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Age, Language Difference and Proficiency as Determinant Factors in Learning Strategy Use

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Abstract
This study examines how language difference, age, and proficiency are related to the choice and use of learning strategies by students completing a reading comprehension task. The aim of this study is to determine the learning strategies employed by two groups of students of different ages and with different foreign language proficiency levels. Participants of the study were 94 university students and 105 secondary school students. Participants were given a reading comprehension task in their native language, Turkish, and another in English, with the learning strategies they employed in the two languages categorized according to the Learning Strategies Determining Scale. It was observed that language difference, age and proficiency were influential factors in determining which learning strategies individuals used.
Key words: age; strategy; language learning.

Resumen
Edad e Idioma en el Uso de Estrategias de Aprendizaje
Este estudio examina cómo la diferencia del idioma, la edad y la competencia se relacionan con la elección y el uso de estrategias de aprendizaje en una tarea de comprensión de lectura. El objetivo de este estudio es descubrir el uso de estrategias de aprendizaje de dos grupos de diferentes edades y con diferentes niveles de competencia en lenguas extranjeras. Los participantes del estudio fueron 94 estudiantes universitarios y 105 estudiantes de secundaria. A los participantes se les asignó una tarea de comprensión lectora en turco e inglés, y luego se determinaron las estrategias de aprendizaje que utilizaron en los dos idiomas con la ayuda de la escala de Estrategias de Aprendizaje. Como resultado, se observó que la diferencia de idioma, la edad y la competencia eran factores efectivos en el uso de estrategias de aprendizaje.
Palabras clave: edad; estrategia; aprendizaje de idiomas.

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Résumé

Âge et Langue dans L'utilisation des Stratégie D'apprentissages

Cette étude examine comment la différence de langue, l'âge et la compétence sont liés au choix et à l'utilisation de stratégies d'apprentissage dans une tâche de compréhension en lecture. Le but de cette étude, menée avec des sondages, est d´explorer l'utilisation des stratégies d'apprentissage chez deux groupes d´étudiants de différents âges et avec des niveaux variés de maîtrise de langues étrangères. Les participants étaient 94 étudiants universitaires et 105 lycéens. Ils ont reçu une tâche de compréhension de lecture en turc et en anglais puis, l´on a déterminé les stratégies d'apprentissage utilisées dans les deux langues à l'aide d´une échelle. Les résultats ont montré que les différences de langue, d'âge et la compétence étaient des facteurs efficaces dans l'usage des stratégies d'apprentissage.

Mots clés : âge ; stratégie ; apprentissage des langues.

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INTRODUCTION

The boundaries of Limitations in conventional education have always existed for both educators and learners. Limited time and little to no one-on-one, personalized tutoring among other constraints have created significant disparities in student achievement levels. To boost achievement in the learning process and to make the learning process more effective, hundreds of studies over the last 25 years have investigated the utility of using a specific learning tactic or a set of learning tactics. Through the use of such learning tactics or 'learning strategies' defined as "the collection of mental tactics employed by an individual in a particular learning situation to facilitate acquisition of knowledge or skill" (Derry & Murphy, 1986, p. 2), it is intended that the average student will be able to achieve more than they could without such strategies.

Various studies on learning strategies look into variables such as proficiency, learning environment, ethnicity, age, gender, learning styles, motivation and beliefs about what learning is (Nambiar, 2009). Most studies focus on age and language as factors in the use of learning strategies in isolation and only in terms of efficiency and variety. However, there is one aspect that is left out in the literature: the difference in the learning strategies selected by learners when studying in their mother tongue and when studying in a foreign language and the differences in learning strategy choices that could appear according to age. The current study aims to explore the combined effect of age, language difference, and language proficiency on the learners' choice and application of learning strategies.

Learning and Learning Strategies

Learning can be described functionally or mechanistically. Defined functionally, "learning is the changes in behavior that result from experience" (De Houwer et al., 2013, p. 631). A mechanistic definition, however, holds that learning is "changes in the organism that result from experience" (De Houwer et al., 2013, p. 631). Regardless of where and how the change actually occurs, learners try various strategies to ease their journey through the learning process. The aim of the learner using a learning strategy is to 'learn how to learn' (Anderson, 1985; Dillon & Schmeck, 1983; Kirby, 1984). Learning strategies can be defined as a set of mental tactics which the learner employs in order to facilitate the acquisition of a skill or knowledge when a learning situation arises (Derry & Murphy, 1986). However, highlighting the aspect of encoding and memory when defining learning strategies is also necessary. Weinstein (1988) defines learning strategies as "any behaviors or thoughts that facilitate encoding in such a way that knowledge integration and retrieval are enhanced" (p. 291). Learning strategies can be grouped into two categories depending on the mental processes they require: cognitive strategies and metacognitive strategies. A cognitive learning strategy is a "plan for orchestrating

cognitive resources, such as attention and long-term memory to help reach a learning goal" (Weinstein & Meyer, 1991, p. 17). Metacognitive strategies, on the other hand, are applicable in the learning process generally and they are not as situation specific as cognitive strategies. Metacognitive strategies "involve generic skills essential for adult, more sophisticated forms of thinking and problem solving" (Cornford, 2002, p. 359).

Learning strategy research, when it first emerged in the 1950s, was a resource limited to the military and government. Once these restricted access research findings began to be available in the public domain, the field attracted attention from many independent researchers. Studies conducted in the 1970s and the 1980s proved that learning strategies were important for both educators and learners. Since the 1990s, the relationship between learning strategies and other variables such as "proficiency, learning environment, ethnicity, age, gender, learning styles, motivation and beliefs" (Nambiar, 2009, p. 144) has been studied.

Learning Strategy Classifications

Various attempts have been made to categorize learning strategies and a number of groupings have emerged. There are taxonomies which serve a specific purpose such as Oxford's (1990) taxonomy for the learning strategies used in language learning. There are those which place emphasis on the learning strategies employed in social interaction such as O'Malley and Chamot's (1990) taxonomy. Weinstein and Mayer (1986) incorporate learning strategies into the information processing theory, which distinguishes their typology from others by making it broader. Weinstein and Mayer (1986) divide the learning strategies into five categories which are presented in Table 1:

Table 1. Weinstein and Mayer's (1986) Taxonomy of Learning Strategies

Strategy Groups	Task	Strategies	Aim
Rehearsal Strategies	Basic	Recitation or repetition of information	To select and encode information in a verbatim manner
	Complex	Copying material, taking notes, and underlining or marking texts	
Elaboration Strategies	Basic	Creating mental imagery and using mnemonic techniques	To make information meaningful and to build connections between information given in the learning material and a learner's existing knowledge
	Complex	Paraphrasing, summarizing, creating analogies, relating the new information to prior knowledge, questioning, trying to teach the information to another person	
Organizational Strategies	Basic	Sorting or clustering related information based on common characteristics or relationships	To construct internal connections among the pieces of information given in the learning material
	Complex	Outlining or diagramming the information and creating spatial relationships using strategies such as networking	
Comprehension Monitoring Strategies	Both	Self-questioning, error detection, problem solving	To assess the learner's understanding of the learning material and to executively control the use of acquisition and organizational strategies
Affective and Motivational Strategies	Both	Positive self-talk, anxiety reduction, and time management	To help focus the learner's attention and maintain the learner's motivation

Weinstein and Mayer (1986) base their taxonomy on three main types of strategies: rehearsal strategies, elaboration strategies and organizational strategies. Furthermore, they differentiate between basic or complex learning tasks and define the strategies by combining the three main categories with the nature or complexity of the task: basic or complex. Basic tasks involve "rote or verbatim memorization or learning" and complex learning tasks involve "higher-level conceptual or content learning" (Weinstein et al., 2000, p. 731). This produces a total of six learning strategy categories. Another two complementary groups are added to this typology: comprehension monitoring strategies and affective & motivational strategies. These two groups support the completion of a

learning task and complement the first six groups (Weinstein & Hume, 1998; Weinstein et al., 2000).

