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VOCABULARY LEARNING STRATEGIES OF ITALIAN-TURKISH BILINGUAL STUDENTS: IMPACT OF SIMULTANEOUS AND SEQUENTIAL ACQUISITION

Summary. Vocabulary learning strategy domain has been one of the areas of research in the language learning strategy field. Bilinguals use different language and vocabulary learning strategies than monolinguals (Hong-Nam & Leavell, 2007; Jessner, 1999). Even though there are numerous studies that investigate and compare monolingual, bilingual, and multilingual language learning strategy use, no studies have been conducted to compare the vocabulary learning strategy use in simultaneous and sequential bilinguals. This paper addresses this gap by investigating and comparing those strategies reported by Italian-Turkish simultaneous and sequential bilingual high school students with a total number of 103 participants, 34 of which are simultaneous bilinguals and the remaining 69 sequential bilinguals. The Vocabulary Learning Strategies Questionnaire (VLSQ) developed by Schmitt (1997) was utilized as the instrument of data collection. We found that simultaneous and sequential bilinguals (a) are medium to high level vocabulary strategy users, (b) report using social strategies the most, (c) do not differ considerably in their choice of vocabulary learning strategy type, but (d) differ substantially in their choices of metacognitive strategy use. The results offer implications for teachers and teacher educators particularly as to how they teach and support bilingual students' vocabulary learning process in monolingual contexts.

Keywords: simultaneous bilinguals; sequential bilinguals; vocabulary learning strategies.

Introduction

Bilingualism involves knowledge of more than one language, the ability to behave on occasions according to fixed patterns of another culture (Bialystok, McBride-Chang, & Luk, 2005), or the "ability to communicate or be fluent in two languages" (Leong, 2008, p. 1024). This can be achieved by acquiring bilingual knowledge. The acquisition of bilingual knowledge and skills is related to two spatial perspectives. One is the acquisition of two languages simultaneously with the same onset of acquisition, while the other is when one language follows the other, known as sequential bilingualism.

Simultaneous bilinguals are the ones who are exposed to both languages from birth or at very early ages, while sequential bilinguals are the ones who learn the second language after acquiring the mother tongue (Jasso, 2020). Individuals who acquire two languages between the ages of 0–5 (Phakiti, De Costa, Plonsky, & Starfield, 2018; Bhatia & Ritchie, 2008) are called simultaneous bilinguals, whereas those who acquire the second language between the ages of 5–10 (Bhatia & Ritchie, 2008) or after the age of six, are called sequential bilinguals (De Houwer, 2005; Ljungberg, Hansson, Andrés, Josefsson, & Nilsson, 2013; Sörman, Josefsson, Marsh, Hansson, & Ljungberg, 2017). In this study, we explore how the onset of acquisition can be related to the use of various vocabulary learning strategies, as language learners employ a wide range of strategies in their language learning processes (Zare, 2012). For example, bilingual learners might utilize "characteristic strategies" due partly to challenges in the process of internalizing both languages (Ben-Zeev, 1977, p. 1009), and to the advantages in metalinguistic and cognitive skills (Thomas, 1988), which might facilitate the acquisition of lexical knowledge in both languages. Hong-Nam and Leavell (2007) and Jessner (1999), for example, report that bilingual learners employ different language and vocabulary learning strategies (Bialystok, 2011; Sazvar & Varmaziyar, 2017) than monolinguals.

Such strategic approaches of bilinguals differ from those of monolinguals, which might imply a different acquisitional process for bilinguals (Kalia, Wilbourn, & Ghio, 2014). For example, young bilingual children master phonological and syntax-related features of the second language easily (Singleton & Ryan, 2004), in addition to a better performance in vocabulary learning (Kaushanskaya & Marian, 2009). Besides, the target language comes naturally and spontaneously to them (Bhatia & Ritchie, 2008; McLaughlin, 1978) in conjunction with portraying "an instance of first language development" (Bhatia & Ritchie, 2008, p. 103). However, sequential bilinguals are more likely to rely on the first language system (Kessler, 1982) with translation (Schmitt, 1997; Liao, 2006) and word-to-word association (Kroll & Stewart, 1994) in vocabulary learning, which are some of the learning strategies adopted and employed by foreign language learners (Schmitt, 1977).

Drawing on these findings of bilinguals' learning advantages and different strategic preferences, we examine vocabulary learning strategies employed by simultaneous and sequential bilinguals. Despite the existing studies comparing bilingual and monolingual learners' vocabulary learning strategy use (Sazvar & Varmaziyar, 2017), to our knowledge, no prior studies have examined vocabulary learning strategy use in simultaneous and sequential bilinguals. To address this gap, we investigate vocabulary learning strategy use by 103 simultaneous and sequential bilinguals with a bilingual pair of Turkish and Italian at a private bilingual high school in Turkey, using the VLSQ questionnaire developed by Schmitt (1997). To this end, we ask the following research questions:

1. What are the reported vocabulary learning strategies of simultaneous bilingual and sequential bilingual Italian-Turkish high school students?

