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KABUL VE ONAY

Serap ARİ tarafından hazırlanan "İngilizce'yi Yabancı Dil Olarak Öğrenen Türk Lise Öğrencilerinin Tercih Ettikleri Öğrenme Stillerini Kullanma" başlıklı bu çalışma, 28.08.2019 tarihinde yapılan savunma sınavı sonucunda başarılı bulunarak jürimiz tarafından Yüksek Lisans Tezi olarak kabul edilmiştir

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dedicated to my amazing mother,

my dear brother,

and my beloved son…

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ÖZET

ARİ, Serap, *"İngilizce'yi Yabancı Dil Olarak Öğrenen Türk Lise Öğrencilerinin Tercih Ettikleri Öğrenme Stillerini Kullanma",* Yüksek Lisans Tezi, Ankara, 2019.

Öğrencilerin öğrenme stillerinin nasıl tanımlandığı uzun yıllardır tartışılmaktadır ve eğitimde kullanılan farklı modeller mevcuttur. Öğrenme stilleri, öğrenmeyi etkileyen önemli faktörlerden biri olarak kabul edilmektedir, bu nedenle, öğrenme stillerinin belirlenmesi, öğrencilerin okul yaşamındaki başarısını artırmak, eğiticilerin motivasyonlarını ve eğitim kalitesini artırmak için çeşitli çalışmalara konu olmuştur. Bu çalışma, bir özel okulda okuyan 9., 10., 11. ve 12. sınıf lise öğrencilerinin tercih ettiği öğrenme stillerini belirlemeyi ve bu öğrenme stilleri ile cinsiyet, sınıf düzeyi ve akademik başarı arasındaki ilişkiyi incelemeyi amaçlamaktadır. Öğrencilerin genel öğrenme stillerini belirlemenin, yabancı dil öğretmenleri tarafından derslerde öğrencileri için kullanılabilecek gerekli verileri sağlayacağı düşünülmektedir. Tüm öğrencilerin öğrenme yeteneğine sahip olduğunu ancak her birinin kendine özgü bir tarzı olduğunu ve bilgilerin edinilmesinin, algılanmasının ve işlenmesinin dört farklı yolun kullanılması yoluyla gerçekleştiğini belirten VARK modeli, görsel, işitsel, okuma / yazma ve kinestetik, öğrenme stillerini belirlemek için kullanılmaktadır. Araştırmamızda VARK Modeli 8.01 versiyonu kullanılmıştır. Verilerin analizinde SPSS yazılımı kullanılmıştır. Çalışmamızın verileri nominal ölçekte olduğundan, verilerin analizinde Chi-Square testi kullanılmıştır. Araştırma sonucunda öğrencilerin en çok tercih edilen öğrenme stilinin kinestetik stil olduğu, cinsiyet, sınıf düzeyi ve akademik başarı ile öğrenme stilleri arasında anlamlı bir ilişki bulunmadığı belirlenmiştir.

Anahtar kelimeler: Öğrenme stilleri, VARK modeli, dil öğrenme, öğrenme stili modelleri

ABSTRACT

ARİ, Serap, *"Using Preferred Learning Styles of the EFL Turkish High School Students",* Master's Thesis, Ankara, 2019.

The way in which learning styles of students are identified has been discussed for many years and there are different models used in education. Learning styles are regarded as one of the most important factors that affect learning; therefore, the determination of learning styles is subject to various studies in terms of increasing students' success in school life, motivation of trainers and quality of education. This study aims to determine the preferred learning styles of 9th, 10th, 11th and 12th grade high school students in a private school and to examine the relationship between these learning styles and gender, grade level and academic achievement. It is thought that determining the general learning styles of the students will provide the necessary data which can be integrated by the foreign language teachers to the lessons. The VARK model, which states that all students have the ability to learn, but each has its own different style, and that the acquisition, perception and processing of the information takes place through the use of four different channel paths: visual, auditory, reading / writing and kinesthetic, was used to determine learning styles. SPSS software was used to analyze the data. Since the data of our study was on a nominal scale, Chi-Square test was used in the analysis of the data. As a result of the study, it was determined that the most preferred learning style of the students was kinesthetic style, but no significant relationship was found between gender, grade level and academic achievement and learning styles.

Key words: Learning styles, the VARK model, language learning, learning style models

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LIST OF ABBREVIATIONS

ELL **:** English Language Learner

CEFR **:** Common European Framework of Reference

SLA **:** Second Language Acquisition

L1 **:** First Language

L2 **:** Second Language

UG **:** Universal Grammar

LAD **:** Language Acquisition Device

ZPD **:** The Zone of Proximal Development

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

1.1. Background of Problem

This study aimed to determine the learning styles that are used by high school students in a private school when learning a foreign language.

It is stated in the literature that students who learn English or another foreign language learn in different ways and often prefer to use what is known as a “preferred learning style”. The literature on the subject is very extensive. The term “learning preferences” is also commonly used to refer to 'learning style'. Learning style can be defined as a special way an individual follows in learning and the way an individual prefers to consider, process information and show learning, habits, strategies or regular mental behaviors of an individual (Pritchard, 2009). If a specific approach to learning is encouraged by a teacher, students with different learning styles have less likely to work and learn in the classroom than others. Therefore, the awareness of learning styles is crucial for teachers. At the same time, learning style awareness helps learners better understand their needs and expectations.

Students face some difficulties while learning a language. In order to learn a foreign language, it is very important that the students determine their learning styles and that the teaching process is adjusted accordingly by the teachers. Therefore, informing the students about language learning style, determining the language styles used by the students and arranging the teaching process accordingly will contribute to the productive and effective teaching process (Tok, 2007). According to Oxford (1990a), language learning styles are used to solve a problem and increase communicative competence in the target language and can be easily taught, renewed and modified by students to adapt to different situations.

Many researches are carried out in order to identify the differences in the ways students perceive, process, organize, solve problems, produce products, motivate and design learning and teaching processes accordingly. Learning styles are one of these research areas. Learning styles are generally defined as “characteristic strengths and preferences of individuals in the process of receiving, retaining and processing information” (Felder and Silverman, 1988). Especially after the second half of the 1900s, the dominant psychological and educational approaches began to suggest that individuals

have different characteristics and that these features should be taken into consideration in the teaching process. Educators and researchers have begun to take into account individual differences with research on the impact of different approaches and models on learning. This understanding of learning is an active mental process, and how people learn concepts and solve problems, how information is kept in mind and how it is remembered and forgotten has become the main subject of research (Woolfolk, 1993).

Learning styles can be defined as individual characteristics and preferences that reveal how students perceive, interact, and react to the learning environment (Veznerdaroglu and Ozgur, 2005).

Chevrier et al. stated that cognitive psychology helps to better understand the role played by the person in the state of learning and that educators want to know the basic learning mechanisms to understand how students can learn better (2000). This information brought up another important point, namely the effort to better understand the individual differences between students. Therefore, learning styles have been added to intelligence and personality factors and have become one of the main research topics of educators and researchers (Chevrier et al., 2000).

Researches indicate that students show the following behaviors when they are taught with their own learning style (Given, 1996):

- Statistically significant increase in positive attitudes towards education,
- Increased acceptance of different self,
- Statistically significant increase in academic success,
- Positive development in class behaviors and discipline,
- More internal discipline in completing homework assignments.

As can be seen, providing an appropriate teaching service according to the learning styles not only increases the academic success of students, but also increases the tolerance for differences, being more disciplined and developing positive attitudes towards teaching. There are also other views on the necessities and benefits of learning styles and the provision of appropriate teaching environments:

- Learning accelerates when learning opportunities are overlapped with the natural tendencies of the individual such as playing, studying and discovering (Given, 1996).

- When learning styles are taught to the students in a systematic way, there is an increase in the amount and recall of the learning in a very short time (Given, 1996).
- Knowing the most appropriate learning style for the individual helps to increase learning power (Askar and Akkoyunlu, 1993).
- If there is a mismatch between the educator's teaching style and the learner's learning style, it has negative consequences for both the student and the teacher. For example, students may get bored, lose their attention, fail in exams, and refuse to attend classes (Felder and Silverman, 1998; Felder and Henriques, 1995).
- The harmony between the students' learning styles and the learning activities carried out in the classroom increases academic success, motivation, attitude towards the course and active student participation (Simsek, 2002).

In addition, knowing learning styles and designing learning and teaching activities accordingly can show that many students who are said to have learning difficulties do not have any learning difficulties and can easily learn.

When language learning is examined in terms of students, it is seen that some factors contribute positively or negatively to learning. The student makes generalizations based on his / her own skills and experiences while learning a foreign language. Personal abilities and experiences are composed of various elements such as student's comprehension ability, language learning ability, attitude towards the teacher, attitude towards the language and the social group and culture that speaks this language, age, personality, mother tongue, educational and cultural level acquired and learning style.

Each student has a different level of comprehension of a language. Therefore, the duration of language learning of students varies from person to person. For the same reason, a single method may not provide the same ease of learning for all students.

Each student's perception and expression skills are not the same and the ability to learn a foreign language is different. Even "standard tests" that measure such phenomena have been established (Carroll and Sapon, 1959; Pimsleur, Sundland and Mclntyre, 1964).

When students learn a second language, they apply different learning techniques and often make connections between what they have just learned and the old knowledge they have already acquired.

The student's attitude towards the teacher can affect language learning to a great extent. Generally, students have some expectations from their teachers that arise from their own experiences. For example, they can expect their teachers to integrate a teaching style that they are familiar with. If their expectations are not fulfilled, they may have a negative attitude towards the teacher and as a result, the success rate in the course may decrease.

Students' positive attitude towards the language they are learning and the social group that speaks that language increases the desire to learn that language and as a result of this, learning process becomes easier. If the student learns the language for a specific purpose and will provide a gain at the end of the learning, the desire to learn that language increases (Gardner and Lambert, 1972). In other words, people who have a positive attitude towards the language learn the second language more easily in a little while.

The attitude of the families to the foreign language affects the student (Gardner, 1973). This effect is observed directly or indirectly. For example, if parents emphasize the benefits of learning a foreign language, if they tell their children to study that language, they will directly affect their children. However, criticizing or praising the society that speaks the language in the conversations between the family indirectly has a positive or negative effect on the child.

The age of the student also affects the language learning. Namely, if the content of the curriculum is not relevant to the age group of the student, learning cannot be very successful. Furthermore, Lenneberg (1967), who examined language learning biologically, argues that the language learning function after the age of twelve turns into an invariant form on the left side of the brain and that the foreign language learned after adolescence could not reach the native language level.

Whether the student is introverted or extroverted is another element that affects language learning. It has been determined that the speaking skills of the introverted students are not developed sufficiently (Naiman, Fröhlich and Stern 1975). Moreover, skills such as writing, reading, listening, speaking and understanding develop more in extroverted people.

Students who do not adopt the life and culture of a society in which they learn the language are less likely to succeed in learning that language (Schumann, 1978). For example, Gardner and Lambert (1972) state that Canadians who have positive attitudes towards French-Canadians are more willing to learn French and this desire gives speed and positive quality to language learning.

If the mother tongue of the students is in the same structural group as the foreign language they have learned, the acquisition of the second language is easier. If it is different, the learning process and efforts will increase because it is difficult to overthrow the worldview shaped by mother tongue (Whorf, 1956), and language learning may become difficult when students are left out of their mother tongue practices. For example, in English, the third singular person, which is indicated with three separate words as female, male and neutral, is expressed in Turkish using one word. A Turkish student, who is not accustomed to making any gender discrimination in terms of the third singular person while speaking Turkish, may misuse the third singular person names while learning English.

To give another example, when the names are used with numbers in Turkish, they do not take the plural suffix. The students have the same tendency in the sentences they have established in English and they can form a sentence like “Three children has arrived.” It also takes a long time for the student to correct such mistakes as a result of mother tongue-based practices (Ekmekci, 1983).

If the student's own culture is not similar to that of a foreign language, the student may have difficulty in learning that language. It may not be interesting for students to learn English structurally without knowing the culture of the foreign language they have learned.

The level of education of the student affects foreign language learning. It can be easier to learn the foreign language equivalents of the ideas, concepts and notions generated in the mother tongue. If they have not developed these notions in their own language, then students have difficulty in learning a foreign language. For example, it is impossible to understand sentences given in a foreign language without knowing what the notions are.

Finally, learning styles are one of the most effective components in the teaching and learning process. According to Webb, one learning style should not be assumed to be better than the other (1975). The styles proposed so far have been described as successful

or unsuccessful by different people at different times. It is important to remember that a single teaching style is not the key to solving all problems. Also, when a style is considered unsuccessful, leaving it completely and applying the proposed new style does not necessarily mean success. Therefore, it has been argued that certain styles will yield better results for certain purposes.

This attitude has also been adopted by educators and it has been seen that the practices have given more positive results (Webb, 1975). Using different styles in different periods in the language teaching process may give better results. These ongoing debates on learning styles are the subject of this research. The main focus of this thesis is on language learning styles used frequently by students, the difference between the intensity of application of these styles according to age and gender, and the models that can be applied in foreign language teaching.

1.2. Statement of Purpose

Learning is an important adaptation and reconciliation process that students do not learn at the same rate and level (Kolb, 1984; Parsa, 2001). In recent years, learning styles have been developed and become one of the most effective approaches to language learning.

In addition to many factors, learning styles can have an influence on the learning process. It is common for students to choose some styles to learn their lessons (Dincer Bicer, 2013; Smith and Dalton, 2005). Since the main mission of teacher education is to train teachers who have the necessary knowledge, attitudes and skills to educate the society, they have the ability to train and are competent, learning styles are a very important area that teachers should know.

