449
Social Discovery Strategies	1.144	86	.256
	1.184	77.942	.240
Social Consolidation Strategies	1.101	86	.274
	1.094	68.707	.278

Next, there was not a statistically significant mean difference between the two groups of pre-service teachers in terms of memory strategies,  $t(86) = .745$ ,  $p = .458$ . Third-year pre-service teachers had a higher mean ( $n = 54$ ,  $M = 14.11$ ,  $SD = 3.50$ ) than second-year pre-service teachers ( $n = 34$ ,  $M = 13.55$ ,  $SD = 3.19$ ). In addition, regarding social discovery strategies, the difference between the two groups of pre-service teachers was not statistically significant,  $t(86) = 1.144$ ,  $p = .256$ . Third-year pre-service teachers had a higher mean ( $n = 54$ ,  $M = 13.14$ ,  $SD = 3.09$ ) than second-year pre-service teachers ( $n = 34$ ,  $M = 12.41$ ,  $SD = 2.66$ ). Lastly, there was not a statistically significant mean difference between the two groups of pre-service teachers in terms of social consolidation strategies,  $t(86) = 1.101$ ,  $p = .274$ . Third-year pre-service teachers had a higher mean ( $n = 54$ ,  $M = 9.94$ ,  $SD = 2.66$ ) than second-year pre-service teachers ( $n = 34$ ,  $M = 9.29$ ,  $SD = 2.74$ ).

Furthermore, to answer the third research question and learn which specific VLSs created statistically significant differences between the two groups (second and third year pre-service teachers), an independent t-test was conducted and the homogeneity of variances was checked before reporting any significant results. The two groups of pre-service teachers statistically significantly differed from each other in terms of only five specific strategies (i.e., asking teacher to put an unknown word into a sentence, practicing English in group-work activities, writing a new word in a sentence to remember it, writing a new word on a flash card to remember it, and memorizing a new word from English magazines) among the 25 strategies. There was a statistically significant difference between the two groups (second and third year pre-service teachers) in terms of asking teacher to put an unknown word into a sentence,  $t(86) = 2.396$ ,  $p = .019$ . Third-year pre-service teachers had a higher mean ( $n = 54$ ,  $M = 3.12$ ,  $SD = 1.11$ ) than second-year pre-service teachers ( $n =$

34,  $M = 2.52$ ,  $SD = 1.18$ ). The 95% confidence interval for the difference between means was .10 and 1.09.

In addition, there was a statistically significant difference between the two groups (second and third year pre-service teachers) in terms of practicing English in group-work activities,  $t(86) = 2.371$ ,  $p = .020$ . Third-year pre-service teachers had a higher mean ( $n = 54$ ,  $M = 3.66$ ,  $SD = 1.06$ ) than second-year pre-service teachers ( $n = 34$ ,  $M = 3.05$ ,  $SD = 1.32$ ). The 95% confidence interval for the difference between means was .09 and 1.11.

Regarding the strategy of writing a new word in a sentence to remember it, there was a statistically significant difference between the two groups (second and third year pre-service teachers),  $t(86) = 2.04$ ,  $p = .044$ . Third-year pre-service teachers had a higher mean ( $n = 54$ ,  $M = 3.59$ ,  $SD = 1.20$ ) than second-year pre-service teachers ( $n = 34$ ,  $M = 3.02$ ,  $SD = 1.33$ ). The 95% confidence interval for the difference between means was .01 and 1.11.

Moreover, there was also a statistically significant difference between the two groups (second and third year pre-service teachers) in terms of writing a new word on a flash card to remember it,  $t(86) = 2.161$ ,  $p = .033$ . Third-year pre-service teachers had a higher mean ( $n = 54$ ,  $M = 3.03$ ,  $SD = 1.28$ ) than second-year pre-service teachers ( $n = 34$ ,  $M = 2.41$ ,  $SD = 1.37$ ). The 95% confidence interval for the difference between means was .05 and 1.20.

