



THE INTERCONNECTION BETWEEN VOCABULARY LEARNING STRATEGIES AND EFL LEARNING OUTCOMESⁱ

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Abstract:

This study aimed at investigating vocabulary learning strategies employed by Bosnian EFL elementary school learners attending the 6th, 7th, 8th and 9th grade and the effect of gender and grade level on the students' choice of vocabulary learning strategies. Furthermore, it attempted to explore the relationship between vocabulary learning strategy use and EFL learners' vocabulary knowledge as well as overall English knowledge. The results indicated that the participants are aware of vocabulary learning strategies and that they use them in their everyday learning. Gender showed no significant effect on the learners' preferences for different vocabulary learning strategies, i.e. memory, cognitive and compensation strategies, while grade level had a significant effect on the use of one subtype, namely compensation strategies. Standard multiple regression was conducted to determine whether vocabulary learning strategies predict learners' language achievement and vocabulary knowledge, and the results discovered that they significantly predict both. The study is expected to provide both language teachers and learners with some valuable suggestions with regard to a more effective use of vocabulary learning strategies among elementary school EFL learners.

ⁱ MEĐUSOBNA POVEZANOST STRATEGIJA UČENJA VOKABULARA I ISHODA UČENJA U ENGLJSKOM KAO STRANOM JEZIKU

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Sažetak:

Cilj ove studije je bio istražiti odnos strategija učenja vokabulara kod bosanskih učenika koji pohađaju 6., 7., 8. i 9. razred i utjecaj roda i razreda na njihov odabir strategija učenja. Nadalje, studija je pokušala istražiti odnos između upotrebe strategije učenja i znanja vokabulara u engleskom kao stranom jeziku, kao i ukupnog znanja učenika. Rezultati su pokazali da su učesnici u ovoj studiji svjesni strategija učenja vokabulara i da ih koriste u svakodnevnom učenju. Rod nije pokazao značajniji uticaj na odabir strategija učenja vokabulara od strane učenika, kao što su strategije pamćenja, kognitivne i kompenzacijske strategije, dok je razred koji pohađaju, imao značajan uticaj na upotrebu jednog podtipa strategija učenja vokabulara, odnosno strategija kompenzacije. Standardna višestruka regresija provedena je kako bi se utvrdilo da li strategije učenja vokabulara utiču na uspjeh učenika u školi i na njihovo znanje vokabulara, a rezultati su pokazali da značajno utiču I na jedno I na drugo. Rezultati ove studije mogli bi pružiti, kako nastavnicima engleskog kao stranog jezika tako i učenicima, dragocjene prijedloge u pogledu efikasnije upotrebe strategija učenja vokabulara među učenicima u osnovnim školama.

Ključne riječi: strategije učenja vokabulara, rod, razred, uspjeh učenika, znanje vokabulara

1. Introduction

In the overall process of acquiring a new language, vocabulary learning is considered to be of crucial importance since learners continue coming across new words throughout their entire life, even long after the completion of their academic studies (Susanto, 2017). However, it is also true that learning vocabulary is one of the most challenging aspects of acquiring any foreign language, and inadequate knowledge of vocabulary appears to be the source of problem for many students (Maftoon, Hamidi, & Sarem, 2012). Therefore, learners should be aware of vocabulary learning strategies (VLSs), believed to successfully contribute to vocabulary knowledge (Nassaji, 2003; Zhang & Lu, 2015) and thus, language learning as a whole, making learning not only more effective (Oxford & Crookall, 1989) but also faster, more enjoyable and more applicable (Oxford, 1990). Moreover, strategies are believed to contribute to developing more independent learners (Chamot, 2001; Oxford & Scarcella, 1994), ready for living in the contemporary world in which life-long learning appears highly necessary.

Learning strategies refer to specific ways of processing received information in order to improve understanding, learning and storage of information (Diyono, 2009). To cover a variety of strategies used to ease the learning process, scholars have devised various classifications, among which one of the most prominent is the Oxford's from 1990

dividing them into direct and indirect strategies. The former include memory strategies used to find a connection between new and previously learned words (Schmitt, 1997) such as: relating words to personal experience, making a mental image of the word, grouping words according to meaning, using rhyme to remember new words; cognitive strategies which encompass any mechanical process that learners use to analyze and process the material in order to master it, such as keeping a vocabulary notebook, writing new words several times, taking notes, learning words through songs, watching TV, English movies, series and documentaries; and compensation strategies used to compensate for the lack of knowledge such as guessing the meaning from the context, paraphrasing, reading in English without looking up every new word. On the other hand, the latter comprise metacognitive, affective and social strategies. Metacognitive strategies are used to monitor, plan and direct the learning process, some of which are learning from mistakes on a test, planning learning, learning through extracurricular activities, and self-initiated study. Affective strategies refer to the control over emotions or negative thoughts in order to continue studying and they include self-talk and self-encouragement. Finally, social strategies are explained as ways in which students cooperate or interact with other people in the learning process, such as asking for help of a teacher or peers and asking for clarification.