2. Is there a statistically significant difference between the mean scores of simultaneous bilingual and sequential bilingual Italian-Turkish high school students' vocabulary learning strategy use?

3. What are the most and least used vocabulary learning strategies in simultaneous bilinguals and sequential bilinguals?

Literature Review

Bilingualism

The world has become a globalized place especially in the last two decades, and globalization is likely to be the most impactful concept of the 21st century (Johannessen, 2019). With globalization, communication now occurs instantly through advanced technology. This instant communication allows languages to bypass physical boundaries (Yeates, 2007), making them more and more valuable assets to individuals. Therefore, the use of English with respect to social, cultural, educational, political and economic aspects has promoted its domination throughout the world (Yeates, 2007). It is estimated that there are 57 countries and 29 non-sovereign regions that embraced English as

an official language. Galloway and Rose (2015) say that "there are now more non-native English speakers than there are native English speakers" (pp. 14–15). With the world becoming interconnected, bilingualism is no longer an exception but a norm (Bialystok, Craik, Green, & Gollan, 2009; Poulin-Dubois, Bialystok, Blaye, Polonia, & Yott, 2013). Being bilingual has been established as "a necessity for survival in modern society" (Bush, 2014, p. 237). However, bilingualism commonly requires the active use of two languages in a societal context to continue relation and interaction. For example, it is defined as the ability to produce meaningful utterances in two or more languages (Ellis, 2016), whereas Bloomfield (1933) describes it as the "native-like control of two languages" (p. 56). The former seems to fit in our research context since the students are not required to show a native-like control of language in communication, but intelligibility in communication.

Vocabulary Development in Bilinguals

During the journey of language learning, one of the most challenging components that language learners may encounter is "poor vocabulary knowledge" (Fernândez & Schmitt, 2017, p. 280) or lack of vocabulary knowledge (Krashen, 1989). Zimmerman (1997) highlights that such a lack might impede meaningful communication for which possessing knowledge of grammatical structures would not be enough. This also implies that it is a good amount of vocabulary that helps to reach a foreign language competence (Cvekić, 2016). Vocabulary is an integral part of understanding and being understood by others (Lessard-Clouston, 2013), which requires one to develop vocabulary knowledge as a key component (Elgort, 2018) in terms of overall language development (Nation, 1990).

The key role of lexical knowledge in language competence and performance may differ for bilingual people who need to develop a lexical system for two languages. It might be hypothesized that bilinguals know less vocabulary than monolinguals as a result of less exposure (Poulin-Dubois, Bialystok, Blaye, Polonia, & Yott, 2012; Schmidtke, 2016). In this study, we look into the strategies that each employ to reveal knowledge about the vocabulary learning process with reference to strategies they use.

Bilinguals' vocabulary acquisition has been a topic of research in the past decades (Schwartz, Kozminsky, & Leikin, 2009). Bilinguals are found to develop lexical knowledge effortlessly and manage the challenges in the process of acquiring more than one lexical system simultaneously (Marchman, Fernald, & Hurtado, 2010), although the acquisition processes might differ recognizably (De Houwer, 2005). Bilingual infants were also found to understand the meanings of words in both languages by the age of two when language comprehension commences (Poulin-Dubois, Bialystok, Blaye, Polonia, & Yott, 2013). Early language exposure is therefore crucial in vocabulary development and quantity, as well as the quality of the input to which children are exposed, that greatly influences the vocabulary growth (Meara, 1995; Hart & Risely, 1997). Children's vocabulary success in terms of amount and process of acquisition rate may be due to exposure. For example, it was found that bilinguals outperformed their monolingual peers at all word difficulty levels (Dibaj, 2011), and that bilingualism was correlated with vocabulary breadth (Kassaian & Esmae'li, 2011). However, research also revealed that bilingual children have a smaller size of vocabulary in both languages when compared to monolingual children (Oller & Eiler, 2002; Portocarrero, Burright, & Donovick, 2007).

Bilinguals are also better than monolinguals in word learning (Kaushanskaya & Marian, 2009), thanks either to their language learning experience or to the execute function that develops through the continuous use of at least two languages (Kroll & Ma, 2018).

Hammarberg (2001) proposed that in learning a third language, bilinguals use their first language as a pragmatic and metalinguistic source, whereas the second language performs as lexical storage. Contrary to Hammarberg's (2001) statements, Barlatotti and Marian (2017) revealed in their study that bilinguals utilize both their languages in their vocabulary acquisition. They further stated that two languages served as a scaffolding model in developing the new lexicon. In the process of reaching a good size of vocabulary, vocabulary learning strategies can be called into service (Oxford & Scarcella, 1994). As stated above, improving vocabulary knowledge is a demanding task that makes strategic learning requisite, because smart selection and employment of vocabulary strategies lead to

more efficient vocabulary learning and larger vocabulary size (Nirattisai & Chiramanee, 2014).