Age and Learning Strategy Use

As people age, they experience a multitude of changes, both biological and psychosocial. From the point of view of neuroscience, the neuroanatomical and neurophysiological changes which naturally occur due to the aging of the brain affect some cognitive functions such as attention and memory (Glisky, 2007). These subtle declines in cognitive function influence how learners approach a learning task, which then plays a role in the selection and the implementation of learning strategies. The role of age as a factor in learning strategy choices, although seemingly vital for learning strategies research, is an area which has been largely overlooked, with most of the literature focused exclusively on adults and adolescents (Oxford, 1996). Since adults and adolescents are able to describe their ways of thinking and learning far better than children, these studies base their methods of data collection on self-reports and questionnaires while studies which select children as participants rely heavily on data gathered from observation (Nambiar, 2009).

From a scientific perspective, there is a consensus that age is highly correlated with morphological changes in every brain region (Schultz et al., 1994). Thus, it can be considered that age has an effect on learning and learning strategy use which naturally materialize in the brain. The general view of how age affects the choice and use of learning strategies is that adult learners can handle abstract processes more proficiently than younger learners (Gunning, 1997). In this case, children would be inclined towards affective and social strategies rather than cognitive and metacognitive ones. Adolescents, not entirely different from children, would be able to use abstract strategies such as cognitive and metacognitive strategies more frequently than children but not as frequently as adults and one would expect to observe decline in adolescents' use of affective and social strategies. Adults, however, are expected to use metacognitive and cognitive strategies more frequently while the preference for affective and social strategies gradually diminishes.

Studies on age have put forward various theories on this issue. One hypothesis raises the question of whether there is a progression in learners from strategies that require concrete mental processes to those which necessitate abstract mental processes (Gunning, 1997; O'Malley et al., 1985). Those researchers who have excluded age entirely as a factor in their studies constitute the opposing view which argues that age is irrelevant in learning strategy research (Nambiar, 2009). A further view advocates that even if different age groups report using the same strategy, the underlying mental processes may not be the same (Mackworth & Bruner, 1970; Mosher & Hornsby, 1966; Rubin, 1975).

As one of the studies confirming the transition from concrete strategies to abstract, O'Malley et al. (1985) reveal that adolescents employed cognitive strategies most often followed by metacognitive strategies. As expected, the participants used socio-affective strategies the least. Another study by Griffiths (2003) concludes that the frequency of strategy use was directly proportional to age.

Contradictory to the aforementioned hypothesis about the relationship between age and learning strategies, Purdie and Oliver (1999) discovered that primary school children aged nine to 12 years used social strategies the least while they frequently used cognitive and metacognitive strategies. Similarly, a case study on the learning strategy use of adults points out that the most frequently used learning strategies were cognitive strategies such as note-taking and repetition (Ioup et al., 1994). However, it cannot be claimed that alternatives such as socio-affective strategies were not frequently used by the participants of this study.

Representing the third view, Rubin (1975) focuses on the use of guessing as a learning strategy in young and adult learners. She states that adult learners' guessing ability is sharper than that of younger learners because adult learners constantly look for cues that could give away the answer while younger learners' ability to guess is more variable. She concludes that these two groups employ separate mental processes for guessing, a cognitive strategy (Mackworth & Bruner, 1970; Mosher & Hornsby, 1966; Rubin, 1975). Therefore, even if two individuals from two different age groups report using the same learning strategy, the underlying mental processes may be entirely distinct.

Finally, with the studies on age taken into consideration, the question of whether age affects learning strategy use can be justifiably considered inconclusive. It is known that age affects learning strategy use but exactly how it does so remains unclear. Age is a factor which certainly influences learning strategy use, at least in a way that relates to underlying mental processes (Mackworth & Bruner, 1970; Mosher & Hornsby, 1966; Rubin, 1975).

Proficiency and Learning Strategy Use

In learning strategy research, it is well established that learners' strategy choice and frequency of learning strategy use are correlated with their proficiency (Green & Oxford, 1995; Griffiths, 2003). What the literature cannot assert is whether proficiency has an effect on learning strategy use or vice versa. The relationship between proficiency and learning strategies is not one-way street from cause to effect (Green & Oxford, 1995). Rather, it is an ascending spiral in which higher levels of proficiency result in a rise in learning strategy use and this initiates a reaction that leads to higher levels of proficiency.

Chamot and Kupper (1989) state that language proficiency is proportionate to how appropriately and how often learning strategies are used and to the range of strategies

employed. There are also various studies which support this fact (Bremner, 1999; Bruen, 2001; Chamot, 1995; Chamot & Kupper, 1989; Dreyer & Oxford, 1996; Gan et al., 2004; Green & Oxford, 1995; Griffiths, 2003; Gunning, 1997; Kayad, 1999; Lai, 2005; Nambiar, 1996; Park, 1997; Peacock & Ho, 2003; Phillips, 1991; Sarjit & Salasiah, 1999; Sheorey, 1999).

Griffiths (2003) conducted a study on 348 students, varying in age and proficiency, and asserted that "the most proficient students report frequent use of a large number of language learning strategies" (p. 216). Dreyer and Oxford (1996) added that proficient learners tend to use cognitive, metacognitive and compensation strategies more frequently than less proficient counterparts who mostly display a preference for social ones. Similarly, Bremner (1999) arrived at practically the same conclusion about proficiency and learning strategy use. However, he pointed out that less proficient learners use affective strategies less frequently. Another researcher, Kayad (1999), produced similar results in which the more proficient participants in this study reported using cognitive strategies more frequently in various learning tasks while less proficient counterparts lean towards simpler, less sophisticated strategies. Green and Oxford (1995), in their study, found that cognitive strategies were employed by intermediate level students the most. Similarly, Park (1997) investigated the connection between learning strategies and second language proficiency and discovered a strong correlation between proficiency and learning strategies. Sheorey (1999) was another researcher to find high proficiency levels in English as a second language resulted in more frequent use of learning strategies. Relatively contemporary researchers such as Peacock and Ho (2003), Gan et al. (2004), Lan and Oxford (2003), Lai (2005) and Bruen (2001) also presented similar results through self-reporting inventories.