Determining the factors that affect learning success has been the subject of many studies, and students' learning styles that express the information flow habits are among these important factors. Learning styles are regarded as cognitive, emotional, and relatively constant physiological behaviors and show the way in which the learning environment is perceived, action and response. Researchers believe that each student has certain preferred styles for understanding, organizing and storing information. Although learning styles are relatively stable, their quality may vary according to development, maturation and environmental stimuli. Some learning theorists believe that learning styles should be consistent with teaching styles in order to achieve maximum success, and that this consistency strengthens students' motivation and academic achievement.

This study was conducted in order to investigate the learning styles of students in the light of related studies. The original value of this study is that it provides information about learning style preferences of high school students who take different course content weights in the same high school.

1.3. Research Questions

The aim of this study is to determine the learning styles of 9th, 10th, 11th and 12th grade high school students. In this respect, the research questions that our study seeks answers are determined as follows:

1) Is there a significant relationship between foreign language learning styles and gender?
2) Is there a significant relationship between foreign language learning styles and grade?
3) Is there a significant relationship between foreign language learning styles and academic achievement?
4) What is the most preferred learning style of high school students who learn English?
5) Can an optimal learning style be identified for high school students learning a foreign or second language?

1.4. Limitations of the Study

Although this study was carried out systematically by taking advantage of the studies in the literature, it is thought that there are some factors that may have an impact on the results of the study and the quality of the study.

1) The research was conducted with the assumption that the students answered the questions sincerely and expressed their real views and perceptions.
2) The research was conducted with the assumption that the questions in the assessment tool revealed the learning styles of the learners.
3) The research is limited to 9th, 10th, 11th and 12th grade high school students studying in a private school. The sample is assumed to represent the universe.
4) The research is limited to the 2018-2019 academic year.

5) The analysis of the data in the research is limited to the statistical methods used.

1.5. Definition of Terms

The following terms are frequently used in the study. Therefore, it is believed that it is important to clarify how these key terms are used in our research to make this study more understandable and clearer.

1.5.1. Language Acquisition

Language acquisition is a process in which individuals perceive and understand a language and produce and use words and sentences to communicate. The processes used in acquiring the first and second languages in language acquisition are very similar. For language acquisition to be successful, meaningful interaction is required in the target language. Speakers are not concerned with their expressions, but also with the messages they convey. However, error correction and explicit teaching of rules are not related to language acquisition (Brown and Hanlon, 1970; Brown, Cazden and Bellugi, 1973).

1.5.2. English Language Learner (ELL)

English language learners (ELLs) are emergent bilinguals that become bilingual through school and / or English acquisition and can continue to work in their mother tongue and in English (Garcia, Kleifgen and Falchi, 2008).

1.5.3. Language Proficiency Level

The concept of language proficiency has been examined by researches and defined in different ways over time. Nevertheless, Chomsky's view is considered to be the most effective step in attempting to define language proficiency: competence and performance (Llurda 2000, p.85). Chomsky considers competence as “knowledge of language” and performance as “actual use of language in real situations” (Bagarić and Mihaljević Djigunović, 2007, p.95). In other words, Chomsky sees the internal knowledge of a language as an entity separate from the actual use of language. Chomsky's opinion of competence, which includes only grammar, was extended by Hymes (1972) to cover the communicative or sociolinguistic aspect of language use (Bagarić and Mihaljević Djigunović, 2007).

Hymes expressed these distinct aspects of language proficiency by referring to the concept of a communicative competence that emphasizes the ability to apply the

grammatical systems of a language in language interactions as well as knowing this knowledge (1972).

Canale and Swain (1980) developed a view on which language proficiency is based on three elements. These three elements are grammar or linguistic, socio-cultural and strategic competences. The first component in this model, grammar proficiency, is equivalent to Chomsky's definition of linguistic competence.

Sociolinguistic competence is defined as the knowledge of using language in social interaction. In case of problems in other competencies, it is stated that strategic skills are used together with verbal and non-verbal communication strategies (Harley et al. 1990, p.9). For example, repeating the transmitted output or re-expressing it to ensure successful communication is an indication of strategic competence.

A more recent definition of language proficiency is provided by the Council of Europe under the Common European Framework of Reference (CEFR) (2001).

Accordingly, language proficiency is the term used for knowledge (acquired through experience and learning), skills, and traits that an individual develops and uses to communicate with others. These qualifications are divided into two categories: general and communicative qualifications (CEFR, 2001).

General competence refers to knowledge, skills, existential competence and learning ability that are considered as language-independent components. Communicative competence relates to language use and is examined from the perspective of linguistic, sociolinguistic and pragmatic competences.

As Canale and Swain (1980) suggested, grammar refers to the grammatical elements of a language. Socio-linguistic competence is seen as the effect of social contracts (for example, being polite to the elderly). Pragmatic competence is expressed as the knowledge of matching linguistic output to a given situation according to interaction norms (CEFR, 2001).

1.5.4. Learning Styles

Learning style is a term that expresses an individual's consistent and highly persistent tendencies or preferences. Styles distinguish one person from others and are seen as general characteristics of intellectual functioning. Therefore, learning styles differ according to individuals (Brown, 2007, p.119).

Learning style investigation is used to analyze cognitive styles and abilities, to foresee performance, and to develop the classroom teaching and learning surroundings (Reiff, 1992; Ehrman, 2001; Ehrmani Leaver and Oxford, 2003). Initially, the educator should be conscious that there are an immense variety of styles in the learning process. Second, the teacher should consider each individual in the classroom separately (Brown, 2001, p.59). In addition, not only teachers but also students need to know themselves. As an individual, one should be aware of his / her own style and determine learning strategies according to these styles (Brown, 2001, p.207).

1.5.5. Learning Strategies

Strategies are specific methods and operating modes of approaching a problem or task and achieving a given result, and designs planned to control and process specified information.

Language learning strategies are "specific actions, behaviors, steps or techniques that students use to improve their own learning" and vary from individual to individual (Sankar, Soundararajan and Suresh Kumar, 2016). Rubin (1987) states that language learning strategies are behaviors, steps or techniques applied by students to facilitate language learning. Strategies that meet these requirements make learning "easier, faster, fun, self-directed, effective and more transferable to new situations" (Ehrman, Leaver and Oxford, 2003).

Language learning strategies are deliberate behaviors and thoughts and involve the analysis and organization of information during learning to enhance understanding. In addition, they vary from simple tasks to more complex tasks according to the student's style (Brown, 2001, p.208; Ellis, 2012, p.705).

O'Malley and Chamot see language learning strategies as acquired skills and state that new knowledge is acquired and stored with the help of comprehensive practices (1990).

1.5.6. Academic Achievement

Academic achievement refers to the average grades of the students. In the grading system of 100, students with a mean of 70-100 are considered to be highly successful, students with a mean of 40-69 are considered as medium successful and students with a 0-40 are considered as low successful and are shown in the Table 1.

In this study, academic performance was determined by taking into consideration the grade point average of the students in the previous academic year.

Grade Point Average	Academic achievement
70-100	High achiever
40-69	Medium achiever
0-40	Low achiever

Table 1: Grade point average ranges and academic achievement

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

In this part of the study, related researches in the literature were included.

2.2. Language Learning

The ability to acquire and develop language skills is unique to humans and distinguishes them from the rest of the animal kingdom. Language allows us to understand the feelings, to exchange ideas, to examine the past as well as to think about the future (Caulfield, 2002).

There are three fundamental elements of the language: (i) phonological that signifies the procedures of linking sounds, (ii) semantic that indicates the rules needed to combine the basic sounds or morphemes into words and sentences, and (iii) syntactic that refers to standards that provide words to be turned into sensible sentences. These elements are typically used in social circumstances. (Pullen and Justice, 2003). In order to communicate effectively while using the language, these subsystems are supposed to be coordinated simultaneously. According to the Russian theorist Bakhtin, people use more than a word exchange when communicating through language: they make a change of consciousness while conveying meaning (Bakhtin, 1981). Russell states that (1940, p.186):

> "The purpose of words, though philosophers seem to forget this simple fact, is to deal with matters other than words. If I go into a restaurant and order my dinner, I do not want my words to fit into a system with other words, but to bring about the presence of food. I could have managed without words by taking what I wanted, but this would have been less convenient."

The discussion in favor of seeing language as a medium of communication that is declared by Russell in a search of meaning and truth (1940) is his commentary is opposed to considering language as an autonomous system that is isolated from the communication function.

According to Kaplan and Baldauf language proficiency is “the ability to use language as a tool to get things done” (2003). In other words, language competence is described as the capability to use a language effectively and appropriately in social conditions (Klein, 1988).

The description of language proficiency highlights sounds, vocabulary forms and grammar rules (phonology, morphology, syntax and semantics), as well as information on the social situations of language use; for example, how to start or end a speech or use formal expressions. As can be seen, the conditions on language proficiency are based on social and cultural norms. Therefore, the term “communicative competence”, which includes language skills, functions of language and social communication situations of language, goes beyond grammatical forms and is used instead of “language competence” (Canale and Swain, 1980).

2.2.1. Second Language Learning

Second language acquisition (SLA) is a relatively new field of study compared to other fields. Before the late 1960s, educators advocated a pedagogy of language teaching about second language learning, supported by behaviorism in the field of psychology. According to this view, the task faced by foreign language learners was to learn new grammar patterns and vocabulary by creating new “habits”. Researchers tried to give thorough explanations of language pairs so that L1's old habits would not interfere with this process by copying or transferring it to L2. Hence, the focal point of the investigation at that time was the explanation of L1-L2 pairings, and little thought was paid to what the foreign language learners really did with the input they acquired, or their actual productions in L2. This case changed as a consequence of the Chomskyan revolution in the field of L1 acquisition in the late 60s. In the context of L2 acquisition, with the exploration of children being highly productive and creative rather than imitating while learning their mother tongue, for the first time, experimenters began engaged with a focus on what the learners produce, especially their inaccuracies (Canale and Swain, 1980).

The second language teaching in the twentieth and twenty-first centuries was shaped within this framework. First, it has progressed from teacher-centered, mechanistic, automated approaches to learner-centered, creativity-oriented, specially designed approaches. Secondly, teachers have left extremely simple ideas about teaching and learning in favor of a more difficult and complex but more realistic perspective based on analyzing the dimensions of the students' learning status. Third, it has become possible

to identify factors that maximize success and minimize failure. Fourth, after a period of close dependence on linguistics and psycholinguistics, these disciplines sought to develop effective language teaching methods to enhance intellectual understanding of scientific tools and the nature of teaching (Girard, 1972; Jakobovits, 1970, 1972; Wilkins, 1972; Smith and Miller, 1966).

Second language learning now emerges as a process, with three interrelated elements for further development: the student's mind and learning styles, the nature of the language and the skill of the teacher (Strevens, 1972).

Oller and Obrecht (1969) have shown that in language learning, sentences are more comfortably learned when situated in a meaningful order. In other words, learning is more efficient when the natural order of expressions in communicative events is preserved.

L2 acquisition is different because it requires that the second language be in the same mind as the first language. Although the first language must be on the mind of the L2 student, the accepted view is that the usage of L1 in the class should be avoided. However, in order to take a more neutral position, teachers should learn about language teaching objectives and methods based on the comparison of L1 and L2 learning rather than independent study of second language acquisition (Cook, 2007).

Even though comprehension cannot assure acquisition, acquisition cannot appear if comprehension does not occur, since the greater number of acquisition processes depend on pupils who produce convenient form-meaning connections in the comprehension process. A satisfactory acquisition process depends on the students' precise interpretation of what a text indicates (Carroll, 2001; VanPatten and Rothman, 2014; White, 1987).

2.2.2. Individual Differences of Language Learners

Language learners differ tremendously in their capacity to become advanced in English or another language. Individual characteristics such as maturation, ability, motive, earlier language learning experience, learning styles, beliefs, culture, gender, and personal supervision can affect the probability of achievement (Hardison, et al., 2012). Our research focused on learning styles which are thought to affect the language learning

process of the students. Before moving on to the main topic of the research, other factors will be examined under subheadings.

2.2.2.1. Age

It is generally confirmed that the language learning processes of infants and adults are diverse and that the age at which learning begins is a clear signal of accomplishment in learning a language. While young children naturally learn their first language with little or no conscious effort, adults often make great efforts to achieve a natural language acquisition level.

The critical period hypothesis states that the development of speech has a biological basis and that the optimal period for the first (including second or subsequent) language acquisition ends in adolescence (Lenneberg, 1967). This hypothesis is widely supported by the scientific research that the results obtained in language learning tend to decrease with age (Shachter, 1996; Oyama, 1978; Hakuta, 2001; and Chiswick and Miller, 2007).

The critical period hypothesis does not imply that the individual's ability to acquire language vanishes as he / she gets older, but reveals that the mechanism by which a child learns the first language through automatic acquisition declines after a certain age (Lenneberg, 1967; DeKeyser and Larson-Hall, 2005). The success of children in learning a second language depends on memory, and the accomplishment of adults depends on analytical skills (DeKeyser, 2000; Harley and Hart, 1997; and DeKeyser and Larson-Hall, 2005).

2.2.2.2. Gender

Cameron (1995) made a distinction among the three models of language and gender: (1) the deficit model, (2) the dominance model and (3) the cultural difference model.

In the deficit model, women are seen as disadvantaged language learners. Accordingly, while men's speeches are accepted as accepted norms, women's speeches are perceived as incomplete (Aslan, 2009, p.9). It is stated that while men use language as a means of acquiring and sharing information, women use it as a way to connect with others (Gascoigne, 2002, p.83).

The dominance model is more radical, as Aslan (2009) suggests. In this model, Block (2002) states that women are seen as relatively weaker than men in an ethno-methodological framework (p.53).

The cultural difference model perceives men and women as belonging to separate but equal cultures that socialize within themselves (Block, 2002). Differences are not negative as in other models. Block (2002) states that according to the cultural difference model, women's speech and communication styles are not lower than men's, but on the contrary, the relationship between the two is partly problematic due to cultural conflict. If communication between women and men breaks, this is due to misinterpreting the other side's use of language (Tannen, 1993).