Studies on Vocabulary Learning Strategies of Bilinguals

Monolinguals and bilinguals are known for using different strategies in vocabulary learning (Bialystok, 2011). A study by Sazvar and Varmaziyar (2017) compared monolingual and bilingual students' vocabulary learning strategies. Results showed that monolingual participants chose to employ social strategies most frequently, whereas bilingual participants preferred cognitive strategies. It is also important to note that participants were not different in terms of age, instruction, nationality, and gender. Furthermore, there was no statistically significant difference between monolinguals and bilinguals regarding the employment of cognitive, metacognitive, determination, and memory strategies.

Bilinguals are believed to have a greater vocabulary size compared to monolinguals (Allman, 2005). In another study conducted with 80 monolinguals and 80 bilingual learners of English, the effect of bilingualism on vocabulary learning was investigated (Keikhaie, Khoshkhoonejad, Mansoorzadeh, & Panahandeh, 2015). The results of the study put forward that bilingual speakers were considerably better in general vocabulary learning and recognition of L3 words. In a controlled productive ability vocabulary test, two groups which are Turkish-Persian bilinguals and Armenian-Persian bilinguals performed better than the monolingual group (Keshavarz & Astaneh, 2004).

A group of bilingual Polish students was found to mostly employ inferencing and transferring strategies (Otwinowska-Kasztelanic, 2011). In the same study, bilingual students who received vocabulary learning strategy instruction preferred note-taking as the most employed strategy. In the control group where bilingual students did not get any intervention, they also chose note-taking strategy as the most employed one. In both groups, looking for L1 similarities was the least employed vocabulary learning strategy. In a study, it was found that bilinguals mostly employed determination strategies from the discovery category (Cvekić, 2016).

Even though the related literature is rich in vocabulary learning strategy use by monolinguals, bilinguals, and multilinguals in various settings, to our knowledge, no prior studies have investigated vocabulary learning strategy use in simultaneous and sequential bilinguals. Thus, the current study aims to address this gap by investigating and comparing vocabulary learning strategy use in simultaneous and sequential bilinguals by investigating Italian-Turkish high school students studying in an Italian high school located in Istanbul, Turkey. The current study assumes that simultaneous and sequential bilinguals will differ in their vocabulary learning strategy use and frequency. This assumption stems from the claims in the literature that simultaneous bilinguals develop enhanced monitoring processes (Tao, Marzecová, Taft, Asanowicz, & Wodniecka, 2011), and that they acquire new words better than sequential bilinguals (Baker, 2011). This study also assumes that differences in vocabulary learning strategy use result from the type of bilingualism that one belongs to.

Methodology

Research Design

This quantitative survey research aims to compare two groups of bilinguals in terms of their practices (Creswell, 2012). Descriptive research generates data describing the "state of nature" at a specific time point (Boushey, Harris, Bruemmer, & Archer, 2007, p. 9). Investigation of vocabulary learning strategies with a descriptive studycan be "informative when we do not yet have the basic understanding of a phenomenon" (Loeb et al., 2017, p. 2). Addressing the research questions given above, this research employed a descriptive survey model to understand the pattern of vocabulary learning strategies across our simultaneous and sequential bilingual participants at one point in time.

Research Context

This study was conducted in an Italian Turkish state high school during

the fall semester of 2019-2020 in Istanbul, Turkey. This high school is at the Istanbul's center, a very multicultural environment owing to its history and many tourist attractions around.

In order to enroll in this school, at least one parent must be an Italian citizen, as required by the Italian government. The school runs as a semi-private state school with a yearly fee. The students enrolled at the school are generally from upper-middle-class families. This high school is representative of Italian schools in Turkey, and it works towards forming the personalities of young Italian and Turkish students as European and world citizens. For this purpose, educational activities enriched with both Turkish and Italian culture are carried out to provide a broad vision of common values, and respect for differences. It should be noted that the school belongs to both the Italian and to the Turkish national education system, of which it respects the rules and shares the general purposes. This high school aims for multilingual competence through CLIL.

The school pursues two curricula, and students can choose which curriculum to follow. Students might follow one of the three options. The first is the Italian scientific high school curriculum with foreign language medium, regulated by the Italian educational system. The second is the Turkish scientific high school with foreign language medium, at the end of which the Italian state exam can be taken to obtain an Italian high school diploma if the student and his/her family so wish. The last option is the Turkish mathematical high school with a foreign language medium, at the end of which students can only obtain a Turkish diploma.

Participants and Setting

The participants were 103 Italian-Turkish bilinguals studying in an Italian High School located in Istanbul. They are communicatively competent in Turkish and they can produce meaningful utterances in Italian. As stated before, individuals who acquire two languages before the age of six are called simultaneous bilinguals, while the ones who acquire the second language after the age of six are called sequential bilinguals (De Houwer, 2005; Ljungberg, Hansson, Andrés, Josefsson, & Nilsson, 2013; Sörman, Josefsson,

Marsh, Hansson, & Ljungberg, 2017). In the demographics part of the given questionnaire, the participants' bilingualism type was determined by asking them to decide which group they belong to, under the choices given in Table 1.