A second view holds that medium-level proficiency learners employ learning strategies more frequently than lower-level proficiency and higher-level proficiency learners, proposing a curvilinear relationship between proficiency and the frequency of strategy use. Phillips (1991) gathered data supporting this view in a study of 141 university-level Asian students' learning strategy use. The participants were divided into three groups according to their TOEFL scores: lower proficiency, midrange proficiency and higher proficiency. Although she maintains that frequency of strategy use varied in terms of English as a Second Language (ESL) proficiency level, the midrange proficiency level group was reported to be employing learning strategies more frequently than lower proficiency and higher proficiency groups. Another study which presents this curvilinear relationship is by Hong-Nam and Leavell (2006). The participants in this study are 55 ESL students with differing cultural and linguistic backgrounds enrolled in a college. The data reveals that participants who are rated to have intermediate level proficiency in English reported using learning strategies more frequently than advanced and beginner level students.

It is clear from the literature that proficiency and learning strategy use are correlated. The uncertainty is around the nature of this correlation. We cannot discern whether proficiency affects learning strategies or vice versa. Regarding the subject of which proficiency level employs learning strategies more frequently, most of the studies advocate that learning strategy use is directly proportionate to language proficiency, which means the more proficient the learners are, the more frequently they will employ learning strategies (Bremner, 1999; Bruen, 2001; Chamot, 1995; Chamot & Kupper, 1989; Dreyer & Oxford, 1996; Gan et al., 2004; Green & Oxford, 1995; Griffiths, 2003; Gunning, 1997; Kayad, 1999; Lai, 2005; Nambiar, 1996; Park, 1997; Peacock & Ho, 2003; Phillips, 1991; Sarjit & Salasiah, 1999; Sheorey, 1999). However, there are a few studies which claim a curvilinear relationship between proficiency and learning strategies (Hong-Nam & Leavell, 2006; Phillips, 1991). In these studies, it is concluded that medium-level proficiency learners use learning strategies more frequently than both lower-level proficiency and higher-level proficiency learners.

METHODOLOGY

Design

This study follows a 'survey study method plan'. A survey design method is used to gather data for a "quantitative description of trends, attitudes, and opinions of a population, or tests for associations among variables of a population, by studying a sample of that population" (Creswell & Creswell, 2017, p. 207). In the current study, the participants were given reading comprehension tasks in two different languages, Turkish and English. Each reading comprehension task consisted of a text and 10 multiple-choice items. After the tests, Learning Strategies Determining Scale (Güven, 2004, 2008) was completed by the participants in order to obtain data on participants' learning strategy use in both languages.

The aim of the study is to determine whether age, language difference, and language proficiency have an effect on the learners' choice and use of learning strategies. This study seeks to answer the following research questions:

1. Do the learning strategies employed by the freshman students in the Department of English Language Teaching change when working in their mother tongue, Turkish, to when working in English as a foreign language?
2. Do the learning strategies utilized by the 6^{th}, 7^{th} and 8^{th} graders change when working in their mother tongue, Turkish to when working in English as a foreign language?
3. Does age play a role in the choice of the learning strategy?
4. Does proficiency play a role in the choice of the learning strategy?

5. Is there a relationship between strategy use and reading comprehension test scores?

Participants

In this study, the participants are divided into two groups which differ in age and English language proficiency. Table 2 presents the profile of participants:

Table 2. Participants

Group	Gender	N	English Proficiency	Age
University Students	Male	46	C1 or above	18-19
	Female	51		
Secondary School Students	Male	54	A2	12-14
	Female	52		

The sampling method employed in the selection of the participants is convenience sampling from nonrandom sampling methods (Fraenkel & Wallen, 2006). Participants in the first group are 97 Turkish freshman year students in the 2018-2019 academic year, all from the English Language Teaching Department. Those in the second group are 106 Turkish students from two secondary schools. These students were selected from the 6th, 7th and 8th grades of the 2018-2019 academic year. Thus, the total number of participants is 203.

Table 3 displays the number of participants who completed the survey:

Table 3. Number of students surveyed

Group	Learning Strategy Scale	N
University level (higher proficiency)	Turkish	94
	English	
Secondary school level (lower proficiency)	Turkish	105
	English	

One of the comprehension tests completed by a secondary school student and two by university students had to be omitted due to some errors in their completion. Table 4 shows the final number of participants in the comprehension tests:

Table 4. Final Number of Test-Takers

Group	Comprehension Test	N
University level (higher proficiency)	Turkish	95
	English	
Secondary school level (lower proficiency)	Turkish	105
	English	

The 5th graders in secondary schools were not included in the study because the curriculum for English language teaching determined by Turkish Ministry of National Education for the 5th grade is limited to A1 level. The reason for the inclusion of the 6th graders, on the other hand, is that the 6th grade functions as a transition grade to A2 level in terms of English language proficiency. The proficiency level of the 7th and 8th grades is determined as A2 by the English language teaching curriculum of the Turkish Ministry of National Education (Turkish Ministry of Education, 2018). Proficiency level of freshman students at English Language Teaching Department is accepted as C1 and above according to CEFR criteria (Council of Europe, 2001).

Instruments

There are two different age groups in this study. To adequately address the two groups, two 5-point Likert scales are used. Both scales aim to measure the participants' frequency of learning strategy use. The first scale is Learning Strategies Determining Scale by Güven (2004). This scale is designed to address older learners' strategy use by the author, so it is given to the older group of the current study, the university students. It consists of 39 items and its Cronbach alpha reliability coefficient is .90 (Güven, 2004).

The second scale, developed to address younger learners' learning strategy use, is a revised version of a former scale by Güven (2008). The revised version comprises 35 items instead of 39 and the descriptors are simpler, shorter and clearer. The Cronbach alpha reliability coefficient of this questionnaire is .87 (Güven, 2008). Both scales measure five different strategy groups. The strategy groups are listed as rehearsal strategies, elaboration strategies, organizational strategies, comprehension monitoring strategies, and affective-motivational strategies. The latter scale was also used in various studies to determine the learning strategy use of participants at secondary school level (Arslan et al., 2017). Both groups complete the appropriate inventory to their age group only once, rendering the inventories employed by the current study "cross-sectional" surveys (Fraenkel & Wallen, 2006).

Two reading tests were devised to obtain the achievement scores for the participants in reading comprehension in English and in Turkish. Each test included a text and ten multiple-choice items. Article-style, informative texts were preferred over other styles since the main aim was to convey information and determine how much of the text was understood by the participants. Articles which were too challenging for the lower proficiency group, and those which were too simplistic for the higher proficiency group, were eliminated. The Turkish article had a Flesch-Kincaid readability test score of 52.5 while the English article was rated to have a score of 74.1, meaning the English article was relatively easy to read. The questions aimed to encourage the students to employ strategies as well as help them reflect on the learning strategies they usually use. The tests required almost no interpretation and were prepared in order to locate information easily

obtained from the texts. The supervisor's opinion on the items and the texts was taken for the validity of the tests. Internal consistency of each test was assessed individually through the split-half method. The Spearman-Brown coefficient for the Turkish test was found to be .73. The English test, proving to be slightly more reliable, showed a Spearman-Brown coefficient of .86.