Ehrlich (1997) states that gender is a structure shaped by historical, cultural, social and interactive factors (p.424). In a study conducted by Ehrman and Oxford (1995) with 1200 students, it was determined that women and men used different strategies when learning languages. In addition, Niyikos (1990) states that women begin to speak earlier, and form longer sentences than men, and that their grammar is more accurate, and they have a richer vocabulary.

2.2.2.3. Language aptitude

The concept of language aptitude is globally confirmed, but it is still not thoroughly described. In general, it means an individual's capacity to learn a second or later language and can state a projection of the time required to attain a certain level of language proficiency. Carroll (1981) affirms that language skills consist of four components: phonetic coding ability (the ability to remember and combine sounds with symbols), memory capacity, grammar sensitivity and inductive language learning ability. Since Carroll, many researchers as well as linguists have tried to re-conceptualize linguistic aptitude in different terms.

Skehan (1989) argues that language capacity is composed of three components: auditory ability, linguistic ability and memory capacity. Grigorenko, Sternberg, and Ehrman (2000) argue that language learning ability is strongly determined, among other factors, by the ability to cope with innovation and uncertainty. Dörnyei (2006) states that there is no such thing as language ability, but that some cognitive factors contribute to the student's capacity to learn a second language. Although language aptitude varies among individuals, there is ongoing debate about whether a policy that is intended to be applied to achieve higher language skills will be beneficial to all students.

2.2.2.4. Motivation

Motivation is a crucial factor in almost any kind of learning. Yet, Gardner and Lambert (1972) state that the motivation for language learning is different from others because the task of language learning involves not only the acquisition of knowledge and skills, but also "identifying with members of another ethnolinguistic group." They suggested that the attitude of the individual towards the culture and speakers of the target language will affect the motivation and success of language learning (Gardner and Lambert, 1972).

A later model of language learning divides motivation into two parts: 1) integrative; a positive attitude towards a culture and a desire to join it as a member, and 2) instrumental; the desire for language acquisition for a particular purpose, such as vocational or educational (Gardner, 1985). Although Gardner suggested that students with integrative motivation will be more successful in learning language than those with instrumental motivation, there are many contradictory examples of this theory. For example, integrative motivation is less important when adaptation to a culture or environment is impossible. Correspondently, human beings who are not interested in the culture of the target language can provide a very great level of competence (Leaver and Atwell, 2002).

Cognitive theories about how motivation influences learning discriminate between intrinsic and extrinsic motivation (Deci and Ryan, 1985). Intrinsic motivation comes from within the person and relates to one's identity and sense of welfare. Extrinsic motivation involves external factors such as learning for the sake of rewards. Although total motivation of an individual is commonly both internal and external, it is unlikely that only an external motivation will bring students to high language proficiency levels (Dörnyei, 2003; Noels, 2001; Noels et al., 2000). Motivation alone has an insufficient effect on acquisition outcomes because other factors also influence the likelihood of achievement (Dörnyei and Schmidt, 2001).

2.2.2.5. Acculturation and cultural openness

Schumann (1978) argued that the ability of the student to achieve acculturation, to be more explanatory, the social and psychological integration of the target language with the mother tongue may affect the student's achievement in language acquisition. The social distance between the student and the target language, similarity in culture and the attitude of the mother tongue towards the target language can be shown as examples of

social integration variables. Important research since 1978 indicates that a successful language acquisition process requires acculturation or cultural openness, although the student does not want to be part of the culture of the target language.

Researchers explains that learning another language is linked to positive changes in attitudes and perceptions towards other cultures (Davidson and Lehman, 2005; Robinson, Rivers and Brecht, 2006). Therefore, language learning is associated with higher degrees of cultural openness.

2.2.2.6. Knowing more than one language

Learning a third or subsequent language is different from learning a second language because several factors arise such as language transfer, metacognition, metalinguistic awareness and learner autonomy (Kroll, 2010). Language transfer refers to how a student's knowledge of their current language influences learning a new language. Many studies show that language transfer facilitates learning a new language (Ringbom, 2007).

Knowing more than one language also helps to increase metacognition (the student's ability to think about his or her learning processes) and meta-linguistic awareness (the ability to think about what language means and how it works as an object). Numerous studies have concluded that those who speak two or more languages have higher metalinguistic awareness than monolingual speakers. Jessner (1999), for example, examined problem-solving behavior between bilingual learners of a third language and found that third-language learners' learning strategies differed from those learning second languages.

Learner autonomy (tendency or ability to control their own learning process) is also stronger among those who know two or more languages (Rivers and Golonka, 2009; Klein, 1995). In a study conducted at a university, it was discovered that bilingual and third language learners can control their own learning processes (Rivers, 1996). These learners have mastered a language in less time than monolingual languages, as seen in the tests at the end of the courses. These studies show that those who know two or more languages are generally more successful in later language learning processes.

2.2.2.7. Language learning strategies

Many studies have explored whether more successful language learners perform a given task differently, apply different learning styles or strategies, and whether these strategies can be taught to other students as well.

Since the 1970s, many researchers have tried to conceptualize and categorize strategies used by learners at different levels. Early research was conducted on the basis of observations and interviews with successful students (Naiman, Frönlich and Stern,1978). Subsequent research (Oxford, 1900b, 2011a; O'Malley and Chamot, 1990) developed taxonomy of more detailed learning strategies. Oxford has defined learning strategies as "targeted actions to increase student language proficiency or achievement, complete a task, or make learning more efficient, more effective and easier" (2011b, p.167). In Oxford's original taxonomy, there were six groups of strategies, as shown below:

Strategies	Examples
Memory	• creating mental images
Cognitive	• analyzing and reasoning • practicing (both repetition and natural practice)
Compensation	• guessing intelligently • adjusting the message
Metacognitive	• setting goals and objectives • self-evaluating
Affective	• taking risks wisely • rewarding yourself
Social	• cooperating with peers • asking for clarification or verification

Table 2: Taxonomy of strategies (Oxford, 1990b, p.18-21)

While Oxford's taxonomy is considered to be "perhaps the most comprehensive classification of learning strategies to date" (Ellis, 1986, p.399), "there are perhaps hundreds of such strategies" (Oxford, Lavine and Crookall, 1989, p.29).

As mentioned earlier, studies on language learning strategies have been conducted since the 1970s. For a long time since, the field of language learning strategy continues to be characterized by “no compromise” or “confusion” (O'Malley et al., 1985, p.22) and the concept of language learning strategies is expressed as “fuzzy” (Ellis, 1986, p.529).

Rubin (1975, p.43), one of the earliest researchers in the field of language learning strategies, described strategies as “techniques or tools that learners can use to acquire knowledge.” In 1981 (p.124-126), she defined two types of learning strategies: those that directly contribute to learning and those that indirectly contribute to learning. Direct learning strategies are divided into six types as clarification / verification, monitoring, memorization, prediction / inductive inference, deductive reasoning, and practice. Indirect learning strategies are divided into two groups as creation of production opportunities, and of practice (communication strategies).

As can be seen, the process of establishing terminology, definitions and classification systems for language learning strategies is not easy. In the face of a lack of consensus, which is a feature of the language learning strategy area, whatever term is used, it will inevitably conflict with the other (Griffiths, 2004).

2.3. Language Skills

The four skills in language learning are listening, speaking, reading and writing. These skills are interrelated, and students must master all four skills in order to achieve language acquisition. Specializing in these language skills will determine the communicative skills of the students in the target language (Uma and Ponnambala, 2001). The four basic skills are listening and reading (receptive skills) and speaking and writing (productive skills).

2.3.1. Listening

Listening is an effective and purposeful process to make sense of what is heard (Helgesen, 2003, p.24) and the mental process of constructing meaning from spoken input (Rost, 2002, p.279). While listening, aural or oral text is taken from the ear and sent to the brain, and the brain decodes it. This makes listening a receptive skill. The sub-skills that need to be achieved in listening are (Flowerdew and Miller, 2005):

- Defining the basic facts and details,
- Establishing the relationship between cause and effect,

- Predicting results,
- Inference from contextual clues.

Listening in the early years of childhood allows the child to develop complex information systems to match speeches. Therefore, they develop advanced listening skills. The mother tongue is learned by listening in childhood and then, throughout life, listening forms an important part of the communication process.

According to Burley-Allen (1995), the average time spent on basic skills in the daily communication process is 35 percent for speaking, 16 percent for reading, 9 percent for writing and 40 percent for listening. However, in second or foreign language teaching, listening is rarely taught. Education programs do not pay any attention to how a good listener should be (Flowerdew and Miller, 2005)

L1 listeners have a chance to passively listen for hours before they have to participate in the messages they hear, but L2 listeners are often not so privileged. Participation in second or foreign language learners becomes part of the active learning process. The processes used by L2 listeners may technically resemble the L1 states, but the comprehension and additional processing required by L2 listeners make listening in a second language difficult (Hetherington and Parke, 1999). To help L2 learners acquire a high level of listening, a pedagogical model is needed that takes into account not only the basic factors of the way information is processed, but all other dimensions that can affect the way messages are perceived and processed.

2.3.2. Speaking

Speech is a process of creating meaning that involves producing, receiving, and processing information (Brown, 1994; Burns and Joyce, 1997). Its form and meaning depend on a number of factors, such as participants, common experiences, physical environment and speaking objectives. It usually develops spontaneously but is not always unpredictable. In certain discourse situations (for example, rejecting an invitation) language functions can be defined (Burns and Joyce, 1997). When the brain has an idea, it encrypts it and sends it to the mouth. The mouth produces the spoken text using the articulation system. Therefore, speaking skill is accepted as a productive skill.

The Levelt model of the first language speech (Levelt, 1989; Levelt, Roelofs and Meyer, 1999; Kormos, 2006) states that there are three general stages during the speech as shown in the table:

Conceptualization (Message Level of Representation)

- involves determining what to say
- speaker conceives an intention and adopts a stance
- speaker selects relevant infonnation in preparation for construction of an intended utterance
- the product is a preverbal message

Formulation

- involves translating the conceptual representation into a linguistic form
- includes the process oflexicalisation, where words that the speaker wants to say are selected
- includes the process of syntactic planning where words are put together to form a sentence
- involves detailed phonetic and articulatory planning
- includes the process of phonological encoding, where words are turned into sounds

Articulation

- involves retrieval of chunks of internal speech from buffer
- involves motor execution

Table 3: The Levelt model of first language speech production (Skehan, 2009).

The first stage concerns the development and organization of the ideas to be expressed in a given situation. The second step involves lexical selections to match the previous message and to generate syntax. The third stage is to convert lexis and syntax representation into actual speech (Skehan, 2009).

The situation is different when it comes to speaking in the second language. For the Levelt model, the driver is the mental lexicon, which is a source of information and supports the real-time production of native speakers. However, this mental lexicon of the second foreign language learners has the following characteristics when compared to the mental lexicon of the first language (Skehan, 2009):

- It is smaller; therefore, many lemmas required by the preverbal message are not used.
- It is absent; therefore, when a lot of lemmas are part of the mental dictionary, limited semantic information is available because it is partially represented.
- It is less organized; thus, the connections between the lemmas are weak or alternative forms of expression are less usable.
- It is less unnecessarily structured; since collocational chunks are less accessible, speech needs to be produced more often on the basis of rules-based language.

As a result of all these shortcomings, difficulties arise during the production of speech in second language learning. The smooth process of speech production is

disrupted, as second-language speakers have to find alternative ways to express their meaning, such as styles and strategies, or find ways to use their resources quickly enough to advance 'normal' communication.

2.3.3. Reading

Reading takes place when looking at a text and assigning meaning to written symbols in the text (Aebersold and Field, 1997, p.15), and is called the process of making meaning through dynamic interaction between the reader, the information provided by the written language, and the content of the reading situation (Anthony, Pearson and Raphael, 1993, p.238). The text is received by the eyes and sent to the brain, and the brain decodes meaning. Therefore, reading is seen as a receptive skill.

It is said that up to 80 percent of the world's population can read enough to use basic reading skills in their work and daily life (Elley, 2001; Tucker, 2000; UNESCO, 2007).

Some of these people read at a much higher level, learn new conceptual information from texts, synthesize new information from multiple texts, criticize information in texts, and use their understanding skills to reinterpret texts (Elley, 1992; Kirsch et al., 2002).

In addition, many people in the world can read in more than one language. In almost all cases, these readers have learned to read in their first language (L1) but can also read in the second language (L2, or foreign language), which may be different or more difficult (Grabe, 2008).

Reading is the process of receiving and interpreting information (Urquhart and Weir, 1998, p.22). Comprehension occurs when the reader receives various information from the text and combines it with previously known ones (Koda, 2005, p.4). Reading is an interactive process in which cognitive processes are used, and this form of interaction is very important for fluent reading (Breznitz, 2006).

Reading is a strategic process that uses a range of skills, processes and styles, and requires the reader's efforts to predict, select key information, edit information, summarize, monitor understanding, repair understanding failures, and match understanding output to reader objectives during reading (Grabe, 2008).

2.3.4. Writing

Writing is an important skill in language production. A text written by an effective second or foreign language learner should be consistent, logical, clearly structured, interesting and appropriately arranged with a wide range of vocabulary (Jacobs, 1981; Hall, 1988). According to Levelt, skill in the second language, especially writing, is characterized by a relatively accurate and problem-free understanding of the target language. To understand the structure and acquisition of skill, one must understand the structure of the task (Levelt, 1978).