Table 1

How Simultaneous and Sequential Bilinguals are Determined

Bilingualism Type	Determination Criteria
Simultaneous	Participants who spoke more than one language before the age of six
Sequential	Participants who spoke their second language after the age of six

In Table 2, a total number of 103 Italian-Turkish Bilingual high school students participated in the study. The number of participants was 60 females and 38 males, in addition to five participants who preferred not to reveal their gender. 11 out of the 38 males were simultaneous bilinguals, while the remaining 27 were sequential bilinguals. 20 out of the 60 females were simultaneous bilinguals, while the remaining 40 were sequential bilinguals. The participants who did not reveal their gender consisted of three simultaneous bilinguals and two sequential bilinguals.

Table 2

Bilingualism Type, Gender And Class

Bilingualism Type		Simultaneous	Sequential	Total
Class	Gender	N	n	n
9th Grade	Male	1	6	7
	Female	6	8	14
	Non-Specified	1	1	2
10th Grade	Male	5	10	15

Bilingualism Type		Simultaneous	Sequential	Total
Class	Gender	N	n	n
	Female	5	16	21
	Non-Specified	1	0	1
	Male	2	5	7
11th Grade	Female	8	5	13
	Non-Specified	0	0	0
	Male	3	6	9
12th Grade	Female	1	11	12
	Non-Specified	1	1	2
		34	69	103

Table 2 shows that a total number of 103 high school students participated in the study. It should be noted that there were two 10th grade classes and one class for each remaining grade, namely, 9th grade, 11th grade, and 12th grade. Because of the previously mentioned situation, there were a total number of 37 10th graders, 11 of which were simultaneous bilinguals and 26 of which were sequential bilinguals. There were a total number of 23 10th grade students, 8 of which were simultaneous bilinguals and the remaining 15 were sequential bilinguals. As for the 11th graders, there were a total of 20 students, half of which were simultaneous, and the other half sequential bilinguals. The 12th graders consisted of five simultaneous and 18 sequential bilinguals.

Instruments

As the main data collection instrument, Schmitt's (1997) Vocabulary Learning Strategies Questionnaire (VLSQ) was utilized. Cronbach's alpha for the instrument was found as .813 indicating a strong reliability (Hulin,

Netemeyer, & Cudeck, 2001). The questionnaire was a 5-point Likert-type that had options from strongly disagree to strongly agree. The questionnaire divides the vocabulary learning strategies into five different categories that are a) Cognition, b) Determination, c) Memory, d) Metacognition, and e) Social Strategies.

Schmitt's (1997) vocabulary learning strategies taxonomy has five categories that can be listed as determination strategies, social strategies, memory strategies, cognitive strategies, and metacognitive strategies. The following paragraphs will give detailed information regarding these categories by of Scmitt's (1997).

Determination strategies are about determining the meaning of an unknown word with the help of dictionaries, guessing from the context, and identifying the discourse elements. These are the strategies that allow learners to discover a word's meaning by themselves.

Social strategies are employed with the aim of discovering the definition of an unknown word through social interactions such as asking classmates, teachers, and others.

Memory strategies are the strategies that are used for acquiring and remembering new vocabulary items through mental processing and connection with prior knowledge.

Cognitive strategies are techniques that are employed in learning a new word. Repetition, taking notes, highlighting, and listing words can be given as examples. It is important to note that cognitive strategies are not about mental processing in vocabulary learning, but rather a mechanical aspect of the acquiring process.

Metacognitive strategies are about finding opportunities to learn, maintain, and review experiences. In metacognitive strategies, there are decision-making, monitoring, and self-assessment aspects. Taking advantage of visual aids, media, and group projects to learn new words can be given as an example.

Data Collection

This study was conducted with two educational groups at one specific time;

thus, it can be regarded as a cross-sectional survey design (Creswell, 2012, p. 378). The school principal was informed about the dynamics of the study prior to the data collection phase. Necessary permissions were granted by the school principal and teachers of five different classes. Students were also informed about the purpose of the study and the confidentiality, by the researcher himself. The questionnaire was handed out to students during regular class time. Students were interested in the questionnaire, and their questions regarding items were answered in a friendly manner. It took approximately eight minutes for them to fill out the VLSQ questionnaire.

Data Analysis

With the aim of answering the research questions, the quantitative data were obtained via VLSQ. The descriptive part of the questionnaire was analyzed through descriptive statistics, and the quantitative part was analyzed through inferential statistics such as independent-samples t-tests that were run to determine the differences in vocabulary learning strategy use and bilingualism type. Vocabulary learning strategy choices of participants established the classification of their frequency of VLS use. The frequency of use was divided into five categories: no use, low use, medium use, high use, and very high use, based on a five-point rating scale that ranged from 1 (Strongly Disagree) and five (Strongly Agree). Accordingly, the scoring system ranges from 1.00 to 5.00. The categories are valued as 1.00 to 1.50 (No Use), 1.50 to 2.50 (Low Use), 2.50 to 3.00 (Medium Use), 3.00 to 4.00 (High Use), and 4.00 to 5.00 (Very High Use).