Lastly, there was a statistically significant difference between the two groups (second and third year pre-service teachers) in terms of memorizing a new word from English magazines,  $t(86) = -2.745$ ,  $p = .007$ . Regarding this specific strategy, as opposed to the other strategies, third-year pre-service teachers had a lower mean ( $n = 54$ ,  $M = 3.03$ ,  $SD = 1.16$ ) than second-year pre-service teachers ( $n = 34$ ,  $M = 3.76$ ,  $SD = 1.28$ ). The 95% confidence interval for the difference between means was -1.25 and -.20.

## Qualitative Data Results

In order to answer the third research question, semi-structured interviews were carried out with 10 students in each group. The interviews were recorded and then transcribed to find emerging themes. These emerging themes were also categorized based on the participants' year in ELT education. The questions asked in the semi-structured interviews were as follows:

1. What kind of strategies did you use to learn vocabulary when you first started to learn English?
2. What kind of strategies do you use to learn vocabulary?
3. What kind of strategies will you use to teach vocabulary when you become a teacher?

### *Third Year Pre-service Teachers' Responses*

Thinking about their past experiences of learning vocabulary, seven students mentioned that they used to ask the teacher to translate the words into English when they first started to learn English but as they became proficient learners, they did not ask their teachers to translate. Instead, they looked at bilingual dictionaries or looked at the pictures to guess the meanings of new words. This indicates that their social discovery strategies

turned into determination strategies as they became proficient in their vocabulary knowledge. In addition, writing the new words in sentences and repeating the words loudly helped them immensely in learning new words in the past and when they read a text, they could guess the meaning from context easily. They stated that they mostly used memory strategies such as repeating the words, associating the words, using semantic maps, grouping words, and using synonyms or antonyms. Five of the students mentioned their teachers' request to make vocabulary cards. Some of their ideas were as follows:

*Repeating words aloud helped me to learn the words (Pre-Service Teacher 5)*

*I used to make word cards and I used to bring them wherever I went although I did not like this idea at first. (Pre-Service Teacher 4)*

*Learning words using semantic maps helped me when I first started to learn English. (Pre-Service Teacher t 7)*

In terms of the strategies they use, some of them stated that they liked writing new words in sentences or in context because they thought they could learn the words better. This also indicates that memory strategies were used in general. In addition, five of the students referred to metacognitive strategies they used. They mentioned that they generally listened to English songs and watched videos, TV series to learn new words. For example, they specifically stated:

*Writing sentences are good for me. I think the best way is learning from sentences. (Pre-Service Teacher 3)*

*If I use new words in sentences, I never forget. This strategy is good for studying and remembering new words. (Pre-Service Teacher 6)*

*I watch TV serials a lot so I learn new words. (Pre-Service Teacher 8)*

When they were asked about what kind of strategies they would use if they were teaching, most of them stated that they would use all the strategies according to their students' level. Specifically, they would choose the strategies based on their students' English proficiency level. This indicates that these pre-service teachers perceived the VLSs as a dynamic group of strategies that may change based on student levels. For instance, two students commented on this question as follows:

*I will try to use more Memory strategies with beginner level learners and more Cognitive and Metacognitive strategies with more advanced learners. (Pre-Service Teacher 8)*

*I will never want my students to write words 10 times. (Pre-Service Teacher 2)*

All in all, social discovery, memory, cognitive and metacognitive VLSs were the most common ones among the third-year pre-service teachers. As indicated in some pre-service teacher comments, they believed that these strategies may depend on their learners' levels or their own levels while learning EFL.

### *Second Year Pre-service Teachers' Responses*

Five 2<sup>nd</sup> year pre-service teachers thought about their past experiences of learning vocabulary and remembered preparing word cards and writing the words 10 times in their notebooks. They mostly used cognitive strategies. In addition, they asked the teacher to translate the words into English when they first started to learn English, which is one of the

social discovery VLSs. Furthermore, according to these five pre-service teachers, writing the new words in sentences and repeating the words loudly helped them learn new words faster. They stated that they mostly used memory strategies such as repeating the words, associating the words, using semantic maps, grouping words, and using synonyms or antonyms. Six of the students recalled their teachers' request to make vocabulary cards. Similar to the third-year students, they said that they did not like the idea first but it helped them a lot since they were carrying the cards with them everywhere. Some of their ideas were as follows:

*Word cards were portable so I could learn vocabulary everywhere and every time. (Pre-Service Teacher 10)*

*I always used this strategy when I didn't have word lists. I could carry them anywhere. (Pre-Service Teacher 5)*

*I hated writing the words 10 times. (Pre-Service Teacher 1)*

Furthermore, four students expressed that they preferred to use bilingual dictionaries more instead of opting for teacher's help to translate as they become more proficient in English. While this indicates the use of determination strategies, there were other instances referring to metacognitive strategies. For instance, two pre-service teachers indicated that they specifically tried to guess the meanings of the words from context, as they believed that this was more helpful than somebody else translating a word for them. Four students specifically stated that when they read a text, they could guess the meaning from context easily. For instance, two pre-service teachers commented as follows:

*I like using a bilingual dictionary instead of asking the teacher. (Pre-Service Teacher 4)*

*I like guessing the words from context and use different strategies to guess the unknown words. (Pre-Service Teacher 7)*

Regarding their future intentions as pre-service teachers, five participants indicated that when they became teachers, they would try to use all the strategies according to their students' level as in the case of third-year students. To illustrate, two students commented on this aspect as in the following excerpt:

*I will try to use more memory strategies with beginner level learners to make them aware of the strategies (Pre-Service Teacher 8)*

*I will try to include as many activities as possible into my teaching to teach beginner level learners (Pre-Service Teacher 3)*

Regarding 2<sup>nd</sup> year pre-service teachers' VLSs, cognitive, social discovery, memory, determination and metacognitive strategies were the most commonly used VLSs. The findings in the semi-structured interviews show that 2<sup>nd</sup> year students tend to use more strategies than the 3<sup>rd</sup> year peers. However, it is also observable that even though 2<sup>nd</sup> year pre-service teachers opt for more individualized strategies such as determination strategies while third year students made use of social discovery strategies more.

## DISCUSSION

In this study, the researchers investigated the mostly preferred VLS categories (Cognitive, Memory, Metacognitive, Determination and Social) by second and third year pre-service teachers in ELT programs at a state university in Turkey and also the differences and similarities between the second and third year pre-service teachers in terms of the specific VLSs they use and their perceptions in using these strategies. Regarding the main focus of this article, it can be stated that third-year pre-service teachers preferred using cognitive strategies to the other strategies, including metacognitive, memory, social discovery, determination and social consolidation strategies, whereas second-year pre-service teachers preferred using metacognitive strategies to other strategies including cognitive, memory, social discovery, determination and social consolidation strategies respectively.

Both groups of pre-service teachers displayed a similar pattern in terms of using cognitive and metacognitive strategies as mostly used VLSs. This view is in line with Schmitt's (1997) claim that there is evidence that more advanced learners tended to use more complex and meaning-focused strategies than less advanced learners. Therefore, third-year pre-service teachers' use of cognitive strategies more frequently than all other strategies can be attributed to third-year pre-service teachers' experience in handling with complex strategies such as cognitive VLS.

Furthermore, pre-service teachers in this study are advanced learners of English since they had entered ELT department by getting high scores from University Entrance Exam. Regarding the main VLS categories, there was only one significant difference between both groups of pre-service teachers in terms of using determination strategies that include using bilingual dictionaries, using pictures to guess the meaning of new words and analyzing the part of speech of the words. This is in line with Amirian and Heshmatifar's (2013) study in which they found determination strategies such as guessing from context and consulting a dictionary were the most popular strategies used by advanced level learners. Third-year pre-service teachers are more advanced in English than their second-year pre-service teacher peers. In this regard, Schmitt (2000) also stated that determination strategies were those used for discovering a new word's meaning without relying on other people. Thus, third-year pre-service teachers could be considered more autonomous compared to second-year pre-service teachers based on their proficiency in English and their experience in teaching or being one year ahead of the second-year peers.