According to Gordon (2007), in second language learning, literacy education should start early (p.96) before language learners acquire full proficiency in a second language. For example, in elementary schools, students learning English start writing isolated words and expressions and continue to improve their skills by writing short paragraphs about themselves or about topics they are very familiar with (family, home, hobbies, friends, food, etc.). Since many students at this level are not yet talented linguistically and intellectually, it is important to spend time creating written texts. Therefore, writing activities should be based on a parallel text (such as writing about a story being read) and should guide students through simple clues. Language learners are profoundly exposed to the language and practice of the basic structures and vocabulary they need throughout these processes and develop their own styles and strategies (Kurniasih, 2011).

2.4. Basic Learning Theories and Approaches to Language Acquisition

Second language learning is an extremely complex phenomenon. Many people have a second language learning experience and can apply styles and strategies that help them to learn well. However, this process is not fully understood. The internalized language system or the internal mechanisms that process, store and retrieve many aspects of the new language learned cannot be reliably identified (Mitchell, Myles, & Marsden, 2013). When guided by a theory, second foreign language learning can be better understood in an organized and efficient way. A theory is an abstract set of claims about the entities that are important in the phenomenon examined, the relationships that exist between them, and the processes that make up the change. Theories of foreign language acquisition are concerned with how language learning takes place, how young or adult learners learn language, whether it is a critical age for language learning. In this part of

our study, basic theories about foreign language acquisition and approaches about language acquisition are examined.

2.4.1. Saussure's Theory of Structuralism

Structuralist theory states that the components of language are interrelated and construct their meanings through this relationship. The origins of the structuralist language theory have been taken by Saussure (1959).

In the 1950s and early 1960s, theories of second language learning were concerned with the practicality of language teaching. However, the idea that language teaching methods should be justified in terms of an underlying learning theory was well established (Howatt, 2004). In the 1950s and 1960s, language teaching researchers expressed consideration of the theory of learning, which emphasized the practical aspects of language education (Lado, 1964; Rivers, 1968). It was stated that structuralist theory should be taken into consideration regarding the linguistic content of language education. Howatt (2004, p.299-300) summarizes the main features of this theory as follows:

- Learning a language meant acquiring a range of appropriate habits.
- Language courses should be based on a structured curriculum to ensure systematic and step-by-step progress in language acquisition.
- Grammar should be taught inductively through the presentation and application of new patterns.
- The error had to be avoided.

Howatt's summary reveals that language teaching experts and researchers adopted behaviorism, a dominant general learning theory in mainstream psychology at that time.

2.4.2. Skinner's Theory Behaviorism

According to the behaviorist view (Skinner, 1957; Bloomfield, 1933; Thorndike, 1932; Watson, 1924), language learning, as in other learning, occurs with habits. This theory stems from studies in psychology that argue that learning is based on the concepts of stimulus and response.

In case of exposure to numerous stimuli, reinforcement will be provided if these stimuli are successfully responded. Continuous repetition will result in a habit. According to this theory, learning any skill is seen as the formation of habits. When applied to language learning, a particular situation will look for a specific response. In this respect,

the process of learning the first language is as follows: what needs to be done is to learn a series of new habits by responding to stimuli in the environment. However, in second language learning, the process is not so easy, and some problems arise. There are a number of habits already acquired in the first language. Therefore, during the second language learning process, these habits need to be replaced by a series of new habits. That is to say, habits acquired in the first language can be helpful or preventive. If the structures in the second language are similar to those in the mother tongue, learning takes place easily. However, if the structures are different, then the learning process will be difficult. Lado (1957, p.58-59) expresses this as follows with an example of grammar learning:

> "We know from the observation of many cases that the grammatical structure of the native language tends to be transferred to the foreign language ... we have here the major source of difficulty or ease in learning the foreign language ... Those structures that are different will be difficult."

For a student learning a second language, even if the grammatical structure is very similar to his or her own language, it may sound very difficult. For example, the subject, object and verb order of Chinese is similar to Turkish. According to behavioral theory, this situation is supposed to make learning Chinese easier. However, Chinese is a difficult language to learn because it is a tonal language, it is not phonetic, and it requires a lot of memorization (Moser, 1991).

In the late 1960s, there were major developments in both linguistics and psychology. Linguistics saw a shift from structural linguistics, based on the definition of structures, to productive linguistics, which emphasized the rules governed and creative nature of human language.

This change began in 1957 when Chomsky published his highly influential book on syntactic structures. In the field of psychology, the role of the environment in shaping children's learning and behavior shifted towards more developmental views of learning, such as Piaget's theory of cognitive development (Piaget, 1970; Piaget and lnhelder, 1966; Piatelli-Palmarini, 1980). Skinner's behavioral theory was criticized by Chomsky for the following reasons (1957):

1. Creativity of language; even before children learn complex sentences, they can create new sentences that they have never heard before. This is possible, as the behaviorist theory says, not because they memorize word

strings through habits, but because they internalize rules. For example, the fact that children form sentences such as “It breaked” or “Mother goed” clearly shows that they do not copy the language around them, but rather follow the rules.

2. Given the complexity and abstraction of linguistic rules (for example, the rules underlying the use of reflexive pronouns in English), it is surprising that children can master language so quickly and efficiently. It is thought that children do not learn the language they are exposed to by means of habit, especially because of the complexity of some of the structural features of the language.

Subsequent studies of language acquisition have been influenced by different new approaches.

2.4.3. Krashen’s Theory of Second Language Acquisition

Krashen developed his ideas in the late 1970s based on the findings of previous research (1977a, 1977b, 1978). He then expanded his theoretical claims in the early 1980s (Krashen, 1981, 1983, 1985). Although different views were accepted today instead of those at the time, Krashen's work led to the formation of various debates, leading to the development of studies in the field of language acquisition. Krashen based his general theory on five basic hypotheses:

2.4.3.1. The acquisition-learning hypothesis

According to this hypothesis, language acquisition and learning are separate processes. Krashen states that acquisition is the same process that children use to acquire their first language, and that language acquisition is a conscious process that results in knowledge of language (1985, p.1). In other words, according to Krashen, acquisition is the result of natural interaction through meaningful communication that stimulates developmental processes similar to those in first language acquisition, and learning is typically the result of class experience in which the learner focuses on form and learns about the linguistic rules of the target language.

Krashen has been criticized for his vague definitions of what constitutes conscious and subconscious processes, because in practice it is very difficult to test. In Krashen's terminology, students learn the rule, but cannot acquire it unless they use it in the classroom. Another problematic issue was that Krashen claimed that learning would not

turn into acquisition. In other words, grammar acquired / learned in different ways cannot eventually be integrated into a unified whole (Krashen and Scarcella, 1978).

2.4.3.2. Monitor hypothesis

Krashen claims that learning and acquisition are used in very different ways in second language performance. The Monitor Hypothesis states that learning has only one function, and that this function is activated as a monitor to make changes in the form of expression after it is generated by the acquired system (1982, p.15). Acquisition initiates the speaker's discourse and is responsible for fluency. Therefore, the monitor is thought to alter the output of the acquired system, but the utterance is initiated by the acquired system (McLaughlin, 1987, p.24). Krashen believes that learning only contributes to the development of a monitor that does not always work. When focusing on the form is important for students and where the relevant grammar rule is learned consciously, Krashen says that learners can use the monitor to change their output.

Investigating the performance of students (Hulstijn and Hulstijn, 1984) or research to focus on the form (Houck et al., 1978; Krashen and Scarcella, 1978) failed to provide evidence of the use of the Monitor. Similarly, studies to check whether the students who can explain the rules perform better than the students who do not do the same could not provide this evidence (Hulstijn and Hulstijn, 1984).

2.4.3.3. Natural order hypothesis

According to this hypothesis, the rules of the language are obtained in a predictable order and some are expected to arrive early and some to come late. Krashen states that there is evidence that rules are independent of the order in which they are taught in language classes (1985, p.1). The idea of a natural order has received more support from subsequent claims about systematics in its second foreign language syntactic development.

However, subsequent research reveals an interest in the nature of the impact on second language learning and also acknowledges the existence of variability in second language systems. Krashen's natural order hypothesis represents the universality of the theorizing of the 1970s, and concepts such as language transfer and inter-linguistic influence are not included. Moreover, their claims to understand why “natural orders” should appear in the development of the second language are not very explanatory.

2.4.3.4. Input hypothesis

The input hypothesis claims that language learners proceed along the developmental path by receiving and processing intelligible input. The intelligible input is defined as the second language input just beyond the current second language competence of the learner. That is, if a learner's current competence is i, the intelligible input is i + 1 (the input is still comprehensible to the learner). Input that is very simple (i.e., containing only acquired language material) or very complex (i + 2/3/4, i.e., containing linguistic material that is too complex for the comprehension of learners) will not be very useful for language acquisition.

A basic claim of the input hypothesis is that learners do not need to produce second language outputs for their development, and that the appropriate i + 1 input is sufficient to improve the language. Krashen thinks that the input hypothesis is central to the second language acquisition model. According to him, speech is a result of attainment, which cannot be taught directly, but occurs spontaneously as a result of competence through comprehensible inputs. Also, if the input is understood and sufficiently available, the necessary grammar is automatically provided (Krashen, 1985, p.2).

Krashen's input hypothesis has been criticized for some issues such as how to determine the i and i + 1 levels. Moreover, Krashen's claim is a vicious circle: acquisition occurs when the learner receives comprehensible inputs, and in the event of acquisition, comprehensible input is provided. In this case, it becomes impossible to verify the theory because there is no clear evidence of how comprehensible inputs are formed (Liu, 2015).

2.4.3.5. The affective filter hypothesis

As we mentioned in the previous chapter of our research, Krashen believed that i + 1 / comprehensible inputs were essential to language acquisition and learner production was insignificant. However, students are also required to receive this input, which, according to Krashen, is determined by the affective filter. The second language acquisition process reveals that the affective variables of the learners vary according to the strength or level of the affective filters. According to this hypothesis, learners whose attitudes are not optimal for second language acquisition will receive less input (Krashen, 1982, p.31). Krashen's affective filter was a strong proof of the notion that emotions played an important role in second language learning. This idea was then followed by research on motivation, emotion and individual learner differences.

Krashen's concept of affective filter has been criticized for being ambiguous. For example, many conscious adolescents have a 'high' filter because of low self-confidence. According to Krashen's hypothesis, these people should be bad language learners. In addition, self-confident and extroverted adults are expected to be good language learners, but these are not proven cases for all language learners. In addition, the issue of how the affective filter works remains unclear (Du, 2009).

2.4.4. Piaget's Theory of Cognitive Development

Piaget's theory, which is at the heart of the cognitive approach, explains children's language learning through four stages of cognitive development.

This theory of cognitive development had a tremendous impact in the field of education, because before Piaget, children's brains were thought to work in the same way as adults. Therefore, the language learning process of children and adults was believed to be similar. It is necessary to briefly explain what these four stages of cognitive development are.

2.4.4.1. Sensorimotor stage (birth-2 years old)

As the name implies, children who are in the sensorimotor stage use their senses and motor abilities to understand what is happening around them (Hughes, 2001). For example, a baby's sucking behavior is largely reflective and undifferentiated. This movement gradually begins to differentiate, for example, the baby begins to suck the items. In this process of differentiation, this scheme is more sophisticated (Huitt and Hummel, 2003).

In addition, a child begins to switch between sensorimotor intelligence level and representative intelligence at the sensorimotor stage (Kodat, 2002). Representative intelligence allows the child to find hidden objects, for instance. A child aged about one and a half years clearly develops mental representation with the ability to hold an image in his / her mind. The symbolic representation is that the child begins to speak at the age of two. At this stage, the child begins to develop intellectual operations and think (Wadsworth, 1996).

2.4.4.2. Preoperational stage (2-7 years old)

At this stage, the child develops the ability to choose between two simultaneous opposing trends. External supervision and teachings should be reassuring to ensure that

the child's ability to make choices is not excessive. Parents' behavior should not undermine the child's ability to make choices and the sense of autonomy.

At this stage, children can use symbols and language. In this period in which speech is acquired, children try to reason and solve problems with intuition rather than thinking according to logic rules. Children begin to establish relationships between symbols produced through language and the objects they represent. However, they cannot reverse the processes (Brown, 2007). In addition to symbolizing, there is a clear understanding of the past and the future. Sometimes they can be observed to have an imaginary friend.

At this stage, the obstacles to logical thinking are selfishness and transformational reasoning (Taylor, 1996). Selfishness may occur in different forms at different levels of development, but it causes a lack of differentiation in children's logical thinking (Doran and Cowan, 1975).

2.4.4.3. Concrete operations stage (7-11 years old)

The child's cognitive abilities (such as perception, memory) gradually become more appropriate to make realistic assessments. Children at this stage are mature enough to recognize time, place and environment. They have more controlled emotion expressions rather than cries and convulsions.

They gain the ability to reverse, which means that they have acquired the ability to think in two ways. It is the period in which logical solutions are brought to problems. At this stage, children can understand the rules and establish a cause and effect relationship. But they often think about concrete objects and cannot do abstract operations.

At this stage, children use symbols and can also logically change them to solve problems. In addition, children at this stage learn to classify (Hughes, 2001).

2.4.4.4. Formal operations stage (11 years old and over)

According to Piaget, the phase of abstract thought is the last phase of mind development. The child now has inference and judgment skills to solve a problem that they face. At this stage, children can use reasoning and logic to solve all problems (Huitt and Hummel, 2003). Structurally, children use mental processes that adults use. They can see very different aspects of an event and produce information abstractly.

According to Piaget, in adolescence, the maturity of the brain becomes suitable for performing the processes, but its ability to perform abstract processes depends on the environmental demands. Individuals at this stage can now make transactions, make plans and consider an event that has not happened. They may be interested in the structure, philosophy or politics of society and tend to organize a system of values. They can see very different aspects of an event and produce information abstractly.

2.4.5. Vygotsky's Theory of Sociocultural Cognitive Development

Vygotsky emphasizes the role that environment and culture play in learning and development (Wertsch, 1986; Vygotsky, 1994).