Results

The main goal of the study was to investigate and compare simultaneous bilingual and sequential bilingual Italian-Turkish high school students' vocabulary learning strategies. The results are based on the factor of bilingualism type, namely simultaneous and sequential bilinguals. The following sections are going to present findings in relation to bilingualism type.

Italian-Turkish Bilingual High School Students' Reported Vocabulary Learning Strategy Types

Before comparing simultaneous and sequential bilinguals' vocabulary strategy use, this section will present all bilingual participants' reported vocabulary learning strategy use. An independent samples t-test was utilized to explore bilinguals' reported vocabulary learning strategy type. Group statistics of bilinguals' strategy types can be seen in Table 3.

Table 3

Bilingual Students' Reported Vocabulary Learning Strategy Types

Category	N	Min	Max	Mean	SD	level
Cognition	103	1,00	4,75	2,98	,71	Medium
Determination	103	1,00	4,44	3,19	,61	High
Memory	103	1,22	4,56	3,20	,59	High
Metacognitive	103	1,00	4,50	2,64	,79	Medium
Social	103	1,33	5,00	3,44	,85	High
Total	103	1,64	3,93	3,09	,47	High
Valid	103					

Table 3 reveals that social strategies are the most frequently reported vocabulary learning strategy by Italian-Turkish bilingual high school students *(M = 3.44, SD = .85)*. Social strategies are followed by memory strategies with a mean of 3.20 *(SD = .59)* and determination strategies *(M = 3.19, SD = .61)*. The least reported vocabulary learning strategy type was found to be metacognitive strategies with a mean of 2.64 *(SD = .79)*. In total, three of the categories were reported as having a high frequency, while the remaining two categories were reported as having a medium frequency. This draws

a positive picture of vocabulary learning strategy use by Italian-Turkish bilingual high school students.

Vocabulary Learning Strategy Use of Simultaneous and Sequential bilinguals

An independent samples t-test was conducted to compare simultaneous and sequential bilingual students' reported vocabulary learning strategy types. Simultaneous and sequential bilinguals' vocabulary strategy choices are presented separately in the following subsections.

Table 4

Vocabulary Learning Strategy Types of Simultaneous and Sequential Bilinguals

Category	Bilingualism	N	Mean	SD	Level
Cognition	Simultaneous	34	3,11	,59	High
	Sequential	69	2,92	,76	Medium
Determination	Simultaneous	34	3,06	,68	High
	Sequential	69	3,26	,56	High
Memory	Simultaneous	34	3,12	,67	High
	Sequential	69	3,24	,55	High
Metacognitive	Simultaneous	34	2,79	,81	Medium
	Sequential	69	2,57	,77	Medium
Social	Simultaneous	34	3,41	1.05	High
	Sequential	69	3,45	,78	High
Total	Simultaneous	34	3,10	,50	High
	Sequential	69	3,09	,45	High

Simultaneous Bilinguals' Vocabulary Learning Strategy Use

Table 4 shows that simultaneous bilinguals mostly prefer social strategies in vocabulary learning *(M = 3.41, SD = 1)*. Social strategies are followed by memory strategies (*M* = 3.12, *SD* = .67) and cognition strategies *(M = 3.11, SD = .59)*. Metacognitive strategies, on the other hand, were the least employed vocabulary learning strategies with a mean score of 2.79 (*SD* = .81). For the simultaneous bilingual group, it is important to note that metacognitive strategies were the only vocabulary learning strategy type that had a mean score below 3.00. These points suggest that simultaneous bilinguals report social strategies as the most employed vocabulary learning strategy use type. Furthermore, simultaneous bilingual participants were reported to have a high frequency in all the categories except for the metacognitive strategy type. The upcoming subsection will present sequential bilinguals' reported vocabulary learning strategy use.

Sequential Bilinguals' Vocabulary Learning Strategy Use

Table 4 shows that sequential bilinguals mostly prefer social strategies with a mean score of 3.45 (*SD* = .78) that is followed by determination strategies *(M* = 3.26, *SD* = .56) and successively memory strategies with a mean score of 3.24 (*SD* = .55). The least preferred vocabulary learning strategy type by sequential bilinguals was metacognitive strategies with a mean score of 2.57 (*SD* = .77). For the sequential bilingual group, it is important to note that cognition strategies along with metacognitive strategies were found to be the only two strategy type that had a mean score below 3.00. These points suggest that sequential bilinguals report social strategies as the most employed vocabulary learning strategy use. Furthermore, sequential bilingual participants were reported to have a high frequency in all the categories except for the cognition strategy and metacognitive strategy categories. The following subsection will compare simultaneous and sequential bilinguals' reported strategy use.