Furthermore, regarding the specific strategies, the two groups of pre-service teachers differed from each other in terms of only five specific strategies (i.e., asking teacher to put an unknown word into a sentence, practicing English in group-work activities, writing a new word in a sentence to remember it, writing a new word on a flash card to remember it, and memorizing a new word from English magazines) among the 25 strategies. Third-year pre-service teachers had a higher mean than second-year pre-service teachers in terms of asking teacher to put an unknown word into a sentence. This may indicate that as the pre-service students gain experience in VLSs, they tend to worry less about finding the unknown or difficult words in a dictionary and opt for finding meanings of the unknown

words by socially interacting with peers and teachers. This result is also in parallel with the qualitative data findings.

In addition, in terms of practicing English words in group-work activities, third-year pre-service teachers had a higher mean than second-year pre-service teachers. This emphasizes the social VLSs and it aligns with the previous literature. As Newton (1995) stated group activities with discussions on the meanings of L2 words enhanced students' vocabulary competence and performance. This may also indicate that having been trained in VLSs for one more year than second-year students, third-year students seemed to work in groups to practice vocabulary more than the second-year students.

Furthermore, in terms of the strategy of writing a new word in a sentence to remember it, the two groups also differed and the more experienced third-year pre-service teachers used this cognitive strategy more. This result is in line with the outcome of the study of Hulstijn and Laufer (2001) that students remembered L2 words better when involved in tasks to use them productively or write them in sentences. Therefore, it can be stated that using the new word in sentences may help the learners' vocabulary competence. Moreover, the difference between the two groups (second and third year pre-service teachers) in terms of writing a new word on a flash card to remember it, may be attributed to the courses they took. For example, third-year pre-service teachers prepared more flash cards when they were involved in micro-teaching sessions and tried the effectiveness of them in teaching vocabulary compared to the second-year pre-service teachers.

On the other hand, in memorizing a new word from English magazines (i.e., one of the metacognitive VLSs), third-year pre-service teachers had a lower mean than second-year pre-service teachers. This may be due to the fact that second-year students may have had more time to read magazines for pleasure because of less course-load and low affective filter as a result of having one more year to graduate compared to third-year counterparts, and these may have allowed them to learn more vocabulary from magazines. There is also more evidence in literature that supports the connection between vocabulary learning process and metacognitive strategy use. The study of Sagarra and Alba (2006) revealed that Spanish FL students who used more metacognitive learning strategies improved significantly more than those who relied on rote repetition and other memorization techniques. Hulstijn and Laufer's (2001) study indicating that students remembered L2 words better when they were involved in tasks that led them use metacognitive strategies. In parallel with this, Peker, Regalla and Cox (2018, in press) also emphasized that teachers' instructional strategies play an important role in achieving the increase in vocabulary learning gains; the more the teacher exposed students to new words with multiple and meaningful repetitions by creating context for language learning, the greater the learning gains shown by students.

Furthermore, the current research indicated that there might be a relationship between using meta-communicative strategies and academic success. The most preferred strategy by the two groups was "listening to songs and news" and the least preferred one was making vocabulary cards. As Marin (2005) stated some proficient learners use more guessing from context and dictionary strategies than any other type. This view is also supported by Istifci (2009) who found out that more proficient learners guess the meaning from context more than low-proficient learners and they are eager to take risks. As Nassaji (2006) states



learners who possess a deeper lexical knowledge have better access to the knowledge sources, and hence, can construct a more accurate semantic representation of the unknown word when they guess the meaning of a word than learners who do not.

In terms of their perceptions of VLSs, the responses of the two groups seemed similar but 3<sup>rd</sup> year pre-service teachers were found to be more aware of VLSs. This may be due to the Methodology courses that mainly focused on teaching vocabulary since they had taken theoretical knowledge for six weeks and then they had prepared some activities for microteaching sessions in their classrooms.

## CONCLUSION AND IMPLICATIONS

This study examined VLSs of pre-service English language teachers in two different classes and levels. The results revealed statistically significant differences between the groups in the use of some specific strategies mentioned throughout the results and conclusion sections. As Coady & Huckin (1997) stated, teachers may have difficulty with concentrating on the instruction of other linguistic aspects and use of words while teaching vocabulary. In addition, the complex issues of teaching an organized syllabus of both grammar and vocabulary at the same time can be a challenge in second language vocabulary instruction. Thus, making pre-service teachers become aware of VLSs they use can prepare them better for their future profession as language teachers. This may make them to put themselves into their students' shoes and use the best practices in VLSs. By carrying out micro and macro teaching sessions, they can include VLSs in vocabulary instruction in order to reinforce learning.