The necessity and importance of language acquisition study forms the basis of Vygotsky's theories. According to Vygotsky, 'language acquisition can provide a paradigm for the whole problem of the relationship between learning and development' (Vygotsky, 1978, p.89). In addition, Vygotsky states that it is in vain to try to discuss any form of learning without explaining the language learning process in detail.

2.4.5.1. Language and thought

Language is not an identifiable tool for all people and cultures. The same word may have a completely different meaning depending on the language in which it is used. For example, in English the word "polite" means "kind". However, in the Czech language, the Czechs use the word "sympathetic" as they speak English, meaning "gentle".

This theory of Vygotsky is based on the interaction between language and thought. Vygotsky expresses his thoughts on language with these words: "We always think in a language. Thinking easily explains the social character and shows that our personality is organized according to the same model of social relationship" (Vygotsky, 1997, p.171-172). According to this view, the languages used by people may vary and adapt according to the social situation. For example, the language used by employees in a work environment reflects their thinking. In contrast, reflecting more formal or conservative ideas may require a more refined language. Therefore, in addition to communication, language serves the purpose of establishing and defining people's identities (Clabaugh and Rozycki, 2007).

Vygotsky believes that thought and language development are not parallel, but that in some cases language and thought curves intersect with each other, in some cases they are separate from each other and in some cases they can merge with one another.

Language and thought have different genetic origins and are independent of each other, but they integrate with each other in childhood (Vygotsky, 1962). At this stage, thought is nonverbal and based on mental images. In other words, child language has a social role in the first year of development and there is no sign of intellectual development. At the age of two, language and thought curves intersect with each other and a new form of behavior emerges. Then the child begins to use the language to think and his speech becomes a manifestation of his thoughts.

Unlike Piaget, Vygotsky thinks that thought is not language-independent and, despite its independent and distinct origins, there is a constant interaction between them (Vygotsky, 1962). The development of a child's vocabulary depends on the social context and linguistic resources found in the culture. Children between the ages of two and seven speak about their ideas and thoughts, and this type of speech is called egocentric speech, which results from the inadequacy of the internalization of speech.

The primary role of language is social communication. Therefore, the main talk of the child is social talk. At a certain age, the child's social speech is devoted to a center-centered and communicative conversation, both of which are social (Vygotsky, 1962).

Vygotsky believes that the development of thought occurs through the development of language. The child's social-cultural experience takes place through language and leads to the development of this thought (1962).

In short, from Vygotsky's (1962) point of view, language has many roles, such as abstract concepts and logical reasoning. Another role of language is communication through social interaction, which can be considered as the most important factor in the development of children's language (Taghinezhad, 2017).

Vygotsky's theories of language acquisition, emphasizing the social origins of language development, have gained immense importance (John-Steiner, 2007).

2.4.5.2. The zone of proximal development

The Zone of Proximal Development (ZPD) is defined as “the actual level of development determined by independent problem solving and the potential level of development determined by problem solving” (Vygotsky, 1978, p.86). Vygotsky believes

that learning takes place in the ZPD. The child's ability to solve problems is an important point. This means that children have the potential to solve problems independently or under the guidance of adults or peers (Wood, 1988).

Adults play an important role in helping children realize their mental potential in the learning process. The interaction between children and adults helps the child to perform complex activities. Vygotsky believes that language-related processes are very important at this point.

The linguistic features that play an important role in Vygotsky's theory are that the language is naturally social and that the language is based on context. Therefore, Vygotsky emphasizes that speaking is more important than language since there are non-linguistic signs as well as linguistic signs in speech (Vygotsky, 1962).

Based on the concept of ZPD, adults interact with children through speech. These interactions play a very important role in the cognitive development of children. In Vygotsky's view, social interaction plays an important role in the process of cognitive development (1962).

It is important to control the amount of language and complexity of language input that students are exposed to, not only in the first, but also in the second language acquisition. The amount and level of language input is important because if it is too challenging, it can cause students to get angry and underperform.

Conversely, low language input at a low level will cause the language proficiency not to improve. As a result, it is necessary to have the optimum amount of language input and difficulty. These factors are the reason why Vygotsky's concept of proximal development zone (ZPD) makes sense in theory and practice (Rublik, 2017).

Krashen's i + 1 theory was extended using Vygotsky's ZPD theory (Wesche, 1994). It is probably Vygotsky's emphasis on the role of the environment in the learning process that influences Krashen.

Vygotsky emphasizes both psychological and social impacts on children's learning processes. Regarding this dynamic learning process, Vygotsky states that an interpersonal process has become an intrapersonal process.

The functions in the cultural development of the child are firstly at the social level and then at the individual level; in other words, it occurs first among people (interpsychological), then within the child (intrapsychological). In addition, attention,

logical memory and the formation of concepts takes place in the very same way (Vygotsky, 1978, p.57).

To sum up, Vygotsky reveals that learning begins not only in people's minds, but also in social interaction, which forms a complex, interactive, psychological and cultural process (Vygotsky 1978, p.57). Vygotsky's theories have a significant impact on many areas of research, such as language learning, psychology, anthropology, linguistics, semiotics and learning in general.

2.4.5.3. Mediation

The concept of mediation needs to be discussed in Vygotsky's theory, and it is important because the comprehension of higher mental development processes depends on this concept (Wertsch, Cole and Wertsch, 2007). Mediation refers to the use of cultural signs or means to create qualitative changes in thought. Therefore, mediation means the use of communication systems, which are the tools of interacting thoughts and ideas, to display events. In a nutshell, it makes language a communication system used to express thoughts (Smidt, 2013).

Mediation plays an important role in creating higher mental processes. Higher mental processes, such as logical memory, selective attention, reasoning, analysis, and problem solving, are similar to the learning strategies mentioned earlier (Bialystok, 1981). Higher mental processes include, but are not limited to, types of targeted action, often referred to as language learning strategies.

Mediators in the form of objects, symbols, and individuals transform natural, spontaneous impulses into higher mental processes, including strategies such as problem solving.

In language learning, learning actions can be corrected and changed depending on how learning is mediated. Thus, mediation can be seen as a tool of cognitive change. This mediation can take the form of textbooks, visual material, classroom discourse patterns or teacher assistance (Donato and Adair-Hauck, 1992).

All forms of mediation, by their very nature, become socio-cultural processes. “Change is therefore a social process, and sociocultural mediation is the way change occurs” (Jacob, 1992). Language learning and learning styles and strategies are the results of the mediation process, such as entry into a community, building cultural beliefs and values, or finding a way to communicate with others.

In order to establish a relationship with the environment and to perceive the environment, signs are needed to mediate between the mind and the outside world. This may be possible with psychological means or signs (Wertsch, Cole and Wertsch, 2007). Signs are a combination of meaning and form, such as language (Vygotsky, 1978). From Vygotsky's point of view, mediation plays an important role in the formation of social identity and mediators are tools for the continuous activities of individuals in social, cultural and historical fields.

2.4.6. Chomsky's Theory of Language Acquisition

In language acquisition, Chomsky argues that the psychobiological foundations of language should be explored. In addition, Chomsky focuses on how the children are able to develop unconscious knowledge about the grammatical principles governing an unlimited number of spoken sentences that form their native language (Love, 1990).

Chomsky (1965) claims that the human mind has an innate mechanism called the Language Acquisition Device (LAD), whose function is to initiate, control, and facilitate the process of language acquisition. The three main functions of LAD are as follows:

1) attend to the language the learners are exposed to
2) make hypotheses about the language
3) develop a grammatical system

Another concept that Chomsky (1965) put forward to support the claim that the ability to acquire language is innate is universal grammar (UG), which has a role such as 'limiting the form that individual grammars can take' (Ellis, 1986, p.193). The UG includes "generally valid principles that change across languages as well as parameters that allow for dissimilarities across languages" (White, 2003, p.2). These principles provide a general framework for learners to build a new language they have been learning on the grammar of their own language. They understand the possibility or impossibility of grammatical rules according to UG.

UG helps build the main framework of a language. However, languages contain elements that Chomsky calls the "periphery" that are not "regulated" by UG. These are rules that are borrowed from a language (for example, exceptions to grammar rules such as idioms or proverbs) or from other languages (for instance, irregular plurals of some Greek origin) and therefore may not necessarily follow the grammar system.

2.5. Learning Styles

Learning theories, styles, processes and / or models seek to define universal human characteristics in learning. In general, they aim to explain globally how information is perceived, filtered, stored and remembered by people. Each individual approaches a problem in different ways while displaying the innate human learning characteristics. Cognitive variations in learning a second language, in other words, differences in learning styles emerge (Brown, 2007).

Learning styles are defined as 'cognitive, affective and physiological characteristics that show how learners perceive, interact and respond to the learning environment' (Keefe, 1979, p.4). Skehan defines learning styles as “a general tendency to process information in a specific way” (1991, p.288). The fact that learning styles represent preferred approaches rather than invariant stable characteristics means that students can adapt to various contexts and situations.

Research on learning styles primarily guides teachers to help students undertake their own language learning processes. These researches are very useful for students to become autonomous learners and then to be aware of their styles, preferences, strengths and weaknesses and finally take appropriate measures against the difficulties they face during the second language learning process.

2.5.1. Models of Learning Styles

In this part of the study, learning styles models were examined. The models examined were respectively Dunn and Dunn's learning style model, Gregor's learning style model, Felder-Silverman's learning style model, Grassa-Riechmann's learning style model, Kolb's learning style model, Honey and Mumford's learning style model, and Reid's learning style model. Finally, Fleming's VARK learning style model, which we used in our research, was examined.

2.5.1.1. Dunn and Dunn’s learning style model

Dunn and Dunn considered some biological and individual developmental characteristics in determining their learning styles. Due to these biological and individual development characteristics, differences may occur in the learning environment in the classroom. However, there may be some ways to make teaching suitable for everyone. In other words, some learners learn through hearing, while others learn by watching; however, according to Dunn and Dunn, it is important that the teacher can determine the

ways his / her students learn in the process (Cayci and Unal, 2007; Dunn and Dunn, 1978, 1993). Figure 2 shows the stimuli in the classroom environment. Their contribution to education will be examined:

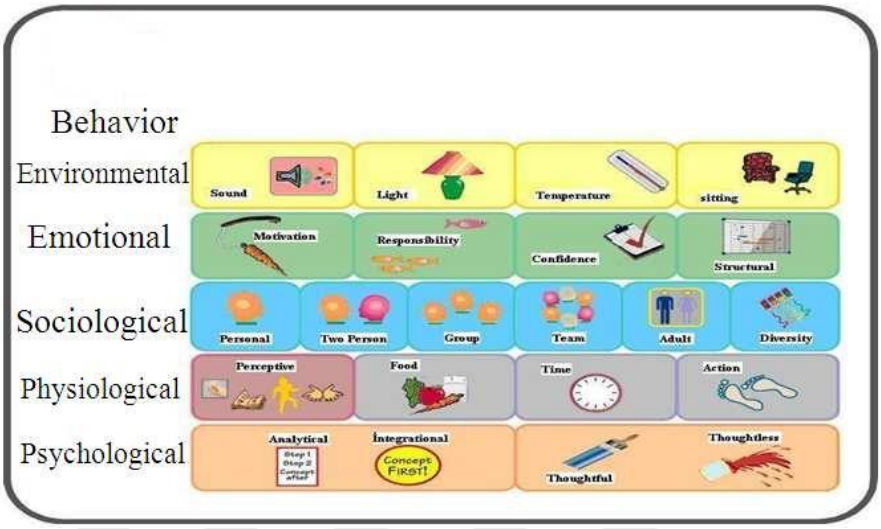


Figure 1: Learning styles of Dunn and Dunn (Kazu, 2009)

- If students say 'sssshhh', if they close their ears to the sound and make a 'be quiet' sign with their hands, this indicates that they want to be alone. For these students, the study area should be kept away from noise. Working in noisy places is not possible for these students and teachers should be aware of this. In addition, teachers should make a seating plan accordingly.
- Initially, some students may become restless when they enter the classroom. Teachers should consider whether their students prefer dim environments. For example, students can narrow their eyes, avoid sun, light, or open windows. The opposite is also possible, meaning that students may prefer an illuminated environment.
- Some students want a relaxed learning environment. For example, if students climb on the table, cross their legs, leave the table uneven or lie down, they probably prefer an informal and comfortable environment. Of course, since educational settings are official institutions, such behavior will not be allowed, and it will be impossible for teachers to control the classroom.
- Some students in the classroom make good use of their visual memory. For example, if students look carefully at the teacher's drawing and focus

more on the pictures than the subject, they are likely to be visual students. If they do not focus on visual and auditory activities, they may probably have a kinesthetic learning style (Ozden, 2005; Kazu and Yavuzalp, 2008).

- If students complain of heat, move around in a hot classroom, or take off their coat in cold weather, they probably like studying in a cold environment. But if they complain about cold and wear extra clothes, they may not prefer the cold learning environment.
- If a student constantly moves, stands, or asks for permission to leave the classroom all the time, he is probably a dynamic student.
- If students use auditory stimuli, that is, they are not interested in drawing and / or choose materials such as cassettes or CD players, pay attention to the details during the speech, remember what they hear, or like dialogs when explaining a topic in the classroom (Kazu, Kazu and Ozdemir, 2005).
- Some students may have habits such as eating during class.

Dunn and Dunn (1978) state that the differences between learning styles stem from the student profiles mentioned above. These differences are sometimes sufficient for academic success. There is a learning environment that each student needs according to their profile.

The importance of learning styles in the process of education and training should be kept in mind. The reasons for this can be summarized and listed as follows:

- When the learning styles of individuals are known, this means that each individual can be perceived as different from the others. In other words, individuals will create their own learning styles. Since the perception frequencies of the brain differ, students will interpret the stimuli in different ways; therefore, when characteristics such as age and gender are known, these differences can be easily recognized. Teachers who are aware of the different learning styles of their students can better serve predetermined educational goals.
- Teachers' recognition of the learning styles of their students contributes to effectiveness. Effectiveness of learning decreases if students learn in a classroom environment that is not appropriate to their learning styles.