Comparison of Simultaneous and Sequential Bilinguals' Vocabulary Learning Strategy Type

The comparison of two bilingual groups illustrates that both simultaneous and sequential bilinguals are good users of vocabulary learning strategies. Simultaneous bilinguals' reported strategy use had a mean of 3.10 (*SD* = .50) and sequential bilinguals' reported strategy use had a mean of 3.09 (*SD* = .45). The mean scores across bilingualism type and vocabulary learning strategy use are close, and this indicates that simultaneous and sequential bilingual students do not even minimally differ in their total strategy use. As can be seen from Table 4, both simultaneous and sequential bilingual reported a high frequency of use in vocabulary learning strategy types except for the metacognitive category, which had a medium frequency of use. Both simultaneous and sequential bilinguals report using social strategies the most. Table 4 clearly shows that social strategies, determination strategies, and memory strategies have been reported to have a high frequency in both simultaneous and sequential bilingual groups of Italian-Turkish high school students. Furthermore, metacognitive strategies have been reported to be the least frequently preferred vocabulary learning strategy type in both simultaneous and sequential bilingual students. There was no low frequency of use in any vocabulary learning strategy category.

The difference between simultaneous and sequential bilingual groups was the highest in the metacognitive strategy category with a mean difference of .22. This implies that simultaneous and sequential bilinguals differ considerably in their choice of metacognitive strategy use when compared to other vocabulary learning strategy categories.

Differences in Reported Vocabulary Learning Strategies in Simultaneous and Sequential Bilinguals

Independent samples t-test was conducted to compare each type and the total of vocabulary learning strategy use in simultaneous bilingual group and sequential bilingual groups.

Table 5

Independent Samples T-Test for Vocabulary Learning Strategy Types between Simultaneous and Sequential Bilinguals

Category	T	df	Sig. (2-tailed)	MD	SE	95% Confidence Interval of the Difference	
						Lower	Upper
Cognition	1,225	101	,223	,18	,14	-,11308	,47859
						-,09066	,45618
Determination	-1,510	101	,134	-,19	,12	-,44477	,06029
						-,46340	,07892
Memory	-1.00	101	,318	-,12	,12	-,37338	,12246
						-,39416	,14323
Metacognitive	1,330	101	,184	,22	,16	-,10714	,55045
						-,11529	,55859
Social	-,230	101	,815	-,04	,18	-,40134	,31665
						-,43668	,35200
Total	,08	101	,929	,08	,09	-,18878	,20653
						-,19725	,21499

The analysis shows that vocabulary learning strategy categories of cognition, determination, memory, metacognitive, and social indicated no statistically significant difference between simultaneous and sequential bilingual groups (*p*>0.05). This means that simultaneous bilinguals and sequential bilinguals do not differ significantly in their choice of vocabulary learning strategy type. The total score of these vocabulary learning strategy categories was also tested. There was no statistically significant difference in the total mean

scores for simultaneous bilingual group *(M* = 3.10, *SD* = .50) and sequential bilingual group *(M* = 3.09, *SD* = .45) conditions; *t* (101) = 1.225, *p* = .929 with a very small effect size (*d* = .02) (Sawilowsky, 2009). This also means that differences between simultaneous and sequential bilinguals' mean scores are likely due to chance, and not to the bilingual type. The results reflect that simultaneous and sequential bilinguals do not differ in their choice of vocabulary learning strategy type and overall use. Not enough evidence is available to suggest the null is false at the 95% confidence level.

The Most and The Least Frequently Reported Strategies in Simultaneous and Sequential Bilinguals

This section presents the most and least frequently reported vocabulary learning strategies in both simultaneous and sequential bilingual participants of this study.

Table 6

The Most and Least Frequently Reported Strategies

Highest and lowest averages in reported strategy use	Mean	SD	Level
The strategies with the highest average by Simultaneous bilinguals			
(Det6) I analyze the word by breaking it into meaningful parts.	3,94	1,12	High
(Mem3) I link the word to an Italian/Turkish word with a similar sound.	3,65	1,32	High
(Det3) I make up my own sentences using the new word.	3,59	1,25	High
The strategies with the highest average by Sequential bilinguals			
(Det6) I analyze the word by breaking it into meaningful parts.	3,94	1,12	High
(Soc3) I ask classmates for meaning of the word.	3,59	1,41	High
(Mem7) I link the word to a visual image in my mind.	3,44	1,05	High
The strategies with least average by Simultaneous bilinguals			
(Memo9) I link the word to an Italian/Turkish word with similar sound.	2,06	,98	Low

Highest and lowest averages in reported strategy use	Mean	SD	Level
(Det1) I analyze the word by breaking it into sound segments.	2,35	1,25	Low
(Memo5) I group words together with storyline.	2,50	1,30	Low
The strategies with least average by Sequential bilinguals			
(Det1) I analyze the word by breaking it into sound segments.	2,20	1,02	Low
(Memo9) I link the word to an Italian/Turkish word with similar sound.	2,25	1,15	Low
(Memo5) I group words together with storyline	2,78	1,14	Med.

Table 6 shows the most and least frequently reported vocabulary learning strategies in both simultaneous and sequential bilingual groups. Regardless of the onset of bilingual acquisition, the students reported one of the determination strategies (3) *"I analyze the word by breaking it into meaningful parts"* as the most frequently used strategy item. On the other hand, the other top two strategies differed among the groups, but the second most used strategy of sequential bilinguals and the third most used strategy of simultaneous bilinguals belong to the same memory category.