The current study, given the reading comprehension tasks involved, favors Weinstein and Mayer's (1986) taxonomy since there is no need to assess social learning strategies for this particular task, and no need to classify the strategies employed by the learners as language learning strategies. The data collection instruments selected are also based on the same taxonomy and take a broader approach to learning strategies. The Turkish context is a further rationale for utilizing Güven's (2004, 2008) Learning Strategies Determining Scales over other scales. Finally, neither the taxonomy nor the inventory includes social strategies which are believed to be too elusive for an inventory to determine (Hajar, 2019).

Procedure

The participants were given reading comprehension tasks in two different languages, Turkish and English. Each reading comprehension task consisted of a text and ten multiple-choice items. To complete the reading of the Turkish text and answer the questions, the participants were given 20 minutes. After the test, participants were given 25 minutes to complete the Learning Strategies Determining Scale (Güven, 2004, 2008) about their learning strategy use in the Turkish language. The same steps were then repeated for the English language reading comprehension task following a 15-minute break. Table 5 outlines the procedure:

Table 5. Procedure of the Survey Study

Steps	Actions	Time
1st	Administration of the Turkish text and answering 10 multiple-choice comprehension questions.	20 minutes
2nd	Participants fill in the Learning Strategies Determining Scale (Güven, 2004, 2008) according to their strategy use in Turkish language.	25 minutes
3rd	Break	15 minutes
4th	Administration of the English text and answering 10 multiple-choice comprehension questions.	20 minutes
5th	Participants fill in the Learning Strategies Determining Scale (Güven, 2004, 2008) according to their strategy use in English language.	25 minutes

Data Analysis

The current study yielded two types of data; test scores and values from the five-level Likert items. The results obtained from the comprehension tests were used to determine a mean score for each group's performance in Turkish and in English. Each scale then produced data on a set of five learning strategy groups: rehearsal, elaboration, organizational, comprehension monitoring, and affective and motivational strategies. A mean of frequency for general learning strategy use was also obtained by adding together the means for these five individual strategy groups. Since there were two inventories and two groups in the study, the total number of data sets to be correlated was 24. Each set was then correlated with its corresponding set from other language and/or other age group. Twenty-four individual T-tests were performed to reveal the correlations between variables.

The 1st, 5th, 9th, 13th, 17th and 21st T-tests are for determining the differences between the frequency of learning strategy use in Turkish and English by university level students. The 2nd, 6th, 10th, 14th, 18th and 22nd T-tests are performed in order to determine the differences between the learning strategies employed in Turkish and in English by secondary school level students in terms of frequency. The 3rd, 7th, 11th, 15th, 19th and 23rd independent variable tests are conducted to compare the frequency of learning strategy use by university level students and secondary school level students in Turkish. The final six T-tests, the 4th, 8th, 12th, 16th, 20th and 24th, determine whether there are any differences between the frequency of learning strategies employed by university level students and that of secondary school level students in English.

A further data analysis technique used was the Pearson's correlation test. The correlation tests were conducted in order to determine the relationship between age and learning strategy use and to investigate the relationship between learning strategy use and the reading test scores.

RESULTS

Language and University Students' Learning Strategy Use

This section answers the first research question. Six independent-samples T-tests were conducted to compare university level participants' reported use of learning strategies in Turkish and English. Table 6 displays the results:

Table 6. A Comparison of University Students' Learning Strategy Use in Turkish and in English

Use of	Language	*n*	M	SD	T	df	p
Learning Strategies	Turkish	94	119.25	14.20	-1.41	186	.16
	English	94	122.28	15.22			
Elaboration Strategies	Turkish	94	37.14	5.25	-1.33	184	.18
	English	94	38.15	5.01			
Affective Strategies	Turkish	94	27.18	3.29	-.81	186	.41
	English	94	27.58	3.42			
Comprehension Monitoring Strategies	Turkish	94	21.59	5.83	-1.39	186	.16
	English	94	22.79	5.97			
Organizing Strategies	Turkish	94	18.87	3.66	-.69	186	.48
	English	94	19.25	3.83			
Rehearsal Strategies	Turkish	94	14.63	3.63	-.09	186	.92
	English	94	14.68	3.86			

There was not a significant difference in the scores of university students for reported frequency of learning strategy use in Turkish (M=119.25, SD=14.20) and reported frequency of learning strategy use in English (M=122.28, SD=15.22) conditions: t(186)= -1.41, p= .16. The frequency of strategy use was similar in both languages. The frequency of rehearsal strategies (p=.92) was found to be very similar in both languages. Comprehension monitoring strategies (p=.16), on the other hand, showed a slight difference between the two languages. Listed from the most similarly employed strategies in Turkish and in English in terms of frequency to the least similarly employed strategies, the learning strategy groups are rehearsal strategies (p=.92), organizing strategies (p=.48), affective strategies (p=.41), elaboration strategies (p=.18) and comprehension monitoring strategies (p=.16).

Examining the mean frequencies of learning strategy use, participants reported slightly more frequent use of learning strategies in English (M=122.28) compared to Turkish (M=119.25). This trend was apparent in every strategy group. In summary, university level participants utilize learning strategies slightly more frequently in English, and there was no evidence that learning strategy use differed from language to language.

Language and Secondary School Students' Learning Strategy Use

A set of six independent-samples T-tests was employed to examine the relationship between secondary school students' reported learning strategy use in Turkish and in English. Comparing strategy use in both languages will provide information to respond to the second research question which focuses on the change in learning strategies

depending on the language for secondary school students. The data relating to this research question is presented in Table 7:

Table 7. A Comparison of Secondary School Students' Learning Strategy Use in Turkish and in English

Use of	Language	*N*	M	SD	t	df	p
Learning Strategies	Turkish	105	130.18	16.88	3.17	189.97	.00
	English	105	121.42	22.30			
Elaboration Strategies	Turkish	105	35.46	6.83	2.68	196.69	.00
	English	105	32.56	8.72			
Comprehension Monitoring Strategies	Turkish	105	29.82	5.71	1.77	195.46	.07
	English	105	28.20	7.40			
Affective Strategies	Turkish	105	28.86	3.08	3.25	203	.00
	English	105	27.22	4.07			
Organizing Strategies	Turkish	105	19.88	4.02	3.45	208	.00
	English	105	17.94	4.13			
Rehearsal Strategies	Turkish	105	15.36	2.77	1.99	184.57	.04
	English	105	14.41	4.03			

There was a significant difference in the results of secondary school students for reported frequency of learning strategy use in Turkish (M=130.18, SD=16.88) and in English (M=121.42, SD=22.30) conditions: t(189.97)= 3.17, p= .00. The two values are distinct from one another, meaning that secondary school students' learning strategy use depends heavily on the language in which the learning task is given. Secondary school students' use of comprehension monitoring strategies (p=.07) did not show significant difference between languages. Affective strategies (p=.00) and organizing strategies (p=.00) employed in Turkish or English do not display any relevance in terms of frequency. Listed from the strategies whose use displayed relevance to those whose use showed difference between languages, the learning strategy groups are found to be comprehension monitoring strategies (p=.07), rehearsal strategies (p=.04), elaboration strategies (p=.00), affective strategies (p=.00) and organizing strategies (p=.00).