- Although education is student-centered today, there is still a trend towards a teacher-centered education system of the past. As a result, students' interests, expectations and needs can be ignored. However, the idea that individuals behave according to their personal needs and are responsible for their learning needs to be kept in mind. Learning is a personal process. For this reason, learning styles should be considered in the education and training process.
- Comprehensive learning cannot take place in an environment where "teacher" is the only active person and students are always passive. For this reason, research on awareness of learning styles has become much more important in education and training process in recent years.

In a language learning environment where different learning and teaching approaches are not used and ordinary and monotonous methods and techniques are used, the majority of students cannot be reached. It should be noted that students are different from each other and learn a language with different methods and techniques. The above points are listed to show how important learning styles can be in second language learning. Learning styles have become a very important research area in the language learning process.

In summary, the basis of the Dunn and Dunn learning styles model describes the external factors and internal factors that affect the individual's internal dynamics (ability) in guiding information (1978).

According to this model “Each individual has its own biological and psychosocial developmental characteristics.” This affects individuals' knowledge, skills, attitudes and ways of learning based on them (Dunn and Dunn, 1978).

2.5.1.2. Gregorc’s learning style model

Gregorc (1982) describes four different and observable behaviors as abstract, concrete, random and sequential tendencies. A combination of these trends is indicative of individual styles. Gregorc believes that these tendencies reflect innate tendencies. According to him, individuals should be able to work outside their natural styles (1982).

Gregorc states that each individual learns differently and has different learning styles. The hidden abilities and characteristics of individuals affect learning styles and learning process. Gregorc model focuses on the cognitive dimension of information

retrieval, processing, storage, coding and decoding. According to this model, perception, regulation, integration and association are important for the learning process and individuals' perception levels and abilities differ.

Gregorc divides individuals into 'concrete and abstract' according to their ability to perceive. In addition, individuals' ability to code and edit their perception is different. Therefore, Gregorc divides individuals' ability to regulate their perceptions into ‘sequential and random’. As a result of individual differences, there is also diversity in perception abilities and learning situations formed in this direction constitute learning styles.

There are four learning styles in the Gregorc learning style model as can be seen in Figure 2. These are listed as follows:

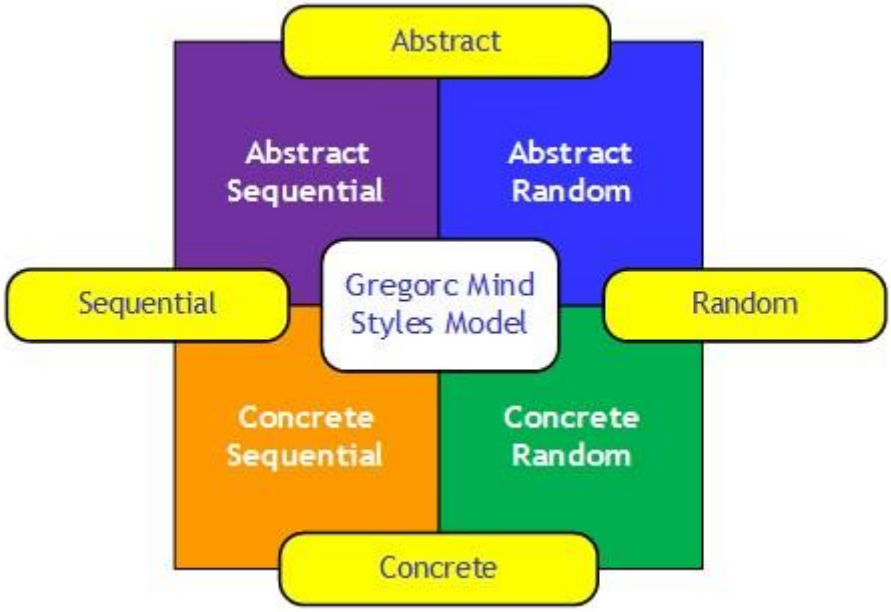


Figure 2: Gregorc’s learning styles model (Pritchard, 2009)

1) Concrete sequential: People who adopt a concrete sequential learning style often like primary learning. In other words, the best learning for people in this group is learning by living and experiencing. The sensory organs of people in this learning style are developed and they want the learning process from simple to complex. In concrete sequrntial learning, the whole is more important than the parts of the subject.
2) Abstract sequential: In abstract sequential learning, individuals form a general framework in their minds about the subject they will learn. General thinking about the subject is important for abstract sequential learning

style, because for these people, symbols and figures are more important than words. They arrange the external stimuli and information in accordance with the frame in their minds and place it in this frame and reach a conclusion about the subject.

3) Concrete random: Problem solving is very easy for individuals who learn in concrete random style. They can easily solve the problems they face in daily life.
4) Abstract random: Individuals who learn with this style can express their feelings and thoughts in a very comfortable way. They perceive the subject and concepts irregularly, and organize them as they wish, and establish relationships between them.

Briefly, Gregorc's learning style is a model that is evaluated within the cognitive dimension such as the way of receiving, processing, storing, coding and decoding the information. This model emphasizes that individuals' ability to perceive and organize information in the mind should be measured.

2.5.1.3. Felder-Silverman's learning style model

While many of the learning style models divide students into several groups, the Felder and Silverman model distinguishes a student's learning style in more detail and differentiates between four dimensions. In addition, according to this model, students with high specific behavior preferences may sometimes behave differently (Graf, Viola, Leo and Kinshuk, 2007).

Felder-Silverman learning style model is frequently used in research on learning styles in advanced learning technologies and is a learning style model that is often used in technology-enhanced learning and designed for traditional learning.

Felder-Silverman learning style model has four dimensions, as can be seen in Figure 3:

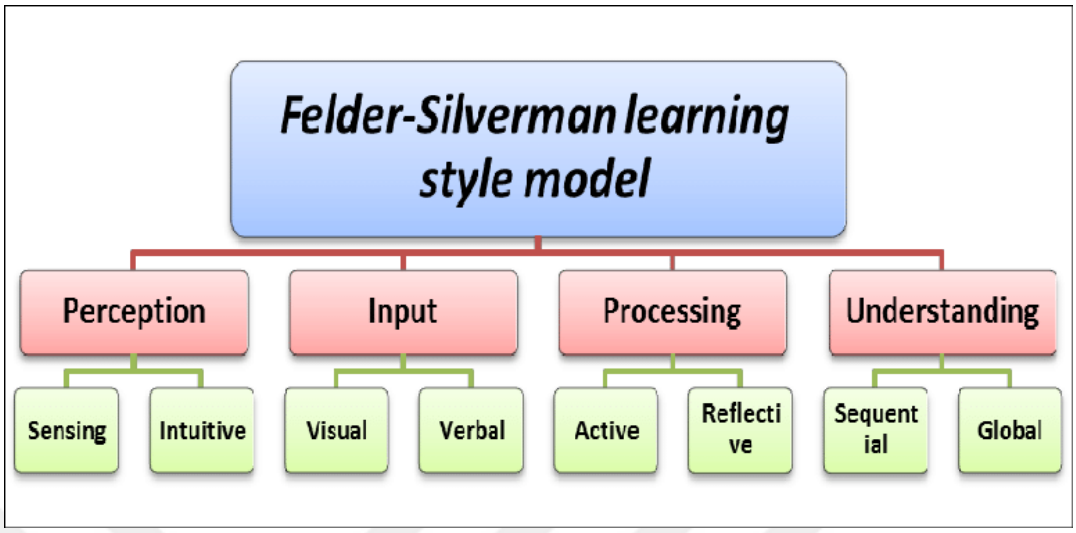


Figure 3: Felder-Silverman learning style model (Abdullah and Malak, 2015)

Learners are characterized by their specific preferences for each of these dimensions (Graf, Viola, Leo and Kinshuk, 2007).

The first-dimension concerns sensing against intuitive learning. Students with a sensing learning style prefer concrete learning materials and like to solve problems with standard approaches and details. In addition, sensing learners are thought to be more logical. They are more practical than intuitive learners and like to relate classroom learning materials to the real world. On the other hand, intuitive students prefer to learn through abstract learning materials such as theories. They can explore possibilities and relationships and tend to be more innovative and creative than sensing learners.

The second, visual-verbal dimension includes learners who remember almost all of what they see and therefore prefer to learn by sight (for example, with pictures, diagrams and flowcharts) and make more use of textual representations, regardless of whether they are written or verbal.

The third dimension relates to the active or reflective processing of information. Active learners learn by studying, practicing and experimenting with learning material. They are also interested in communicating with others and prefer group work. In contrast, reflective students prefer to think about the material. Unlike active learners, they prefer to work alone or perhaps in a small group with one good friend.

In the fourth dimension of the Felder-Silverman learning style model, learners are characterized according to their own understanding. Sequential learners learn in small

and linear progressive steps. These learners tend to think logically. In contrast, global learners use a holistic thinking process and their learning takes place in big leaps. They cannot understand the learning material without seeing the connections, but only after they have learned enough about the material will they see the whole picture. They can solve complex problems and find connections between different domains, but have difficulty explaining how they do it. The whole picture is important for global learners, so unlike sequential learners who are more interested in details, global learners tend to be more interested in general and broad knowledge.

2.5.1.4. Grassa-Riechmann's learning style model

According to Grasha and Riechmann (1996), learning styles should be seen as different roles that students interact with classmates, teachers, and course content (Mehdinezhad, 2016).

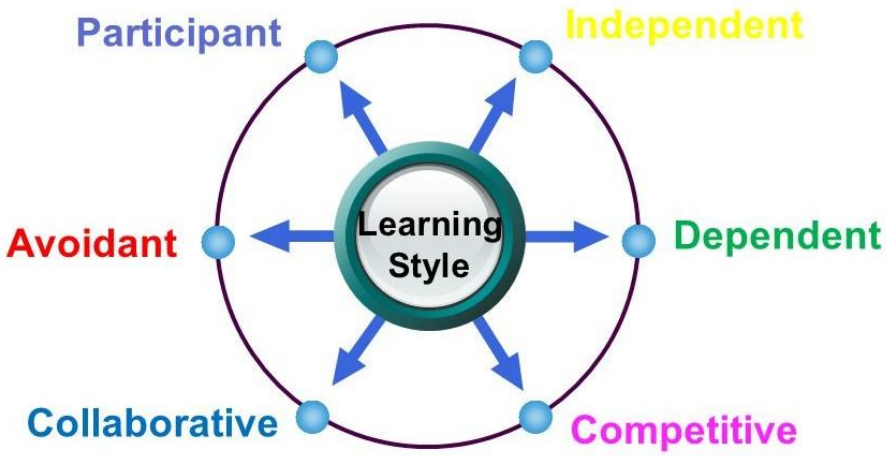


Figure 4: Grasha-Riechman student learning style scales (Boontanom, 2011)

Grasha-Riechmann learning style model states that by integrating individual teaching and learning styles, the nature and quality of the learning experience can be enhanced through the stylistic qualities of teachers and students. Although most teachers have a preferred teaching style, they use a mix of styles, in which interactive, experimental or didactic teaching approaches coexist to attract the attention of learners (Vaughn and Baker, 2001; Grasha, 1994).

In addition, the reasons for using different approaches include the possibility of individual choices for different learning methods such as “visual learning, auditory, kinesthetic or tactile” (Gardner, 2006).

For example, material can be taught through the use of slides supported by an interactive exercise that includes the opportunity for experimental practical learning to transfer knowledge or skills, and then through a small group discussion with questions. Educators, who understand learners’ preferred learning styles, can better identify and list the various teaching strategies they need (Grasha, 1996).

According to Coffield, Moseley, Hall and Ecclestone (2004), the Grasha Reichmann model is an approach that focuses on how personal characteristics such as motivation affect learning strategies, approaches, and learning-related concepts.

The Grasha-Riechmann student learning style scale (Figure 4) has been studied by several studies (Baykul et al. 2010; Novak, Shah, Wilson, Lawson and Salzman, 2006; Vaughn and Baker, 2001; Charkins and O'Toole, 2014; Yazici, 2005). These integrated styles can be used to identify different teaching and learning profiles and to improve knowledge transfer by specific teaching methods (Grasha, 1996).

2.5.1.5. Kolb’s learning style model

Kolb’s Experimental Learning Theory forms the basis of his learning style model. Experimental learning differs from other cognitive learning theories and examines the use of experiences in the learning process (Hasirci, 2006).