The current study investigates the use of the first group, i.e. direct learning strategies, in the Bosnian EFL context, where higher levels of English proficiency are seen as highly desirable and not rarely necessary for meeting the requirements of various job positions and academic pursuits (Dubravac & Skopljak, 2020; Skopljak & Dubravac, 2019). Thus, students attend English classes from the first, or latest from the third grade in elementary school, and then continue learning it throughout high school and university. Still, there are some indications (Dubravac, 2018; Kovačević, Brdarević Čeljo, & Bećirović, 2018) that they do not reach a remarkably high level of English proficiency. Raising awareness about the potential of learning strategy use might lead to better outcomes, as many studies have shown that better language learning success will be achieved if learners, and teachers as well, become more conscious of a variety of VLSs and the ways of using them properly (O'Malley & Chamot, 1990). Bearing this in mind, this study aimed at investigating the use of memory, cognitive and compensation strategies among Bosnian elementary school EFL learners, with the focus on the interconnection between the use of the aforementioned strategies, on the one hand, and vocabulary knowledge and overall English language achievement, on the other hand. Moreover, to provide a more detailed insight into the matter, the effect of two factors, namely gender and grade level, on the specific strategy use was taken into account. Since no similar previous studies have been conducted in this learning context, the research is expected to produce novel findings also contributing to the overall understating of the strategy use as a pathway to a more successful learning process.

2. Literature review

Generally, a plethora of studies conveyed in different EFL contexts worldwide (Hamzah, Kafipour, & Abdullah, 2009; Lee, 2007; Nacera, 2010; Şener, 2015; Tanyer & Öztürk, 2014) have revealed that learners who are more proficient use VLSs more effectively. It has been also found that more successful language learners use a greater variety of VLSs in a more organized way, being more aware of their usage (Ahmed, 1989; Barcroft, 2009; Fan, 2003; Gu, 2003; Gu & Johnson, 1996; Lawson & Hogben, 1998; O'Malley et al, 1985; Schmitt, 1997). In particular, it has been indicated that more successful language learners use cognitive and metacognitive strategies more often than those less successful ones (Halbach, 2000; Mochizuki, 1999; Rubin, 1975). On the other hand, it has been noticed that low achievers use compensation and memory strategies more frequently, but they rarely use cognitive, metacognitive, social and affective strategies (Boggu & Sundarsingh, 2014). However, generalizations seem hardly possible due to the studies presenting opposing results. For instance, the findings reported in the study by Bozgeyik and Tilfarlioglu (2012) conducted among 252 preparatory students from different proficiency groups (Upper-Intermediate, Intermediate, Pre-Intermediate and Beginner) at Gaziantep University Higher School of Foreign Languages in Turkey, revealed that participants used a wide range of VLSs, but that only memory strategies correlated positively with the participants' academic and general vocabulary proficiency levels. With reference to Porte (1988), poor learners were found to be demonstrating less active and sophisticated use of VLSs, although his small-scale study among 15 adolescent learners discovered that some of the VLSs employed by poor learners, such as noting down the translations of new words and looking up meanings of words in a dictionary, were similar to the ones usually associated with good learners. Samperio (2019) in his study on high and low achievers found out that both groups of the participants used similar strategies, but they differed in the time they spent to study, with high achievers also spending their learning time more effectively. Relying on their previous experience and practices they were able to monitor their own performance, while low achievers were not. Thus, when analyzing previous findings, it is important to take into consideration different individual and contextual factors (Sinanović & Bećirović, 2016) which might affect students' choice of strategies.

When it comes to gender, although there have been some studies (Lee, 2007; Shmais, 2003; Tsai & Chang, 2009; Wei, 2007; Zokae, Zaferanieh & Naseri, 2012) indicating no significant gender-based differences in terms of VLS as well as learning styles (Masić, Polz & Bećirović, 2020) use, the majority have shown that this is a significant variable affecting strategy use, with female learners being more frequent strategy users (Ehrman, 1990, Maera & Fitzpatrick, 2000; Oxford & Nyikos, 1989). Oxford et al. (1996) also found that women were more willing to try new strategies and they used more memory, cognitive, affective and social strategies. This was confirmed by Oxford, Park-Oh, Ito, and Sumrall (1993) who examined gender differences among high school learners studying Japanese. On the contrary, compensation, memory and metacognitive

strategies did not show any significant variation by gender. Slightly different results were reached by Catalan (2003), Green and Oxford (1995), Stoffer (1995) and Kaylani (1996), who while also indicating the dominance of females in terms of strategy use, showed that the variation existed in the use of other strategies. Thus, Catalan (2003) concluded that ten most and least frequently used VLSs were shared by the male and female Spanish-speaking students learning Basque and English, but that there was a higher usage of memory, cognitive, metacognitive and social strategies by the females (p. 65). Including students at three different course levels at the University of Puerto Rico, Green and Oxford (1995), showed that the female learners used memory, affective, metacognitive and social strategies more often when compared to the males. Finally, exploring the impact of gender on the FL learners' use of VLSs among students from the University of Alabama, and among high school students in Jordan, Stoffer (1995) and Kaylani (1996), respectfully, reported gender-based differences. Stoffer's (1995) findings showed that the women surpassed the men in terms of memory strategy use, mental linkages and organizing words, while the female participants in Kaylani's study reported a more frequent use of memory, cognitive, compensation and affective strategies.