In the context of this research, simultaneous bilingual participants work towards learning the meaning of the unknown word by analyzing the word, breaking it into meaningful parts, linking the new word to a Turkish/Italian word with a similar word and making up his/her own sentences using the new word. It should also be noted that in the previous sections, social strategy use was reported to be the most frequently reported strategy in bilingual participants in total. However, the social strategy did not find a place in the most frequently reported items in the simultaneous bilingual group, while the determination strategy category had two of its items placed on the same list.

These three frequently reported strategies show that sequential bilingual students use dictionaries, link the word to a visual image, or ask classmates for the meaning when they encounter an unknown word. When compared to simultaneous bilinguals, sequential bilinguals also reported using a high frequency of social strategy.

Table 6 shows that the least reported vocabulary learning strategies

in both groups are the same, with minor mean and standard deviation differences. Thus it can be inferred that simultaneous and sequential bilingual participants in the context of this study do not make sound associations, break the words into sound segments, or group words together with a storyline when they are learning a vocabulary item.

With minor mean and standard deviation differences, the least reported vocabulary learning strategies by both simultaneous and sequential bilinguals are identical. Thus, simultaneous and sequential bilingual Italian-Turkish high school students do not considerably differ in their non-employment of reported vocabulary learning strategies.

Discussion

Vocabulary learning strategies of simultaneous and sequential bilinguals have not found a place in the literature. This has been an ongoing situation considering "the age factor, as it relates to second language lexical acquisition, is not a matter that receives a great deal of attention" (Singleton & Lengyel, 1995, p. 10). Harley and Wang (1997) also pointed out the lack of studies "on ultimate attainment in the area of lexis and collocation" (p. 24). Lack of studies in the area of lexis and age extends to the relationship of bilingualism type and vocabulary learning strategies as well. Bush (2014) also lines up with this argument by highlighting the lack of studies that measures the age-of-onset impact on vocabulary acquisition. The following paragraphs are formulated in accordance with the research questions of the current study.

Vocabulary Learning Strategies of Simultaneous Bilingual and Sequential Bilingual Students

In the light of the above-mentioned analyses, both simultaneous and sequential Italian-Turkish bilingual high school students reported a high frequency of vocabulary learning strategy use except for cognition and metacognitive categories. In contrast to the current study's findings, Cengizhan (2011) found metacognitive vocabulary learning strategies as

the most preferred one in high school students. At this point, it is important to remark that the previously mentioned study did not consider the age of onset in its research. In the current study, simultaneous bilinguals reported a high frequency of use in all categories except for the metacognitive category. Sequential bilinguals, on the other hand, reported high frequency in determination, memory, and social categories, leaving cognition and metacognitive strategies at the medium frequency level. It can be inferred that metacognition strategies are not preferred by both simultaneous and sequential bilinguals when learning vocabulary.

Statistical Differences Between the Simultaneous Bilingual and Sequential Bilinguals' Strategy Use

In the context of this study, simultaneous bilinguals and sequential bilinguals did not differ considerably in their reported vocabulary learning strategy type. A study comparing vocabulary learning strategies of monolinguals and bilinguals found out that monolingual participants mostly employ social strategies while bilingual students prefer cognitive strategies (Sazvar & Varmayizar, 2017). In relation to the previous study, the current research has found that both simultaneous and sequential bilingual students prefer social strategies the most. Seddigh (2012), on the contrary, found social strategies as the least reported category. Sazvar and Varmayizar's (2017) study highlights the high use of cognitive strategies in bilinguals. Our findings also show medium to a high frequency of cognitive strategy use among both bilingual groups. In the previously mentioned study, there was no statistically significant difference between monolinguals and bilinguals regarding the employment of cognitive, metacognitive, determination, and memory strategies. Even though the current study compares simultaneous and sequential bilinguals' strategies, our findings are consistent with Sazvar and Varmayizar's study. This might imply that vocabulary learning strategy use does not considerably change in accordance with the bilingualism type. Mother tongue and a second language are processed in a single left network in the brain by utilizing all language areas when the second language is acquired early (Perani, 1998). On the other hand, the bilinguals who learned

their second language after the age of six, known as sequential bilinguals, activate different brain areas; however, it is the same for semantics, leading to the assumption that simultaneous and sequential bilinguals do not differ in their activation of brain areas when learning vocabulary.

Specific Strategies Employed by Simultaneous and Sequential Bilinguals

Both simultaneous and sequential bilinguals reported social strategies the most, and metacognitive strategies the least. Similarly, a study that compared the effect of simultaneous and sequential bilingualism on language found out that simultaneous or sequential acquisition of a second language does not have a noteworthy difference in terms of strength (Martin, et al., 2013). Another study found that simultaneous and sequential bilinguals' word articulation does not take place at different locations in the brain (Frenck-Mestre, Anton, Roth, Vaid, & Viallet, 2005), which might account for the reported overlap in the use of strategies to acquire vocabulary. These two studies also constitute a theoretical basis for our findings, in terms of reporting no significant results about similar participant groups.