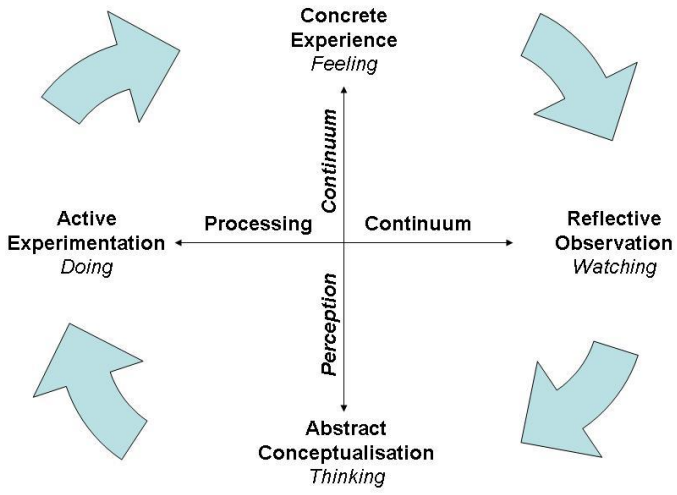


Figure 5: Kolb’s learning cycle (Kazu, 2009)

Kolb initially followed Lewin's experimental learning theory and later developed a learning style model. According to Kolb, learning is the process of being in harmony with the social and physical environment and is different from knowledge. Kolb states that learning occurs by transforming experience into knowledge (Butler, 1988; Felder and Brent, 2005; Reinert, 1976; Boyatzis, Kolb and Mainemelis, 2000; Ozden, 2005; Kolb, 1984). Kolb (1976, 1984) proposes a four-stage learning cycle in which learning is regarded as an interactive process as can be seen in Figure 5:

It is possible for terms in Kolb's learning style to emerge in everyday life, because individuals have various learning styles and perspectives, and some learn by feeling, thinking, watching, or doing. According to Kolb, individuals with an abstract style try to understand the real world by associating this abstract approach with events. A concrete style works through emotions, but a reflective style works by following and watching. In addition, an active style works by doing and experiencing (Adler, Whiting and Wynn-Williams, 2004). Kolb classifies learning styles and methods and defines four types of learning styles. These are as follows (Kazu, 2009):

1) Accommodator: The individual with this style of learning plans the decisions and then applies them. They are open-minded and adapt to changes in the learning environment. They actively learn by doing and experiencing. They can invent something new at any moment.
2) Assimilator: Individuals with this learning style form conceptual models and make reflective observations. In other words, the unique characteristics of these individuals are the creation of conceptual models and the focus on abstract concepts and ideas in the learning process.
3) Converger: Individuals with this learning style rely on abstract conceptualization and concrete experience. Therefore, they need to perceive the whole first and then the parts.
4) Diverger: Individuals with this learning style have characteristics such as thinking, being aware of values and meanings, learning through concrete experience and reflective observation. These individuals observe concrete situations from different angles and form their ideas in an objective and careful learning process. They are also aware of their own feelings and thoughts. Individuals with this learning style have the ability to combine different ideas and perform better when desired.

2.5.1.6. Honey and Mumford's learning style model

Honey and Mumford (1992) define and measure the learning styles based on Kolb's experiential learning model and their model has been proposed as an alternative to Kolb's learning style model (Bontchev and Vassileva, 2012). The four learning styles measured by the learning style model of Honey and Mumford are as follows: activist (corresponding to Kolb's active experimentation style), reflector (corresponding to Kolb's reflective observation style), theorist (corresponding to Kolb's abstract conceptualization), and pragmatist (corresponds to Kolb's concrete experience style).

The characteristics of the learning styles included in the model are as follows:

1) Activists are fond of new ideas and experiments and demand difficult tasks such as practical assignments instead of listening to lectures.
2) Those who have a reflective learning style, namely reflectors, prefer to observe the subjects from different angles and reflect the characters.
3) Theorists seek formalization in the exact opposite of activists and prefer concepts and logical theories.
4) Those with a pragmatist learning style prefer to apply theoretical ideas in the opposite way to reflectors.

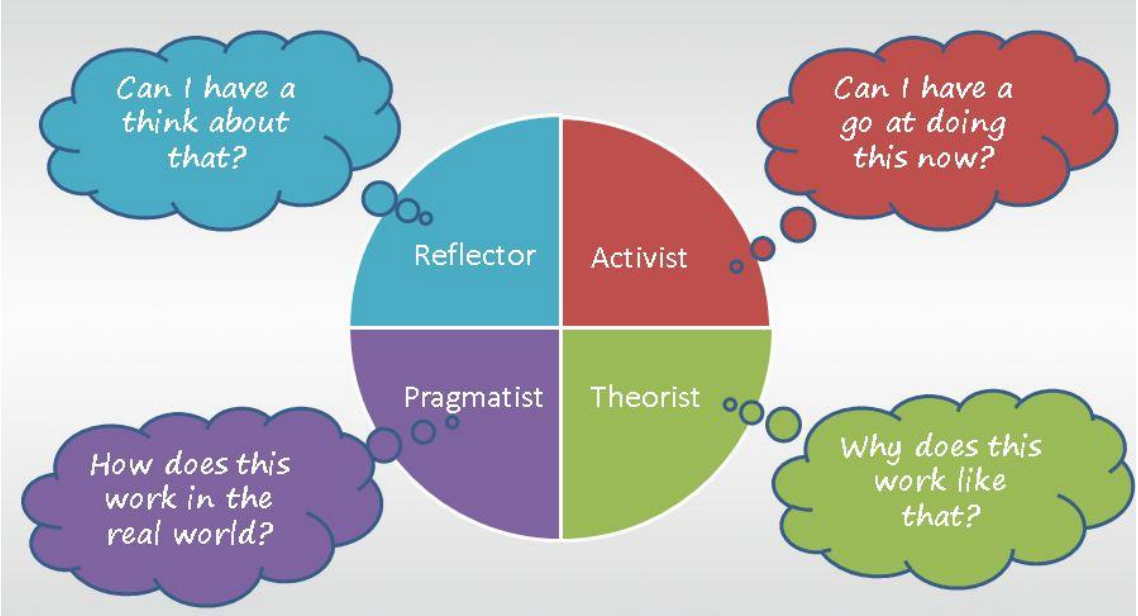


Figure 6: Honey and Mumford learning style model (Bontchev and Vassileva, 2012)

Honey and Mumford's learning styles are widely used in pedagogical strategies including language learning. These levels are determined by a specific style test. The

preference of individuals for a learning style can give information about their behavioral preferences and preference orientations.

2.5.1.7. Reid's learning style model

Reid (1987, p.89) defines learning styles as the use of one or more senses by students in different ways for understanding, organizing and preserving experiences. Reid

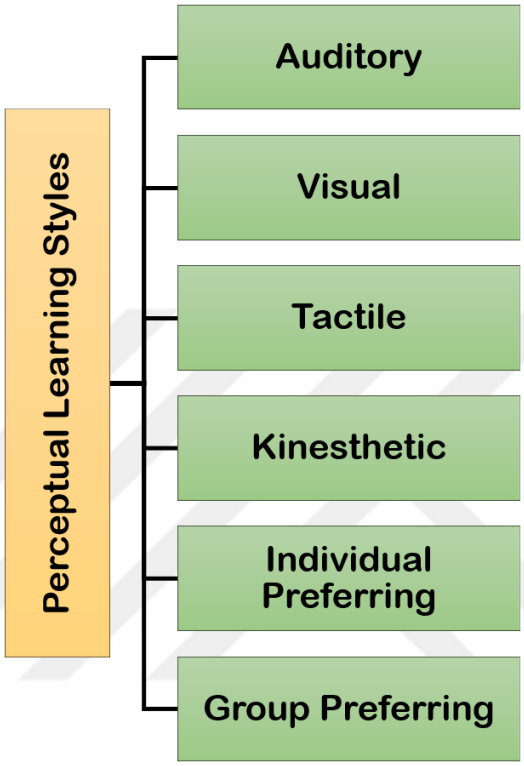


Figure 7: Reid's learning style model (Nurul, Mazni, Sulia, Norhayati and Nor, 2011)

(1995) thinks that learning styles are a personal, natural, habit-acquired and preferred way of acquiring, processing and preserving new knowledge and skills. Moreover, according to her, the differences in the learning processes of the students stem from their individual characters. For example, some students may prefer practical activities, while others may prefer visual presentations. These differences also occur in language learning environments.

In the study conducted by Reid (1987), six learning styles referenced in the perceptual learning model and these styles can be seen in Figure 7. According to Reid, perceptual learning style preference refers to the perceptual channels that learners prefer to learn. These channels are divided into groups as auditory (such as listening to lectures and tapes), visual (such as reading and looking at the study scheme), tactile (such as conducting practical laboratory experiments), kinesthetic (such as learning through

physical activity and movement), individual learning (such as working alone), and group (such as working with others or in a group).

2.5.1.8. Fleming's VARK learning style model

VARK model was proposed by Fleming (2001). According to Fleming (2001, p. 1), learning style is defined as 'the characteristics of individuals and the ways they prefer to collect, organize and think about information'. VARK stands for Visual (V), Auditory (A), Read / Write (R) and Kinesthetic (K). The model can be seen in Figure 8. VARK learning style model developed by Fleming stands out with its measurement tool which is different from other learning style models. With the help of a 16-question questionnaire, it can provide information about the learning style of individuals (Robertson et al., 2011, p. 37).

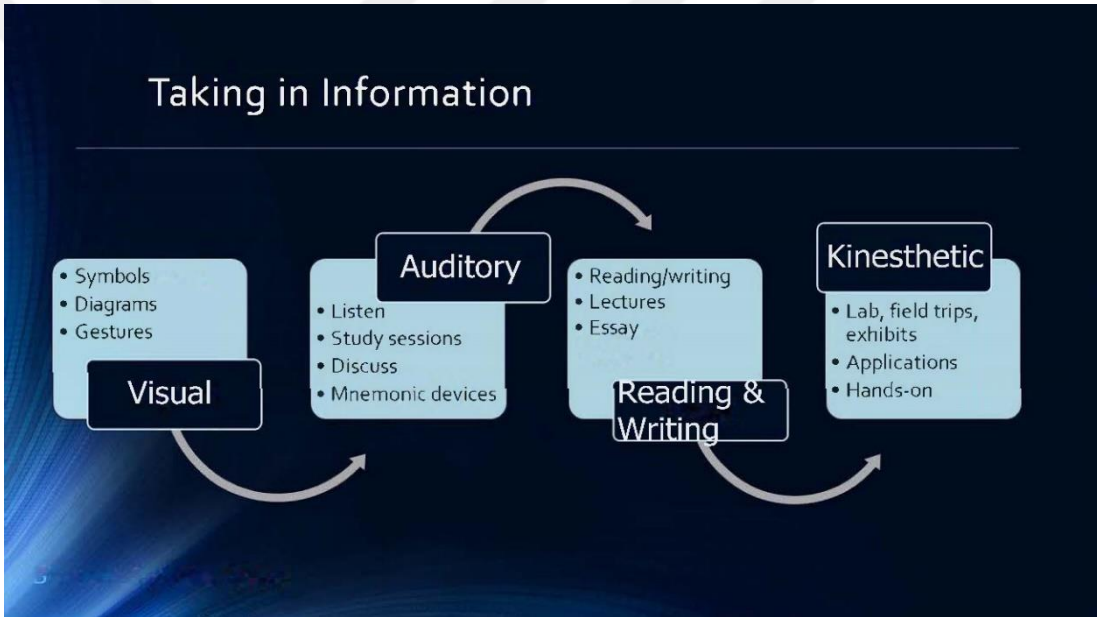


Figure 8: VARK model of learning (Moayyeri, 2015)

According to Fleming (2001), visual learners like to learn through maps, charts, graphs, diagrams and pictures. It is the dimension that expresses the perception of information more easily with symbolic expressions such as drawing, graphics, flowcharts and pictures. Auditory learners like to learn topics by discussing them with teachers and other students and revealing new ideas to others. It is easier for students who use auditory style to perceive information heard or spoken. It is the dimension in which students are more successful in learning by discussing or listening. They usually prefer to use a recorder. Learners through reading / writing prefer learning through essays, textbooks,

definitions, readings and note-taking. It is the dimension in which students prefer to obtain information by reading or writing from printed sources and instructors prefer to present the most information. Kinesthetic learners, on the other hand, prefer to learn by performing experiments in laboratories and with applied approaches. Individuals may also prefer multiple learning styles. It expresses the dimension in which information is perceived by emotions such as touching, feeling, seeing and hearing and tasting in real environment by having more experience. In a way, it expresses learning by doing.

Various studies have been conducted to define the learning styles of second or foreign language students. The VARK model is one of the widely used categories of various learning styles and was used in this study to determine the learning styles of 9th, 10th, 11th and 12th grade high school students.

CHAPTER 3

METHODOLOGY

3.1. Introduction

The aim of this study is to determine the learning styles of 9th, 10th, 11th and 12th grade high school students who are studying in a private school. In this section, the methodology of the study is mentioned. First, information was given about the participants, then the design of the study was presented.

In the design of the study, firstly the procedure was explained, then data collection tools were mentioned, and the findings were written.

3.2. Participants

The study was conducted in a private school in 2018-2019 academic year. The sample consisted of a participant size of 226 students selected using the appropriate sampling method. In addition, the classes of the participants ranged from 9 to 12 in high school, and 51.8% of the participants were female and 48.2% were male. The details of the participants are given in Table 1 below.

			Learning Style				
			Visual	Auditory	Read/Write	Kinesthetic	Total
Gender	Female	f	26	31	25	35	117
		%	22,2%	26,5%	21,4%	29,9%	100,0%
	Male	f	29	23	29	28	109
		%	26,6%	21,1%	26,6%	25,7%	100,0%
Total		f	55	54	54	63	226
		%	24,3%	23,9%	23,9%	27,9%	100,0%

Table 4: Participants

3.3. Design of the Study

In this part of the research, the procedure, data collection tools and data analysis of our study were discussed.

3.3.1. Procedure

This study conducted with 226 high school students attending a private school in 2018-2019 academic year is descriptive research. The research was carried out to determine the learning styles used by 9th, 10th, 11th and 12th grade students in a private school in foreign language learning, and their relations to factors such as gender, grade level, and academic achievement.

In the following sections, the method of collecting and analyzing the data was mentioned. Then, the findings were presented, discussed and the results were written according to these findings.

3.3.2. Data Collection

Data collection tools used in the research were introduced under this title. A sample of the form below was distributed to 226 high school students and the students were asked to choose the most suitable option for them. Students were able to select multiple options for one question. According to their answers to the questions in the form, it was aimed to determine the most preferred learning style of the students. In the second part, personal information form was used to collect information about students' gender, grade levels and grade point averages.

3.3.2.1. The VARK questionnaire (Version 8.01)

As a learning style assessment tool, the VARK survey consists of sixteen multiple-choice questions, each with four options.