With regard to the relationship between VLS use and learners' age, a great number of studies (Al-Natour, 2012; Chesterfield & Chesterfield, 1985; Jafari & Kafipur, 2013; Safian, Malakar & Kalajhi, 2014; Schmitt, 1997; Park, 2001; Psaltou-Joycey, 2014; Psaltou & Kantaridou, 2009; Yilmaz, 2010) have discovered that young students use more basic strategies often related to the receptive skills, whereas more mature learners employ more complex strategies requiring interaction or reflection on one's learning. In 2014, Chen conducted a study with the purpose to investigate language learning strategies used by EFL learners at different educational levels. Out of the total of 1 023 students, there were 250 elementary school students (aged 10-12), 245 junior high school students (aged 13-15), 249 senior high school students (aged 16-18), and 279 tertiary education students (aged 20-22). The results of Chen's study also suggested that there is a meaningful relationship between age and the use of memory, compensation, metacognitive and affective strategies, with younger learners (in this case elementary school students) using memory strategies more frequently, and high school and tertiary education students using compensation strategies more often than elementary school students. The tertiary education students were the most frequent users of social and affective strategies. Older age groups were involved in the study by Tsai and Chang (2009) who investigated community university students' English VLSs among 20 to 60-year-old students. The first group investigated was a 20-30-year-old group, and the results showed that they frequently used social and metacognitive strategies, then a 31-40-year-old group who mostly used cognitive strategies, a 41-50-year-old group preferred determination and memory strategies, and when it comes to the last, a 51-60-year-old group, they were the most frequent users of metacognitive strategies. Based on the results of this study younger learners tend to use more interactive and social VLSs, and only use few of traditional ones. On the other hand, older learners, especially 51-60-year-old learners, use traditional ways of learning, while middle-aged students prefer

memory strategies as well as their own methods of exploring word meaning. However, there are studies (Bristi, 2015; Bush, 2014; Izura & Ellis, 2002; Sadeghi & Attar, 2013; Schwartz & Katzir, 2012) whose results showed that age actually did not have an important impact on the use of VLSs among different age groups, indicating the complexity of the impact of learner characteristics on the process of language learning.

With regard to vocabulary acquisition and VLS use in the context of the neighboring region, very important studies on vocabulary acquisition and VLSs have been conducted by Pavičić Takač (1999, 2000, 2008). In 2000, Pavičić Takač created a vocabulary learning strategy questionnaire conducted among 177 elementary school, high school and university level EFL students. The results discovered that the learners most often employed strategies which involve using the media, then the strategy of using new word, translation into Croatian and reviewing the words before the test. Moreover, the learners reported that they never used strategies of associating words with pictures, acting them out and they rarely wrote the new words down, since these strategies were considered to be childish, especially among older learners. Similarly, Pavičić Takač and Umiljanović (2008) investigated the relationship between vocabulary knowledge and VLSs in the research conveyed among 165 eighth grade EFL elementary school learners in five schools in Croatia. The results showed that the strategies of spontaneous (incidental) learning had the greatest positive effect on vocabulary size, whereas, negative correlation between strategies of formal vocabulary learning and vocabulary size were discovered. Another study investigating VLSs was conducted in Croatia among medical students by Rogulj and Čizmić (2018). They explored the relationship between VLS subscales and different types of vocabulary knowledge, as well as the difference in strategy use between male and female students and between low, middle, and high scoring students. The findings indicated that medical students pursued a variety of VLSs, preferring the category of self-initiated vocabulary learning. Furthermore, the findings revealed significant differences based on gender, while no statistically significant variations were noticed based on the proficiency level. Another significant study is the one by Božinović and Sindik (2010) who explored gender difference in the use of learning strategies among 181 students at the American College of Management and Technology in Dubrovnik, Croatia. The results showed statistically significant differences in the frequency of using certain strategies, namely memory strategies were the most frequently used and cognitive strategies the least frequently used. Regarding gender differences, it was discovered that the females used almost all the types more often than the males. Nikolovska (2006) conveyed a case study on vocabulary learning among EFL learners in the Republic of Macedonia. This study was a part of a large-scale study involving 709 EFL learners from ten elementary schools, ten high schools, as well as five faculties, and it aimed at investigating the relationship between the use of vocabulary learning strategies of Macedonian EFL learners and age, gender, and proficiency, as well as the influence of vocabulary teaching strategies on the choice of vocabulary learning strategies. The findings revealed similarities in the ten most and least frequently used VLSs by the male and female learners, although the overall findings showed the females'

dominance in the use of all strategies. When it comes to the Bosnian EFL context, no study to our knowledge has dealt with the analysis of VLSs in relation to age, gender and overall language achievement as well as vocabulary knowledge, although some studies have indicated that these independent variables play a significant role in the other aspects of acquiring English in this learning context (Bećirović, 2017; Bećirović, Dubravac & Brdarević Čeljo, 2018; Latić & Brdarević Čeljo, 2018).