Nation (2001) points out that there is enough evidence that explicit instruction of strategies can improve learners' strategic knowledge. Thus, strategy training leads to learner autonomy and helps learners to become aware of their own preferences and take on more responsibility for their own learning (Amirian & Heshmatifar, 2013). Pre-service teachers in this study can be trained on how to use VLSs so they can adjust their teaching accordingly. Vasu and Dhanavel's (2016) study emphasizes that it takes more than ten years for teachers to master a variety of VLSs to use in their vocabulary instruction. Vasu and Dhanavel (2016) also suggest that an early intervention is needed to help teachers understand the importance and use of VLSs in a successful vocabulary instruction. By the term "early intervention," they may have meant pre-service training or the early stages of their profession.

As Schmitt (2010) states development from breadth of lexical repertoire to depth of lexical repertoire is an incremental process and direct strategies on memorizing one word-one-meaning are not sufficient in addressing the issue of depth of vocabulary knowledge. Teachers should, therefore, incorporate instructions on how to help students make profitable use of indirect strategies to conduct deeper processing of words, which leads to acquisition of depth of vocabulary knowledge. In addition, teachers should encourage learners to use indirect metacognitive strategies, i.e., self-planning, self-monitoring, and self-evaluating, to manage or regulate their learning both inside and outside the classroom (Schmitt, 2010). Training should help shift the role from teachers to the learners because students need to take active responsibility for their own vocabulary learning (Nation, 2008).

The findings of this study also aligns with Benson's (2007) study that confirms the importance of raising and strengthening language teachers' strategy and language awareness in teacher development programs, which may help them make better use of pedagogic opportunities to empower their learners with the capacity and knowledge for taking control of their learning. Since students may find it difficult to improve their strategic competence and sometimes resist strategy training (Brown, 2002), it is, therefore, essential to help learners to become aware of their own styles, preferences and habits, for practicing their effective strategies, get them to practice good strategies, and take charge of their own learning.

It is important to mention some limitations of the study. First, the data were collected from the participants at only one state university; therefore, we cannot generalize our findings. Second, the study involved only second- and third-year pre-service English teachers. This also limits the generalizability. If the study had been conducted with first- or fourth-year pre-service teachers, the results may have indicated some other aspects regarding different VLSs. Future longitudinal studies can also be carried out with both pre-service and in-service teachers and their use of VLSs may be compared.

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## APPENDIX A

### The 25 Five-Point Likert-Scale Survey Items

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1. I use a bilingual dictionary to help me translate English words into Turkish language.
  2. I use pictures illustrated in the textbook to find the word meanings.
  3. I learn meaning of words by identifying its part of speech
  4. I ask the teacher to translate the words into English
  5. I ask the teacher to put an unknown word into sentence to help me understand the word meaning.
  6. I ask my classmate for meaning.
  7. I know some new words when working in group works
  8. I practice English in group work activities.
  9. I ask native speakers for help.
  10. I learn words about the culture of English speaking countries.
  11. I write a new word in a sentence so I can remember it.
  12. I study a spelling of new words.
  13. I use physical actions when learning words.
  14. I speak words out loud when studying.
  15. I repeatedly practice new words.
  16. I write a new word on a flash card so I can remember it
  17. I learn words by listening to vocabulary CDs.
  18. I record vocabulary from English soundtrack movies in my notebook.
  19. When I try to remember a word, I write or say it repeatedly.
  20. I make vocabulary cards and take them with me wherever I go.
  21. I listen to English songs and news.
  22. I memorize word from English magazines.
  23. I review my own English vocabulary cards for reviewing before the next lesson starts.
  24. I do not worry very much about the difficult words found when reading or listening, I pass them.
  25. I use on-line exercise to test my vocabulary knowledge.
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