Participants reported significantly more frequent use of learning strategies in Turkish (M=130.18) than in English (M=121.42). This phenomenon was observed in every strategy group. The most frequently employed strategy group was found to be elaboration strategies in both languages (M=35.46 in Turkish, M=32.56 in English). The least frequently used strategies in both languages were revealed to be rehearsal strategies (M=15.36 in Turkish, M=14.41 in English). To conclude, it is observed that secondary school students' strategy use changes according to the language they are learning in. The only exception to this finding is comprehension monitoring strategies (p=.07) which seem to be used in both languages at a similar frequency.

Age and Learning Strategy Use

The relationship between frequency of learning strategy use by secondary level students and by university level students in Turkish was explored through twelve independent-samples T-tests. These T-tests intended to answer the third research question on how age influences learning strategy use. Table 8 displays the results:

Table 8. A Comparison of Secondary School Students' and University Students' Learning Strategy Use in Turkish and English

Use of	Language	Age	*N*	M	SD	T	df	p
Learning Strategies	Turkish	12-14	105	130.18	16.88	4.89	195	.00
		18-19	94	119.25	14.20			
	English	12-14	105	121.42	22.30	-.31	180.95	.75
		18-19	94	122.28	15.22			
Elaboration Strategies	Turkish	12-14	105	35.46	6.83	-1.95	192.30	.05
		18-19	94	37.14	5.25			
	English	12-14	105	32.56	8.72	-5.60	169.38	.00
		18-19	94	38.15	5.01			
Comprehension Monitoring Strategies	Turkish	12-14	105	29.82	5.71	10.04	197	.00
		18-19	94	21.59	5.83			
	English	12-14	105	28.20	7.40	5.68	194.96	.00
		18-19	94	22.79	5.97			
Affective Strategies	Turkish	12-14	105	28.86	3.08	3.71	195	.00
		18-19	94	27.18	3.29			
	English	12-14	105	27.22	4.07	-.65	194	.51
		18-19	94	27.58	3.42			
Organizing Strategies	Turkish	12-14	105	19.88	4.02	1.84	197	.06
		18-19	94	18.87	3.66			
	English	12-14	105	17.94	4.13	-2.31	197	.02
		18-19	94	19.25	3.83			
Rehearsal Strategies	Turkish	12-14	105	15.36	2.77	1.57	173.44	.11
		18-19	94	14.63	3.63			
	English	12-14	105	14.41	4.03	-.48	197	.62
		18-19	94	14.68	3.86			

A significant difference was observed in the results of secondary school students' reported frequency of strategy use in Turkish (M=130.18, SD=16.88) and that of university students (M=119.25, SD=14.20); t(195)= 4.89, p= .00). It is clear that the mean frequenciesof strategy use by university students and secondary school students are different from each other. Therefore, the two groups have differing beliefs about how frequently they employ learning strategies in Turkish. This difference can also be observed for comprehension monitoring strategies (p=.00) and affective strategies (p=.00). However, both groups' use

of rehearsal strategies (p=.11), organizing strategies (p=.06) and elaboration strategies (p=.05) do not display significant differences. Thus, university students and secondary school students employ rehearsal strategies (p=.11), organizing strategies (p=.06) and elaboration strategies (p=.05) at similar frequencies.

Secondary school students (M=130.18) reported a much higher frequency of learning strategy use in Turkish than that of university students (M=119.25). Elaboration strategies are reported to be the most frequently employed strategy group by both university students (M=37.14) and secondary school students (M=35.46). On the other hand, there are rehearsal strategies which were the least frequently used strategies by both university students (M=14.63) and secondary school students (M=15.36). When the mean frequencies for the learning strategies are taken into account, each strategy is reported to be similarly used by both groups in terms of frequency, except for the comprehension monitoring strategies (University Lev. M=21.59, Sec. School Lev. M=29.82). It would appear that, in Turkish, younger learners employ learning strategies such as self-questioning, error detection and problem solving more frequently than older learners.

No significant difference is observed between the results of secondary school students' reported frequency of learning strategy use in English (M=121.42, SD=22.30) and that of university students (M=122.28, SD=15.22); t(180.95)=-.31, p=.75. It can be stated that university students and secondary school students employ learning strategies in English at very similar frequencies. From the data, we can also conclude that the frequency for affective strategies (p=.51) and rehearsal strategies (p=.62) did not present any significant difference between the two groups. Employment of elaboration strategies (p=.00), comprehension monitoring strategies (p=.00) and organizing strategies (p=.02), however, display a significant difference and university students appear to employ these learning strategy groups more frequently than secondary school students.

It is clear that university students (M=122.28) use learning strategies slightly more frequently than secondary school students (M=121.42) in English. University students employ elaboration strategies (M=38.15) most frequently in English, followed by affective strategies (M=27.58), comprehension monitoring strategies (M=22.79), organizing strategies (M=19.25) and rehearsal strategies (M=14.68). Similarly, elaboration strategies (M=38.15) are also found to be the most frequently employed learning strategy group by secondary school students for the English language. The other learning strategy groups employed by secondary school students in English, listed from the most preferred to the least are comprehension monitoring strategies (M=28.20), affective strategies (M=27.22), organizing strategies (M=17.94) and rehearsal strategies (M=14.41).

The relationship between age and both groups' strategy use in English is presented in Table 9:

Table 9. Correlation between Learning Strategy Use in English and Age

Variable	1	2
1. Strategy Use in English	-	
2. Age	.046*	-

*p<.05

As observed from Table 9, there was not a significant relationship between strategy use in English and age. Table 10 presents the relationship between both groups' learning strategy use in Turkish and age:

Table 10. Correlation between Learning Strategy Use in Turkish and Age

Variable	1	2
1. Strategy Use in Turkish	-	
2. Age	-.297*	-

* p<.01

Table 10 reveals that there was a significant negative relationship between the two groups' learning strategy use in Turkish and age. Therefore, in their mother tongue, as the age of the learner increases, the frequency of learning strategy use declines. In summary, age influences learning strategy use in the mother tongue, Turkish. In English, on the other hand, both groups' strategy use did not display a significant difference. This finding leads to the conclusion that in a foreign language, age ceases to be a decisive factor in learning strategy use as proficiency is introduced.

Language Proficiency and Learning Strategy Use

Twelve independent-samples T-tests were conducted to determine the relevance of secondary school students' frequency of learning strategy use in English and Turkish to that of university level students'. These analyses aimed to respond to the fourth research question. Table 11 displays the results of the T-tests comparing secondary school students' and university students' learning strategy use in English:

Table 11. A Comparison of Secondary School Students' and University Students' Learning Strategy Use in English

Use of	Proficiency Level	*N*	M	SD	T	df	p
Learning Strategies	University Lev.	94	122.28	15.22	-.31	180.95	.75
	Sec. School Lev.	105	121.42	22.30			
Elaboration Strategies	University Lev.	94	38.15	5.01	-5.60	169.38	.00
	Sec. School Lev.	105	32.56	8.72			
Comprehension Monitoring Strategies	University Lev.	94	22.79	5.97	5.68	194.96	.00
	Sec. School Lev.	105	28.20	7.40			
Affective Strategies	University Lev.	94	27.58	3.42	-.65	194	.51
	Sec. School Lev.	105	27.22	4.07			
Organizing Strategies	University Lev.	94	19.25	3.83	-2.31	197	.02
	Sec. School Lev.	105	17.94	4.13			
Rehearsal Strategies	University Lev.	94	14.68	3.86	-.48	197	.62
	Sec. School Lev.	105	14.41	4.03			

No significant difference is observed between the results of secondary school students' reported frequency of learning strategy use in English (M=121.42, SD=22.30) and that of university students' (M=122.28, SD=15.22); t(180.95)=-.31, p=.75. This result implies that university students and secondary school students employ learning strategies in English at very similar frequencies. From the data, it is possible to notice that the use of affective strategies (p=.51) and rehearsal strategies (p=.62) did not present any significant difference between the two groups. Elaboration strategies (p=.00), comprehension monitoring strategies (p=.00) and organizing strategies (p=.02) show significant differences between university students and secondary school students.