Thus, further research investigating the relationship between VLSs and above-mentioned factors needs to be done among Bosnian EFL learners. Bearing in mind Schmitt's (1997) statement that it is more important to know what strategies learners are already using than to decide what strategies they should use; this study will provide a deeper insight into this issue in a rather unexplored learning context testing the following hypotheses:

H1: There is a statistically significant effect of gender on the students' use of vocabulary learning strategies.

H2: There is a statistically significant effect of grade level on the students' use of vocabulary learning strategies.

H3: There is a significant relationship between vocabulary learning strategies and the students' language achievement

H4: There is a significant relationship between vocabulary learning strategies and the level of vocabulary knowledge.

3. Methodology

3.1. Participants

The research sample consisted of 174 elementary school students in Sarajevo, Bosnia and Herzegovina. In order to gather data, the convenient sampling method was employed. The participants voluntarily completed the questionnaire. There were 93 (53.4%) female participants and 81 (46.5%) male participants. The participants were selected based on their grade level, so 42 sixth grade, (24.14%), 41 (23.56%) seventh grade, 47 (27.01%) eighth grade, and 44 (25.29%) ninth grade students took part in the research. The age of the students ranged from 11 to 15. A detailed overview of the research sample is presented in Table 1.

Table 1: Demographic data of the participants

		Number	Percent %
School	Elementary school	174	100.00
Gender	Female	93	53.45
	Male	81	46.55
Grade levels	Sixth grade	42	24.14
	Seventh grade	41	23.56
	Eighth grade	47	27.01
	Ninth grade	44	25.29
	Total	174	100.00

3.2. Instrument and procedure

In addition to a general demographic survey, the instrument utilized to collect the data was a questionnaire updated by Kozeta Hyso and Elida Tabaku (2011) but originally developed and validated by Oxford (1990). The questionnaire consisted of 30 statements related to the students' approach to vocabulary learning. The students were asked to rate each strategy statement on a 4-point Likert scale (e.g. I never use this strategy, I rarely use this strategy, I always use this strategy, I almost always use this strategy). The instrument included three subscales of vocabulary learning strategies, namely memory strategies (e.g. I use new English words in a sentence so I can remember them), cognitive strategies (e.g. I try to learn new words by repeating it out loud several times) and compensation strategies (e.g. I read English without looking up every new word). The Cronbach's Alpha reliability analysis for 30 items of the questionnaire divided into three subcategories showed an acceptable level of reliability, namely memory VLSs $\alpha=.59$, cognitive VLSs $\alpha=.76$, and compensation VLSs $\alpha=.63$. The students' vocabulary knowledge was assessed by the tests accompanying the textbooks they used. These tests comprised the tasks of matching two parts of an expression (a word and its definition or a word and a suitable illustration), multiple choice tasks and completing the sentences with one of the listed words. All tests had in total 50 points. In order to get an insight into students' overall language achievement their last average English grade (ranging from 1 to 5) was taken into consideration.

Before the questionnaire was distributed to the students, an informed consent from the school's administration and participants themselves was obtained. The students were guaranteed anonymity, confidentiality, and their participation in the study was completely voluntary. To ensure that all the students understood the items, the questionnaire was translated into Bosnian. The participants were given all the necessary information from the researcher on how to fulfill the questionnaire. They were also ensured that their responses would not affect their grades. At the very beginning, the participants were asked to read each statement carefully and to complete the questionnaire as honestly as possible, since there were no right or wrong answers. The participants needed approximately 20 to 25 minutes to complete the survey.

3.3. Data analysis

The data collected from the participants were examined through Statistical Package for Social Sciences (SPSS), version 23.0. Descriptive statistics in terms of means and standard deviation were performed. The reliability analysis was performed by Cronbach's Alpha. A one-way MANOVA was used to determine the effect of gender and grade level differences on the students' VLS preferences. A standard multiple regression analysis was conducted to examine the relationship between VLS and students' achievement and vocabulary knowledge.

4. Results

4.1. Descriptive results

The results presented in Table 2 show that the seventh-grade students achieved the highest mean score ($M = 4.41$, $SD = .83$) when it comes to the language achievement, and the ninth graders the lowest mean score ($M = 3.86$, $SD = .95$). However, the eighth graders achieved the highest mean score ($M = 37.57$, $SD = 11.03$) in terms of vocabulary knowledge, followed by the seventh graders ($M = 36.65$, $SD = 12.80$), then by the ninth graders ($M = 36.00$, $SD = 12.59$), and in the end by the sixth graders ($M = 34.85$, $SD = 10.45$). The findings related to the overall use of vocabulary learning strategies reveal that the ninth-grade students obtained the highest score ($M = 2.73$, $SD = .45$), and the lowest score was that of the seventh graders ($M = 2.57$, $SD = .52$).

Table 2: Descriptive results based on grade level

	Total			6 th grade			7 th grade			8 th grade			9 th grade		
	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD
Language achievement	173	4.15	.91	41	4.32	.85	41	4.41	.83	47	4.04	.93	44	3.86	.95
Vocabulary knowledge	173	36.31	11.69	41	34.85	10.45	41	36.65	12.80	47	37.57	11.03	44	36.00	12.59
Vocabulary strategies total	173	2.68	.42	41	2.70	.35	41	2.57	.52	47	2.71	.34	44	2.73	.45

Descriptive results based on gender indicate that when it comes to language achievement the females achieved a higher mean score ($M = 4.17$, $SD = .94$) than the males ($M = 4.14$, $SD = .89$), although the difference was not substantial. There was also a slight difference in the mean scores for vocabulary knowledge between the females ($M = 38.80$, $SD = 12.24$) and the males ($M = 35.86$, $SD = 11.06$). However, when it comes to the overall use of VLSs, the mean scores for the females ($M = 2.68$, $SD = .38$) and for the males ($M = 2.68$, $SD = .46$) were the same.