The most reported vocabulary learning strategy items were identical in simultaneous and sequential bilinguals. The current study found a high frequency of determination strategy use among both simultaneous and sequential bilinguals; furthermore, determination strategy 6 "*I analyze the word by breaking it into meaningful parts*" was found as the most frequently reported strategy in the whole questionnaire. Cvekić's (2016) and Amirian and Heshmatifar's (2013) also found determination strategies to be the most frequently used group of strategy. Simultaneous and sequential bilinguals differed most in the metacognitive strategy use, with simultaneous bilinguals' having reported a higher frequency of use. This implies that simultaneous bilinguals are more likely to employ metacognitive strategies when learning vocabulary. This can be a result of their language learning experience, attention control, or executive function (Carlson & Meltzoff, 2008; Keeley, 2019).

The current study suggests that simultaneous and sequential

bilinguals are medium-to-high vocabulary learning strategy users and that simultaneous and late Italian-Turkish bilingual high school students do not considerably differ in their reported vocabulary learning strategy use. Additionally, both simultaneous and sequential bilinguals mostly report using social strategies, and they do not generally prefer metacognitive strategies when learning vocabulary.

Limitations and Further Research

This study has a few limitations to be considered. First of all, the related literature lacks studies that compare simultaneous and sequential bilinguals' vocabulary learning strategies; thus, making it harder for the researcher of this study to compare results in the discussion part. As the work on the related literature has accumulated, more studies with various focuses are going to be conducted and more meaningful results are going to be reached.

Similar studies with additive and subtractive bilinguals as well as passive bilinguals can be conducted to provide an in-depth look at bilinguals' vocabulary learning strategies. Further studies might investigate different bilingual groups from various contexts and age groups. The relationship between bilinguals' vocabulary learning strategies, vocabulary size and attainment might also be a point of investigation. Since we did not train students to use strategies, further research can examine how effective such training could be on vocabulary learning in different bilingual settings. The findings could inform several pedagogical implications for teachers with bilingual students and adapt their vocabulary instruction accordingly. The knowledge of bilingual students' inclination to use social strategies in vocabulary learning might inform teachers and regulate their vocabulary instructions accordingly. Also, metacognition strategies were not favored by bilinguals in the current study, and this might also inform and regulate teachers' vocabulary instruction. Bilinguals were mostly found to analyze the word by breaking it into meaningful parts; thus, teachers might attach more importance to the lexicological aspect of vocabulary learning to address and appeal to bilinguals' vocabulary learning strategy choice. Language teacher educators might also inform future teachers about vocabulary

learning strategy choice of bilinguals whom they will find themselves teaching someday.

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ITALŲ–TURKŲ DVIKALBIŲ STUDENTŲ ŽODYNO MOKYMOSI STRATEGIJOS: VIENALAIKIO IR NUOSEKLAUS DVIEJŲ KALBŲ ĮSISAVINIMO POVEIKIS

Santrauka. Žodyno mokymosi strategijų laukas buvo ir yra viena iš kalbų mokymosi strategijų mokslinių tyrimų sričių. Dvikalbiai žmonės naudoja skirtingas kalbos ir žodyno mokymosi strategijas nei vienakalbiai (Hong-Nam & Leavell, 2007; Jessner, 1999). Nors yra daug tyrimų, kuriuose analizuojamas ir lyginamas vienakalbių, dvikalbių ir daugiakalbių besimokančiųjų kalbų mokymosi strategijų naudojimas, dar visiškai nebuvo palyginta, kaip žodyno mokymosi strategijas taiko tie dvikalbiai žmonės, kurie abi kalbas įsisavino tuo pačiu metu, ir tie, kurie kalbas įsisavino nuosekliai, t. y. mokydamiesi vieną po kitos. Šiuo tyrimu siekiama užpildyti esamą spragą, tiriant ir lyginant, kokias strategijas taiko mokantieji italų ir turkų kalbas, jas įsisavinę skirtingai – tuo pačiu metu ir nuosekliai. Tyrimo dalyviai – 103 dvikalbiai vidurinių mokyklų mokiniai, iš kurių 34 kalbų mokėsi vienu metu, o likusieji 69 – nuosekliai. Tyrimo duomenys buvo renkami naudojant Schmitto (1997) sukurtą žodyno mokymosi strategijų klausimyną (VLSQ). Nustatėme, kad vienalaikio ir nuoseklaus minėtų dviejų kalbų mokymosi atstovai (A) žodyno strategijas taiko vidutiniškai ir labai dažnai, (B) teigia dažniausiai taikantys socialines strategijas, (C) jų žodyno mokymosi strategijų pasirinkimas labai nesiskiria, bet (D) ženkliai skiriasi jų pasirinktų metakognityvinių strategijų naudojimas. Rezultatai leidžia mokytojams, ypač mokytojų rengėjams įžvelgti tai, kaip jie turėtų mokyti ir skatinti dvikalbių mokinių žodyno mokymosi procesą vienakalbiuose kontekstuose.

Pagrindinės sąvokos: vienalaikis mokymasis; nuoseklusis mokymasis; dvikalbiai; žodyno mokymosi strategijos.