Table 12 shows the results of the T-tests comparing secondary school students' and university students' learning strategy use in Turkish:

Table 12. A Comparison of Secondary School Students' and University Students' Learning Strategy Use in Turkish

Use of	Group	*N*	M	SD	t	df	p
Learning Strategies	University Lev.	94	119.25	14.20	4.89	195	.00
	Sec. School Lev.	105	130.18	16.88			
Elaboration Strategies	University Lev.	94	37.14	5.25	-1.95	192.30	.05
	Sec. School Lev.	105	35.46	6.83			
Comprehension Monitoring Strategies	University Lev.	94	21.59	5.83	10.04	197	.00
	Sec. School Lev.	105	29.82	5.71			
Affective Strategies	University Lev.	94	27.18	3.29	3.71	195	.00
	Sec. School Lev.	105	28.86	3.08			
Organizing Strategies	University Lev.	94	18.87	3.66	1.84	197	.06
	Sec. School Lev.	105	19.88	4.02			
Rehearsal Strategies	University Lev.	94	14.63	3.63	1.57	173.44	.11
	Sec. School Lev.	105	15.36	2.77			

A significant difference was observed in the results of secondary school students' reported frequency of strategy use in Turkish (M=130.18, SD=16.88) and that of university students. It is obvious that the mean frequencies of strategy use by university students and secondary school students are different from each other. This difference can also be noted for comprehension monitoring strategies (p=.00) and affective strategies (p=.00). However, both groups' use of rehearsal strategies (p=.11), organizing strategies (p=.06) and elaboration strategies (p=.05) display similarities. Secondary school students (M=130.18) reported a much higher frequency of learning strategy use in Turkish than university students (M=119.25). Elaboration strategies are used the most frequently by both university students (M=37.14) and secondary school students (M=35.46). By contrast, rehearsal strategies were the least frequently used strategies by both university students (M=14.63) and secondary school students (M=15.36).

The Relationship between Strategy Use and Reading Comprehension Test Scores

Participants' reading comprehension test scores are used in order to determine whether the frequency of learning strategy use influences reading comprehension, the subject of the fifth research question. Table 13 presents participants' test scores:

Table 13. Comprehension Test Scores[1]

Group	Tests	Valid *n*[a]	*n*[b]	M	SD
University Students	English Test	94	97	9.58	0.60
	Turkish Test	92	97	9.70	0.52
Secondary School Students	English Test	65	105	5.53	1.39
	Turkish Test	101	105	7.90	1.24

The test scores indicate that on average university students were more successful in both learning tasks than secondary school students. However, the gap between the scores of university students and those of secondary school students is wider for the English reading comprehension test. Secondary school students left more questions blank than university students. This is most obvious in the English test. Forty secondary school students left one or more questions blank in the English test as opposed to just three university students.

Four Pearson correlation tests were conducted to investigate the relationship between students' learning strategy use and their test scores. The first test was to determine whether there is a relationship between university students' learning strategy use in Turkish and their Turkish test scores. Results are presented in Table 14:

Table 14. Correlation between University Students' Learning Strategy Use in Turkish and Turkish Test Scores

Variable	1	2
1. University Students' Strategy Use in Turkish	-	
2. University Students' Turkish Test Scores	.071*	-

*p=.49

Table 14 shows that there was not significant relationship between university students' learning strategy use in Turkish and their test scores. The second correlation test, shown in Table 15, focuses on university students' learning strategy use in English and their English test scores:

[1] Note. The maximum score is 10.

[a] This value (valid *n* listwise) denotes the number of participants who did not leave any blank questions in the test.

[b] This value denotes the total number of the participants who took the test.

Table 15. Correlation between University Students' Learning Strategy Use in English and English Test Scores

Variable	1	2
1. University Students' Strategy Use in English	-	
2. University Students' English Test Scores	.061*	-

*p=.56

There was not a significant relationship between university students' learning strategy use in English and the students' English test scores.

The third and the fourth Pearson correlation tests concerned secondary school students' learning strategy use and their test scores. Table 16 presents the Pearson correlation test conducted on secondary school students' learning strategy use in Turkish and their scores for the Turkish test:

Table 16. Correlation between Secondary School Students' Learning Strategy Use in Turkish and Turkish Test Scores

Variable	1	2
1. Secondary School Students' Strategy Use in Turkish	-	
2. Secondary School Students' Turkish Test Scores	.054*	-

*p=.58

Table 16 shows that there was not a significant relationship between secondary school students' learning strategy use in Turkish and the students' Turkish test scores. The final Pearson correlation test summary is presented in Table 17:

Table 17. Correlation between Secondary School Students' Learning Strategy Use in English and English Test Scores

Variable	1	2
1. Secondary School Students' Strategy Use in English	-	
2. Secondary School Students' Turkish Test Scores	.31*	-

*p=.001

Table 17 shows that there was a significant relationship between secondary school students' learning strategy use in English and the students' English test scores.

DISCUSSION

Regarding the effect of language on learning strategy use by university students, it was found that holding high proficiency levels in both English and Turkish, university students reported very closely matched learning strategy use for both languages. They employed learning strategies slightly more frequently in English. The reason for this may be the fact that English is the medium of instruction for these participants. They are used to reading English texts rather than Turkish ones. Also, independent sample T-tests displayed no statistically significant difference between Turkish and English across the categories, as Figure 1 shows:

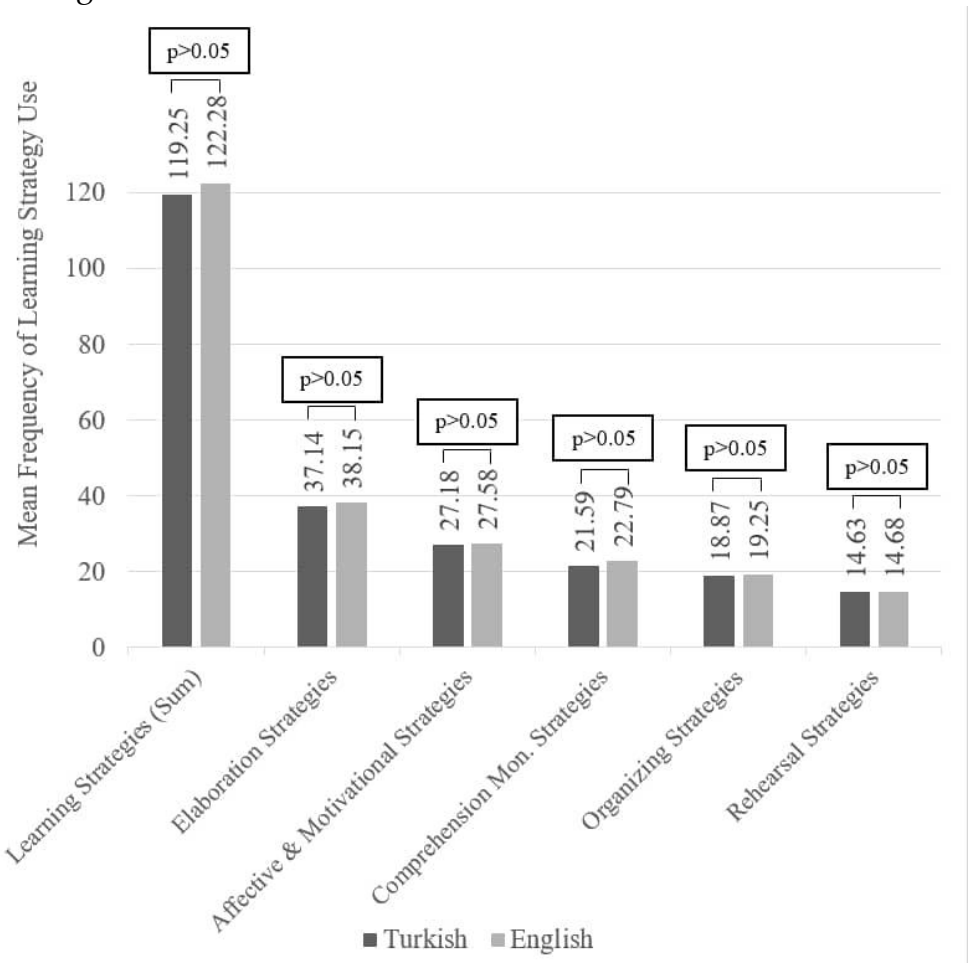

Figure 1. Frequency of University Students' Learning Strategy Use and P-values

The number of learning strategies employed by university students can be deemed virtually equal for both languages. One reason for this might be that university students are able to transfer all learning strategies employed when using their mother tongue to their foreign language thanks to their closely matched proficiency levels in both languages.

Secondary school students on the other hand reported significantly more frequent use of learning strategies in Turkish (M=130.18) than in English (M=121.42). This phenomenon was observed in every strategy group. The most frequently employed strategy group was found to be elaboration strategies in both languages (M=35.46 in Turkish, M=32.56 in English). The least frequently used strategies in both languages were found to be rehearsal strategies (M=15.36 in Turkish, M=14.41 in English). Figure 2 presents secondary school students' frequency of learning strategy use and p-values:

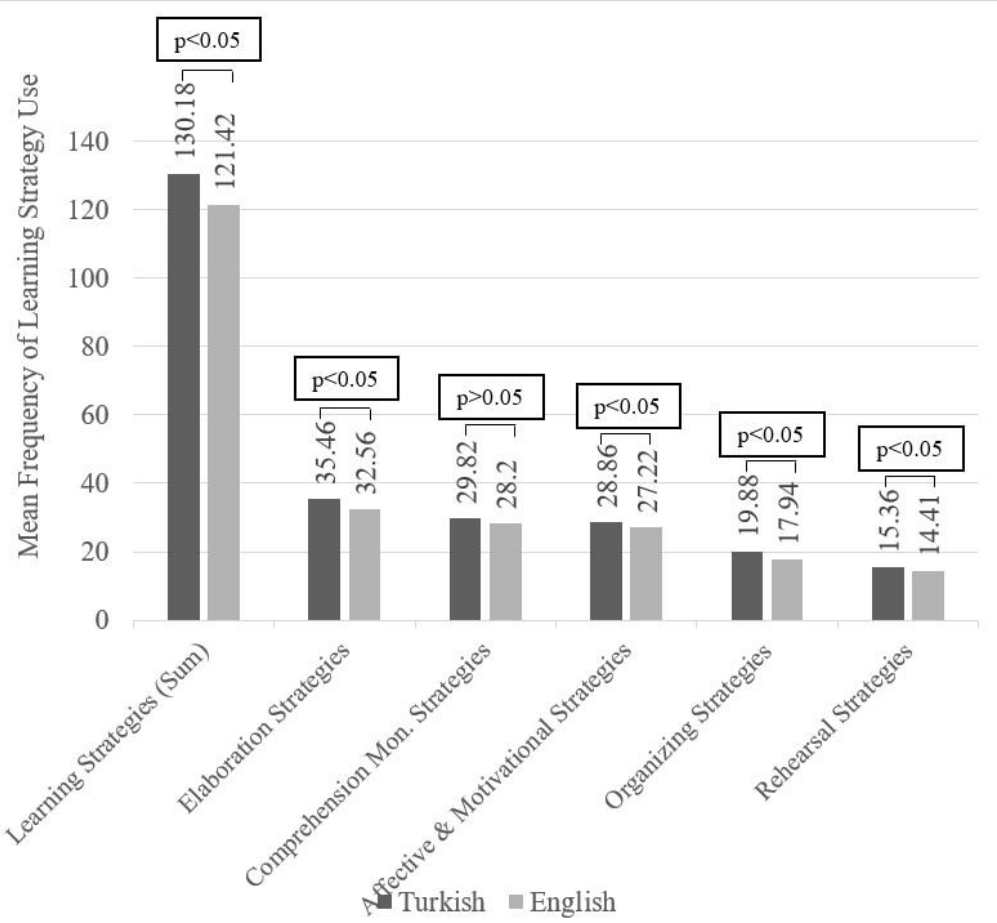

Figure 2. Frequency of Secondary School Students' Learning Strategy Use and P-values

To conclude, it is observed that secondary school students' strategy use changes according to the language they are reading in. They used learning strategies more frequently in Turkish, the language in which they were more proficient. The only exception to this finding was comprehension monitoring strategies (p>.05) which seem to be used in both languages at a similar frequency. These strategies include self-questioning, error detection and problem solving. Due to their nature, they do not require any specific cognitive processes, thus they are found to be readily transferrable to any context. Even in a condition precedent, given that there is a proficiency gap between the languages, the secondary school students had no trouble transferring these strategies.

The pedagogical implication of this study on the age factor is that age neither hinders nor supports the variety of the learning strategies implemented in the learning process as drastically as it is thought since younger age groups are able to use a wide repertoire of learning strategies, including abstract strategies such as cognitive and metacognitive strategies, even more frequently than older age groups. Also, the findings assert the contrary of the view put forward by Gunning (1997). It was found out that there was not a shift from concrete learning strategies, such as affective and social strategies, to more abstract strategies such as cognitive and metacognitive strategies. The results corroborate the study by O'Malley et al. (1985) on adolescents. O'Malley et al. (1985), who state that affective strategies, when compared with other strategy groups, are less frequently utilized by a large margin. However, frequency of cognitive strategy, metacognitive strategy and affective strategy use is very similar in the current study. This difference between studies may be due to the fact that the participants of the current study are young adolescents. Similarly, Purdie and Oliver (1999) state that a group of participants aged from nine to 12 years old used social strategies the least while they frequently employed cognitive and metacognitive strategies, which also complies with the findings of the current study. Age was found to be a factor that has an effect on the frequency of learning strategy use in the mother tongue. However, the same effect was not seen in the foreign language.