Table 3: Descriptive results based on gender

	Total			Female			Male		
	N	M	SD	N	M	SD	N	M	SD
Language achievement	174	4.16	.91	93	4.17	.94	81	4.14	.89
Vocabulary knowledge	174	36.36	11.68	93	36.80	12.24	81	35.86	11.06
Vocabulary strategies total	174	2.68	.42	93	2.68	.38	81	2.68	.46

Referring to the relationship between overall results for VLS and its three subscales, namely memory, cognitive and compensation strategies, the results showed that they were all significantly positively correlated (Table 4). Thus, a strong positive relationship was found between overall VLS use and cognitive ($r = .91$, $p < .001$), memory ($r = .80$, $p <$

.001) and compensation strategies ($r = .76, p < .001$). If we compare the relationship between VLS subscales, the strongest positive and significant relationship was found between cognitive and memory strategies ($r = .67, p < .001$), followed by the relationship between compensation and cognitive strategies ($r = .50, p < .001$), and finally between compensation and memory strategies ($r = .45, p < .001$).

Table 4: Correlation analyses

		N	M	SD	1	2	3	4
1.	Memory strategies	174	2.76	.55	1	.64**	.45**	.80**
2.	Cognitive strategies	174	2.75	.47	.67**	1	.49**	.91**
3.	Compensation strategies	174	2.51	.52	.45**	.49**	1	.76**
4.	Vocabulary strategies total	174	2.68	.42	.80**	.91**	.76**	1

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

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

4.2. Gender based differences

A one-way multivariate analysis of variance (MANOVA) was conducted to determine the students' preferences towards VLSs based on gender. The MANOVA results revealed that there was no significant difference in the combined dependent variables of VLS preferences, Wilk's Lambda $\lambda = 1.000, F(3, 170) = .004^b, p = 1.000, \text{partial } \eta^2 = .000$. Furthermore, the analysis of variance on each of the VLS subcategories showed that there were no significant differences based on gender in the use of memory strategies $F(1, 172) = .000, p = .982, \text{partial } \eta^2 = .000$; cognitive strategies $F(1, 172) = .003, p = .955, \text{partial } \eta^2 = .000$; compensation strategies $F(1, 172) = .011, p = .918, \text{partial } \eta^2 = .000$.

The overall results presented in Table 5 show that the elementary school female students as well as male students generally preferred memory vocabulary learning strategies ($M = 2.76, SD = .54$). The findings also show that the least employed strategies, both for the female and male students, were compensation strategies ($M = 2.51, SD = .52$). When specific vocabulary learning strategy subcategories were analyzed, the results revealed that for memory strategies the females scored $M = 2.76, SD = .49$, while the males' score was $M = 2.76, SD = .61$; for cognitive strategies the females' score was $M = 2.75, SD = .44$ and the males' $M = 2.75, SD = .49$; while for the compensation strategies the mean scored by the females was $M = 2.52, SD = .47$ and by the males $M = 2.52, SD = .56$.

Table 5: Adjusted and unadjusted means for memory, cognitive and compensation vocabulary learning strategies based on gender

	Memory		Cognitive		Compensation	
	Adj.M	Und.M	Adj. M	Und.M.	Adj. M	Und.M
Male	2.76	2.76	2.75	2.75	2.52	2.52
Female	2.76	2.76	2.75	2.75	2.52	2.51

4.2. Grade level-based differences

A one-way MANOVA was conducted to determine the students' preferences towards VLSs based on grade level. The outcomes (Table 6) of the MANOVA showed that grade

level had no significant effect on the combined dependent variables, Wilk's Lambda $\lambda = 0.915$, $F(9, 406.58) = 1.688$, $p = .090$, partial $\eta^2 = .029$. The analysis of variance on each dependent variable showed that grade level had no significant influence on the overall memory strategy preferences $F(3, 169) = 1.289$, $p = .280$, $\eta^2 = .022$ and cognitive strategies $F(3, 169) = .643$, $p = .588$, $\eta^2 = .011$. Still, there was a significant effect of grade level on compensation VLSs, $F(3, 169) = 2.833$, $p = .040$, $\eta^2 = .048$.

As the results in Table 6 indicate, the means for grade level were the lowest for compensation strategies, ranging from ($M = 2.37$, $SD = .55$) among the seventh-grade students to ($M = 2.68$, $SD = .54$) among the ninth-grade students. In general, for all four grade levels the highest scores were noticed for memory strategies being in the range from ($M = 2.62$, $SD = .67$) among the seventh graders to ($M = 2.83$, $SD = .43$) among the eighth graders. The mean score for memory strategies among the sixth graders was ($M = 2.77$, $SD = .55$), and the mean score for memory strategy among the ninth graders was ($M = 2.81$, $SD = .52$). When it comes to the students' preferences related to cognitive strategies, the following results were obtained: the sixth graders ($M = 2.76$, $SD = .38$); the seventh graders ($M = 2.68$, $SD = .54$); the eighth graders ($M = 2.82$, $SD = .38$); and the ninth graders ($M = 2.73$, $SD = .55$). According to the overall scores, it is noticeable that the students' most preferred vocabulary learning strategy subclass, based on their grade level, are memory strategies ($M = 2.76$, $SD = .55$), followed by cognitive strategies ($M = 2.75$, $SD = .47$), with slight differences among the groups based on the grade level. However, the overall mean score for the compensation strategies, ($M = 2.51$, $SD = .52$) show that they were least preferred among all grade levels. The results in the table show that the seventh-grade students reported lower preferences for all the three vocabulary learning strategy subclasses.

Table 6: Means and standard deviation for vocabulary learning strategies based on grade level

	6 th grade		7 th grade		8 th grade		9 th grade	
	M	SD	M	SD	M	SD	M	SD
Memory strategies	2.77	.55	2.62	.67	2.81	.52	.280	.022
Cognitive strategies	2.76	.38	2.68	.54	2.73	.55	.588	.011
Compensation strategies	2.54	.44	2.37	.48	2.68	.54	.040	.048

4.3. VLSs as language achievement and vocabulary knowledge predictors

A standard multiple regression analysis was conducted to determine the accuracy of vocabulary learning strategies, namely memory, cognitive and compensation strategies in predicting students' achievement in learning English as a foreign language. The regression results indicated that vocabulary learning strategies significantly predicted language achievement in learning English as a foreign language $R^2 = .112$, $R^2_{adj} = .096$, $F(3, 170) = 7.121$, $p < .001$. This model accounted for 33.4% of the variance in learners' achievement. Moreover, a summary of regression coefficients presented in Table 7 further indicates that cognitive ($\beta = .411$) and compensation ($\beta = -.276$) vocabulary strategies significantly contributed to the learners' language achievement, whereas memory strategies ($\beta = -.137$) did not significantly predict the learners' language

achievement. Furthermore, the results showed tendency for memory and compensation strategies to be negatively associated and for cognitive strategies to be positively associated with the learners' language achievement.

Table 7: Regression coefficients of vocabulary learning strategies on language achievement

	B	β	T	P	Bivariate r	Partial r
Memory strategies	-.228	-.137	-1.376	.171	.014	-.105
Cognitive strategies	.798	.411	4.038	.000	.183	.296
Compensation strategies	-.485	-.276	-3.272	.001	-.138	-.243

Standard multiple regression was also conducted to determine the accuracy of vocabulary learning strategies in predicting learners' English vocabulary knowledge. The regression results indicated that vocabulary learning strategies significantly predicted vocabulary knowledge in learning English as a foreign language $R^2 = .077$, $R^2_{adj.} = .061$, $F(3,170) = 4.720$, $p = .003$. This model accounted for 22.7% of the variance. Moreover, a summary of regression coefficients presented in Table 8 further indicates that cognitive ($\beta = .411$) and compensation vocabulary strategies ($\beta = -.276$) significantly contributed to the learners' vocabulary knowledge, whereas memory strategies ($\beta = -.137$) did not significantly predict the learners' vocabulary knowledge. According to the results displayed in Table 8 we can conclude that cognitive and compensation strategies are significant predictors of learners' vocabulary knowledge, although cognitive strategies have positive and compensation strategies negative association with the learners' vocabulary knowledge. On the other hand, memory strategies are not significant predictors of learners' vocabulary knowledge and they also have negative association with the learners' vocabulary knowledge.

Table 8: Regression coefficients of vocabulary learning strategies on vocabulary knowledge

	B	β	T	P	Bivariate r	Partial r
Memory strategies	-.280	-.013	-.130	.897	.046	-.010
Cognitive strategies	6.822	.275	2.651	.000	.183	.296
Compensation strategies	-6.485	-.278	-3.230	.001	-.150	-.240

5. Discussion

5.1. Descriptive results

The descriptive results showed that Bosnian students in elementary school have relatively high average English grades, which might be assigned to the considerable English language input students in Bosnia and Herzegovina receive not only in classrooms but also outside them (Bećirović & Akbarov, 2015; Bećirović, 2017; Dubravac & Milak, 2016; Dubravac, Brdarević Čeljo, & Bećirović, 2018). However, their knowledge as demonstrated on the corresponding vocabulary tests was lower. This might be another indication suggesting that the focus in our schools is still on grammar and not so much on vocabulary (Dubravac, 2018; Habibić & Dubravac, 2016; Tankosić & Dubravac, 2016).

One way to change that is through the application of suitable VLSs which might help learners acquire vocabulary more easily and effectively in both formal and nonformal forms of education. The mean score of 2.68 out of 4 clearly suggests that there is much space for improvement.