The current study contradicts the idea that proficient learners of a particular language employ a variety of learning strategies more frequently during a learning task (Bremner, 1999; Bruen, 2001; Chamot, 1995; Chamot & Kupper, 1989; Dreyer & Oxford, 1996; Gan et al., 2004; Green & Oxford, 1995; Griffiths, 2003; Gunning, 1997; Kayad, 1999; Lai, 2005; Nambiar, 1996; Park, 1997; Peacock & Ho, 2003; Phillips, 1991; Sarjit & Salasiah, 1999; Sheorey, 1999). Instead, the findings propose a curvilinear relationship between language proficiency and learning strategies, similar to the findings of Phillips' (1991) and Hong-Nam and Leavell's (2006) studies. According to this view, average level proficiency learners tend to use learning strategies more frequently than higher or lower proficiency learners. This finding was in contrast to other studies which claimed a linear relationship.

The frequency of learning strategy use was not found to affect reading comprehension. The implementation of learning strategies in the learning process carries great importance in terms of learner autonomy and learning success. It is also widely believed that academic success is very strongly tied to a self-regulated learning process which is achieved by learners through the utilization of learning strategies (Pintrich & Schrauben, 1992; Wenden, 1985; Zimmerman, 1986). However, quantity does not seem to necessarily result in quality. Even if the learners employ a plethora of learning strategies, this does not necessarily mean guaranteed learning success. Failures may stem from the learners' ability to employ the learning strategies correctly (Weinstein & Hume, 1998).

CONCLUSION

The use of learning strategies helps learners through the learning process. There are many variables that affect strategy use such as language difference, age, and language proficiency. The present study, through the comparison of two age groups which differ in proficiency in their foreign language, aims to discover how language difference, age, and proficiency affect strategy use. The procedure followed a survey-study scheme with the participants from both groups given two reading comprehension tests, one in Turkish and another in English. After test completion, participants completed the inventory of the Learning Strategies Determining Scale (Güven, 2004, 2008), and data concerning the strategies used by the participants were gathered. The data were then analyzed with the help of independent variable T-tests and Pearson correlations.

With regard to language difference and strategy use, university students, having high proficiency levels in the foreign language, report similar use of learning strategies in Turkish and English. Rehearsal strategies, organizing strategies, affective strategies, elaboration strategies and comprehension monitoring strategies are used at a similar frequency by this group. Thus, the language difference is demonstrated to have a minimal effect on strategy use because the proficiency gap between their foreign language and their mother tongue is marginal for university students.

Secondary school students' strategy use, on the other hand, varies depending on the language. The strategy use shows differences between Turkish and English, except for the comprehension monitoring strategies consisting of self-questioning, error detection and problem solving. The reason why these strategies are used in both languages at a similar frequency could stem from the ease of transfer due to the simplicity of the cognitive processes underlying them. In other words, the proficiency gap between the mother tongue and the foreign language is the determinant factor which affects the use of learning strategies. The wider the gap, the greater the difference in learning strategy use.

Another focus of the study, age, is discovered to be a factor that has an influence on the frequency of learning strategy use in the mother tongue. However, age does not affect the frequency of learning strategy use in foreign language. Secondary school students report using cognitive and metacognitive strategies more frequently than affective strategies (O'Malley et al., 1985; Purdie & Oliver, 1999). University students, on the other hand, employ elaboration strategies, affective-motivational strategies, and comprehension monitoring strategies respectively. This demonstrates that the older learners employ concrete and simpler strategies such as affective strategies and, in the same way, the younger learners are able to use abstract and rather complex strategies such as cognitive and metacognitive ones. Therefore, age plays a role in the use of learning strategies but not in the ways expected as per Gunning's (1997) study which

proposes a shift from concrete to abstract. Learning strategy use in this study did not follow such a sequential pattern for age.

There is a curvilinear relationship between the language proficiency and learning strategy use (Hong-Nam & Leavell, 2006; Phillips, 1991). It is observed that the frequency of learning strategy use did not necessarily increase in accordance with the proficiency level of the learner.

In this study, secondary school students employed the learning strategies more frequently than university students. However, the comprehension test scores of the former group were significantly lower than the scores of the latter. Therefore, it was clear that frequent strategy use did not enable the secondary school students to be more successful. University students, on the other hand, employing the learning strategies relatively less frequently than the other group still achieved higher scores. As a conclusion, concerning the success at reading comprehension, the effective use of learning strategies bore more weight than the frequency of strategy use.

To summarize, according to the current study, language difference, age and proficiency had an effect on learning strategy use. Also, the performance of the learner in their use of the strategies was found to be of great importance in order to achieve higher reading comprehension test scores.

Suggestions

It is indicated in this study that the learning strategies employed in the mother tongue and the foreign language may differ if the learner does not possess similar levels of proficiency in both languages. Thereby, foreign language teachers should prioritize the teaching of learning strategies to their lower proficiency students alongside teaching the course content.

The reading comprehension test scores of the current study indicated that the frequency of learning strategy use was not proportional to the achievement levels and the Pearson correlation tests revealed that the younger group benefited more from the use of learning strategies in English. This finding suggests that learning strategy instruction would be more beneficial for 12-14-year-old learners with lower proficiency levels. Using the strategies effectively is also important. To guide learners into effective ways of employing the learning strategies, teachers should support their use through the aid of instruction (Dansereau, 1978; Dansereau et al., 1975; Fillmore, 1980; Hosenfeld et al., 1981; Rigney, 1978; Weinstein, 1978). By doing so, less successful learners would be able to keep up with more successful learners.

Reaching a certain age (18-19) and threshold in proficiency (C1 or above) seems to lessen the effect of high frequency learning strategy use. Even though employing the strategies less frequently, these learners were able to achieve higher scores. Therefore, teachers should take note that they do not need to prioritize learning strategy instruction

at this level. It is advisable to create learning opportunities for these learners where they can take advantage of the learning strategies which they masterfully use. While teaching 12-14-year-old learners with lower proficiency levels, the foreign language teachers should place importance on teaching learning strategies. According to this study, these learners tended to use the learning strategies more frequently and got the most out of them. For learners, using the strategies which best align with their own preferred ways of learning may be the most effective action to be taken in a learning situation. With the aid of learning strategy training, the aim of the teacher should be helping the learners discover as many learning strategies as they can, and learners should seek out the strategies which work best for them.

As a consequence, language difference, age and proficiency should be taken into consideration as elements which could highlight learner deficiencies with regard to their learning strategy use. For further research, another age group could be included in order to collect more data on age, proficiency and learning strategy use. To conclude, learning strategy training is particularly useful for young learners with lower proficiency levels but may not have a such notable effect on older learners with high proficiency levels.

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