Regarding students' preferences, the most frequently employed were memory strategies, followed by cognitive, while the least preferred were compensation strategies, which is in line with the results reported in a few other studies involving EFL learners (e.g. Izadpana & Ghafournia, 2016; Marefat & Ahmadi, 2003). Such results might be probably assigned to the fact that the first two types help students recall vocabulary better. Another explanation could be found in Oxford's study (1990), according to which memory strategies have been with us for such a long time, so that students are more accustomed to employing them since they know how they work and how they can benefit from them. Students might also believe that memorization of vocabulary will help them in their learning process, especially while doing different vocabulary tests; in order to pass them they believe they need to know a significant number of words. On the contrary, compensation strategies are communication strategies used by learners to compensate for limitations in their language, which due to apprehension while communicating, anxiety and shyness younger students tend to avoid. This changes as students grow older and when students gain more confidence and become more independent. Therefore, older students are more capable of encountering and coping with uncertainty and they are more capable of using compensation strategies to overcome it (Al-Natour, 2012; Platsidou, 2014; Psaltou-Joycey & Kantaridou, 2009; Yilmaz, 2010). Besides, the use of compensation strategies is not frequently instructed and encouraged, especially in elementary schools (Platsidou, 2014). This is confirmed by Chen's study (2014) who showed that among elementary school students the most preferred are memory strategies, whereas among high and university level students compensation strategies occupy that place.

5.2. Gender-based differences

Referring to gender, the examination of the mean values showed that both the female and male participants had a very close ratings on their preferences for all three subcategories of VLSs, which is contrary to numerous other studies showing the females' supremacy in terms of VLS use (Božinović & Sindik, 2010; Catalan, 2003; Ehrman, 1990; Gu, 1993; Green & Oxford, 1995; Kaylani, 1996; Nikolovska, 2006; Oxford & Nyikos, 1989; Oxford, Park-Oh & Sumrall, 1993; Stoffer, 1995). Thus, as the study did not find that gender had a significant effect on the use of vocabulary strategies, the first hypothesis was refuted. These results are in line with those reported in the research by Rogulj and Čizmić (2018), Lee (2007), Wei (2007), Shmais (2003), and by Zokae, Zaferanieh and Naseri (2012), who also found no significant gender-based differences in VLS choices. Such current study findings might be due to the fact that the participants were younger students sharing similar language learning experience, attending the same school, being at the same or similar developmental level, and coming from the same social background (Bećirović,

2012; Doro & Habok, 2013). Furthermore, it might be that they still have not found any particular strategies for them and that is why they seek an easier path and are more comfortable relying on their teachers (ThaoTran & GiThaoTran, 2018).

5.3. Grade-based differences

The second hypothesis suggested that there is a statistically significant main effect of grade level on the choice of vocabulary learning strategies. The outcomes of the study showed that grade level had no significant impact on the overall VLS preference by elementary school students. Thus, the results indicated that students at different grade levels actually make slight changes in the use of VLSs. These findings are in line with the study reported by Rogulj and Čizmić (2018) involving Croatian students, Nousin Laila Bristi (2015) who explored VLSs among Bangladeshi undergraduate EFL learners, as well as with those presented by Izura and Ellis (2002), Schwartz and Katzir (2012) who concluded that the order in which words are learned, and the frequency with which words are reinforced seem to have more impact than the age of the learners. Another study concerning age and the use of VLSs was done by Bush (2014) among Turkish elementary students (8 and 12 years old). Although the sample size was small, the results of the study suggested that the age at the beginning of acquiring vocabulary has no impact in a significant way and the findings showed that the two groups performed almost identically. This might lead us to the conclusion that with younger students' educational environment is a more important factor, which is further supported by Sadeghi and Attar (2013) who reached the same conclusion investigating Iranian EFL learners who began learning English at different ages. The authors stated that young learners are influenced by their teachers' advice and explicit teaching, while older learners are more autonomous and have different goals, being oriented towards passing exams and entering universities.

Even though the results revealed that grade level had no significant impact on the students' choice of VLSs, some variations could still be found. More specifically, a one-way MANOVA analysis revealed that grade level had no significant influence on the overall memory and cognitive vocabulary strategy preference, however, there was a significant effect of grade level on compensation VLSs, being the most often used among the oldest group, i.e. the ninth graders. In fact, two older groups, the eighth and the ninth graders showed higher means for both cognitive and memory strategies than the younger groups, confirming that the older students get the more aware of VLSs and their benefits they become (Jafari & Kafipur, 2013; Safian, Malaka & Kalajahi, 2014; Schmitt, 2001). The differences might have been even more conspicuous if a broader age span had been taken into account.

5.4. VLSs as language achievement and vocabulary knowledge predictors

The third hypothesis stated that there is a significant relationship between vocabulary learning strategies and students' language achievement. On the whole, the results revealed that VLSs significantly predicted the language achievement. This implies that

students who use more vocabulary learning strategies and who are more aware of them are likely to achieve better results in language learning. These findings are aligned with previous research showing that successful language learners are distinguished from unsuccessful ones due to the variety of strategies they use in particular situations (Ahmed, 1989; Barcroft, 2009; Fan, 2003; Gu & Johnson 1996, Lawson & Hogben, 1998; Memiş, 2018; O'Melley et al. 1985; Schmitt, 1997; Waldvogel, 2013, Yaman & Bećirović, 2016), and they suggest that the active use of strategies is one of the strongest positive predictors of students' high proficiency and successful performance (Green & Oxford, 1995).

When taking in consideration VLS subcategories, the findings of the present study indicated that there is a significant negative correlation between compensation VLSs and students' language achievement, and a significant positive correlation between cognitive VLSs and the students' language achievement. These results are in line with studies indicating that more successful language learners use cognitive and metacognitive strategies more often than those less successful ones (Halbach, 2000; Mochizuki, 1999). The reason why better learners prefer cognitive strategies is the fact that they are used to them, teachers often ask them to write down new words several times, to analyze the material learned, while everyday exposure to English encourages learning through the media, songs, movies and documentaries. In fact, Pavičić Takač (2000) also suggested that learners most often refer to the strategies involving the use of the media. On the other hand, a negative correlation between compensation VLSs and language achievement suggests that the more students know the less they tend to refer to compensation mechanisms, as they do not need them often. Surprisingly, no significant relationship was found between memory strategies and overall language achievement. Thus, strategies such as relating new words to previous experience, making mental image of the word, grouping words according to meaning and using rhyme to remember new words showed no significant association with the language learning success. This might be due to the fact that learners need training to use these mechanisms successfully, which they might not get in schools. Moreover, some of these strategies might be disregarded by good learners who consider them rather childish (Pavičić Takač, 2000).

The fourth hypothesis stating that there is a statistically significant relationship between VLSs and students' EFL vocabulary knowledge was also supported. Referring to the overall results of the study, VLSs significantly predicted students' vocabulary knowledge. Thus, the results support Ediger's (1999) idea that learners' vocabulary knowledge should be a major goal in each academic discipline as well as Noor and Amir's suggestion (2009) that purposeful learning in vocabulary development, including the use of a variety of VLSs, means that students will have reasons to achieve good vocabulary knowledge. However, similarly to the relationship between VLS use and overall language achievement, a summary of regression coefficient indicates that cognitive and compensation vocabulary strategies are significant predictors of learners' vocabulary knowledge, with cognitive strategies having positive association with vocabulary knowledge, and compensation strategies showing negative association with learners'

vocabulary knowledge. In line with these results are the results by Netami et al.'s (2011) study among more advanced EFL students. The results discovered that the relationship between strategy use and vocabulary knowledge was not only insignificant but also negative. With reference to Pavičić Takač and Umiljanović (2008), the strategies of spontaneous (incidental) learning have the significant positive effect on vocabulary size and learners should be encouraged to use them more, while on the other hand formal vocabulary learning strategies have negative correlation with vocabulary size and they should be compensated with another strategies.

These findings clearly show that teachers play a significant role when it comes to leading students in the right direction during their course of acquiring the target language. Although it is evident that students use VLSs, they might use them more wisely and effectively. Students tend to use memory and cognitive strategies more probably because that is what teachers are used to practice in their classrooms and consequently students are more comfortable in using them. Therefore, it is up to teachers to make students more aware of a diversity of VLSs because a combination of those strategies will more likely lead to successful outcomes. Moreover, language learning programs should be revised to promote teaching of VLS use across all language levels. It is believed that the awareness of students' individual differences in learning can help EFL educators and educational system as a whole to become more sensitive to their roles in teaching and learning. However, students should take a more active role in using VLSs in order to have better results and they should also try to use different VLSs, i.e. to be able to make decision what VLSs suite their learning best. Therefore, they would be provided with the opportunity to use those strategies while learning in classrooms and outside them.

The study is expected to motivate other researches to conduct similar enquiries in this and similar learning contexts. Although the number of the participants in this study was considerable, a greater number would have probably given us a better insight in the matter investigated. Furthermore, the study was conducted only among elementary school students. If the study had been also conducted among high school students, the results could have been compared with those of elementary students and might have been more representative. Besides, it would be preferable if some other factors such as motivation, social background, students' and teachers attitudes etc. towards VLSs, had been considered in order to get more complete understanding of the investigated concepts. Moreover, future studies might employ a qualitative data analysis as well, in order to get more accurate results and provide better insights into VLSs and their effectiveness in obtaining better language outcomes.

6. Conclusion

The present study investigated vocabulary learning strategies used by Bosnian elementary EFL learners. First of all, the study examined if there is any significant difference between male and female learners in terms of their choice of vocabulary learning strategies. The results of the study did not reveal any significant difference in

VLS preferences between the male and female learners. Both groups of learners generally preferred memory vocabulary strategies. The least favorable for both males and females were compensation strategies. The results also showed that grade level has no significant effect on the learners' preferences for VLSs. In general, for all four grade levels the highest scores were noticed for memory strategies. In addition, the results revealed that vocabulary learning strategies are seen as significant predictors of learners' language achievement and vocabulary knowledge.

What we should bear in mind is the fact that one's vocabulary learning is personal and not all strategies are suitable for all learners in the same way, and only independent and responsible learners can use VLSs effectively. Teachers play a crucial role in the process of shaping independent and successful learners and thus implications are that it is critical for teachers to be more aware of the differences among their students and adjust their teaching practices to meet the needs of students.

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