All options correspond to the four styles measured by VARK, namely, visual, auditory, read / write and kinesthetic styles. Students can choose one or more options based on their preferred styles when learning new information (Fleming, 2001).

3.3.2.2. Student information and approval form

The students were given a form that required personal information on gender, grade level and term averages of the previous academic year and that they allowed the use of personal data to be obtained in the study.

The ethical requirements of our study were met by obtaining an informative consent from the students and their parents.

3.3.3. Data Analysis

After completing the data collection process from each student, the data obtained were coded, and a dataset were created. SPSS (Statistical Package for Social Sciences) program was used to analyze the data in computer environment. Confidence interval was 95% ($p < 0.05$). The relationships between categorical variables were determined by using Chi-Square statistics.

CHAPTER 4

RESULTS

4.1. Introduction

In this section, the findings obtained from the analyzes performed to test the hypotheses of our study were given.

4.2. Findings

The findings of our study were primarily conducted by examining the frequency and percentage distributions of the answers given by the students to the 16 questions in the VARK questionnaire and recording the data.

Then, the general frequency and percentage distributions of the answers given by the students to the 16 questions in the questionnaire were examined and the findings were determined.

In the next stage, the relationships between gender, grade and academic achievement and learning styles were examined in terms of frequency and percentage and Chi-Square test was used to determine whether significant differences exist.

Finally, quantitative data about the general learning styles preferred by the students were given.

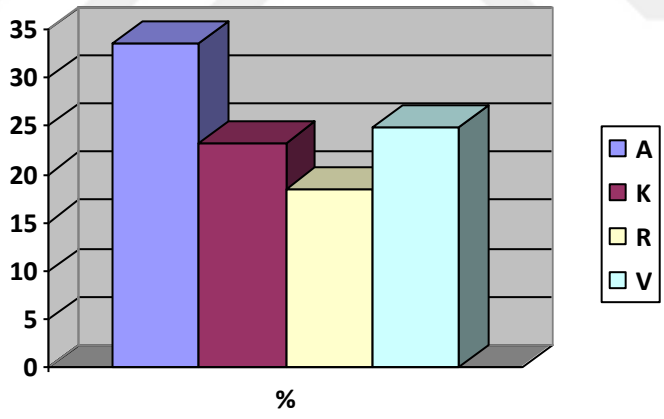
4.2.1. Analysis of the questions of VARK questionnaire

The collected data provide the following results for each question asked through the survey:

Question 1: I need to find the way to a shop that a friend has recommended. I would:

	f	%
A	84	33,6
K	58	23,2
R	46	18,4
V	62	24,8
Total	250	100,0

Figure 9: Frequency and percentage distributions of Question 1



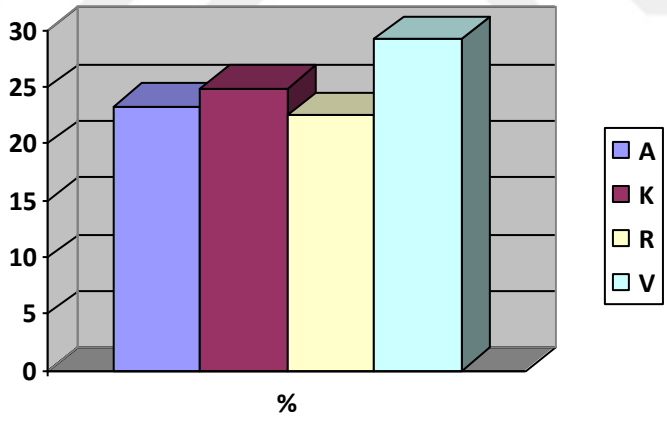
Graph 1: Percentage distributions of Question 1

Figure 9 shows that the majority of students with a percentage of 33,6 chose option 1, namely, Auditory for the first question which is about finding a place. The least preferred style is Reading/Writing category which means that students do not choose to write down any notes about directions when looking for a place.

Question 2: A website has a video showing how to make a special graph or chart. There is a person speaking, some lists and words describing what to do and some diagrams. I would learn most from:

	f	%
A	59	23,3
K	63	24,9
R	57	22,5
V	74	29,2
Total	253	100,0

Figure 10: Frequency and percentage distributions of Question 2



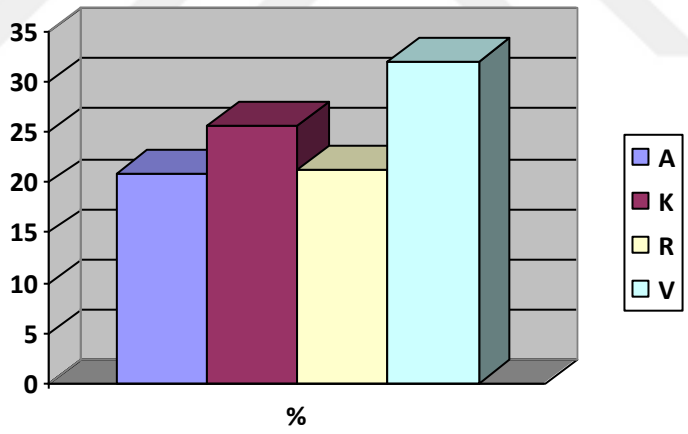
Graph 2: Percentage distributions of Question 2

Figure 10 shows that the majority of students with a percentage of 29,2 chose option 4 which is Visual for the second question which is about diagrams, graphics and charts. The least preferred style is Reading/Writing category which means that students do not choose to write down or read any notes about figures and tables when examining them.

Question 3: I want to find out more about a tour that I am going on. I would:

	f	%
A	53	20,9
K	65	25,6
R	54	21,3
V	81	32,0
Total	253	100,0

Figure 11: Frequency and percentage distributions of Question 3



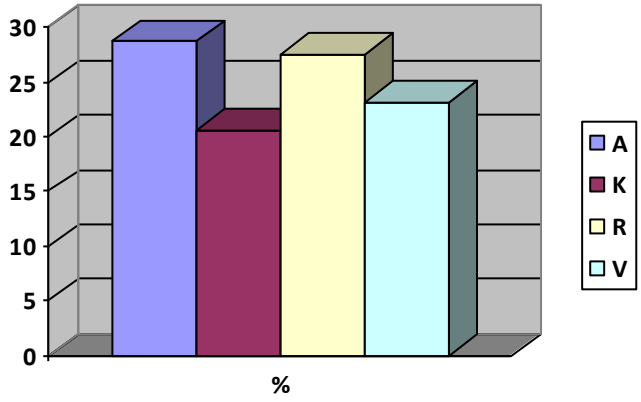
Graph 3: Percentage distributions of Question 3

Figure 11 displays that 32% of students prefer Visual style when making search about a tour. They choose to look at the maps instead of asking a friend which is the least preferred option or reading a brochure about the tour.

Question 4: When choosing a career or area of study, these are important for me:

	f	%
A	73	28,7
K	52	20,5
R	70	27,6
V	59	23,2
Total	254	100,0

Figure 12: Frequency and percentage distributions of Question 4



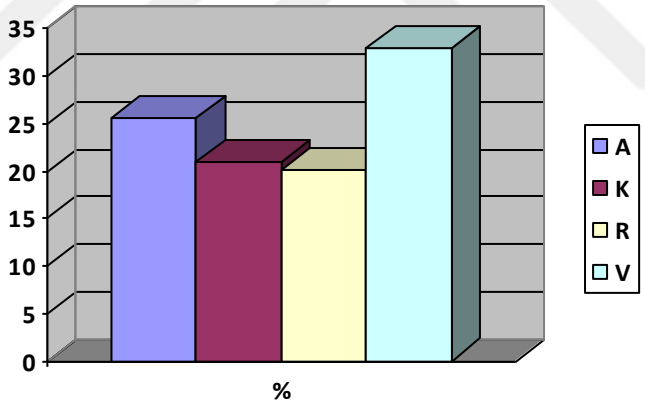
Graph 4: Percentage distributions of Question 4

Figure 12 indicates that when choosing a job or a field of study, students prefer to communicate with someone about it because the majority of them went for option 1 (Auditory). The least preferred style is Kinesthetic that includes applying their knowledge.

Question 5: When I am learning, I:

	f	%
A	66	25,7
K	54	21,0
R	52	20,2
V	85	33,0
Total	257	100,0

Figure 13: Frequency and percentage distributions of Question 5



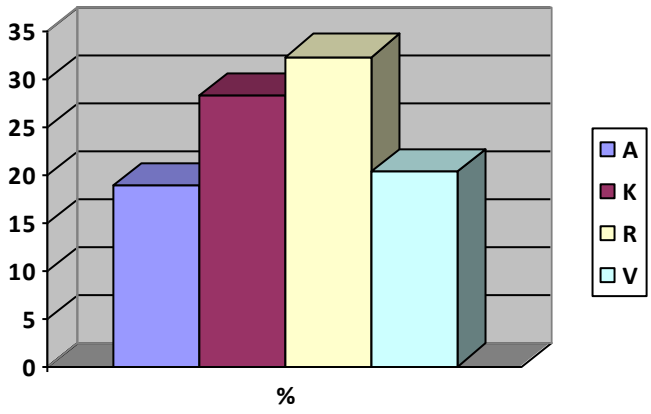
Graph 5: Percentage distributions of Question 5

According to Figure 13, most of students choose to read books or articles when they learn new information. In general, they do not prefer to see patterns or use examples.

Question 6: I want to save more money and to decide between a range of options. I would:

	f	%
A	51	18,9
K	76	28,3
R	87	32,3
V	55	20,4
Total	269	100,0

Figure 14: Frequency and percentage distributions of Question 6



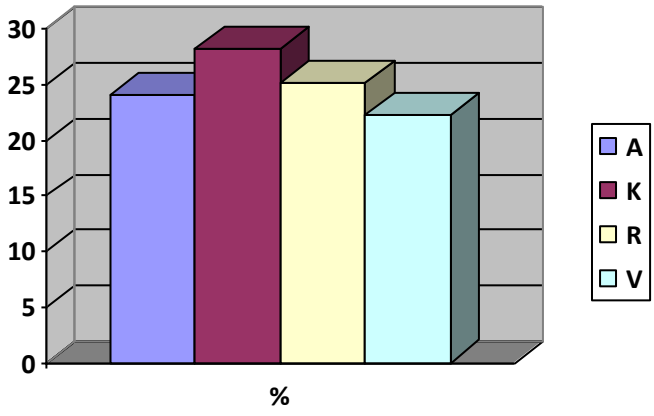
Graph 6: Percentage distributions of Question 6

Figure 14 shows that the majority of students opt for reading a brochure when deciding between options. The second most preferred style is Kinesthetic which indicates that students choose to design examples in which they prefer an option by using their background information about finance. However, students do not go for option 1 (Auditory) that means they do not want to talk with an expert. Rather, they rely on their financial knowledge.

Question 7: I want to learn how to play a new board game or card game. I would:

	f	%
A	64	24,1
K	75	28,3
R	67	25,2
V	59	22,3
Total	265	100,0

Figure 15: Frequency and percentage distributions of Question 7



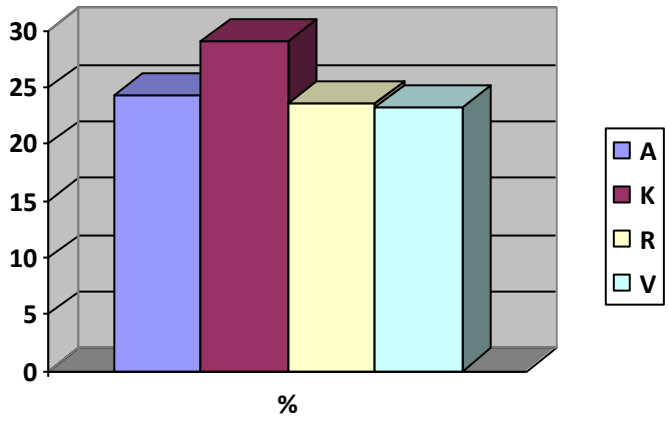
Graph 7: Percentage distributions of Question 7

According to Figure 15, the most of students with a percentage of 28,3 prefer to use Kinesthetic style when they learn a new game through which they watch others before they play it. However, it is obvious that they do not rely on their Visual skills because it is the least preferred style with a percentage of 22,3.

Question 8: I have a problem with my heart. I would prefer that the doctor:

	f	%
A	63	24,3
K	75	29,0
R	61	23,6
V	60	23,2
Total	259	100,0

Figure 16: Frequency and percentage distributions of Question 8



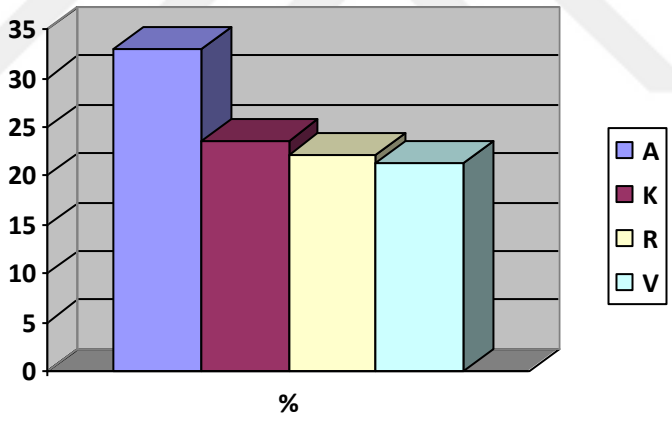
Graph 8: Percentage distributions of Question 8

Figure 16 indicates that the majority of students want a doctor to show them what is wrong with their heart on a plastic model, and it means that they prefer Kinesthetic style.

Question 9: I want to learn to do something new on a computer. I would:

	f	%
A	88	33,0
K	63	23,6
R	59	22,1
V	57	21,3
Total	267	100,0

Figure 17: Frequency and percentage distributions of Question 9



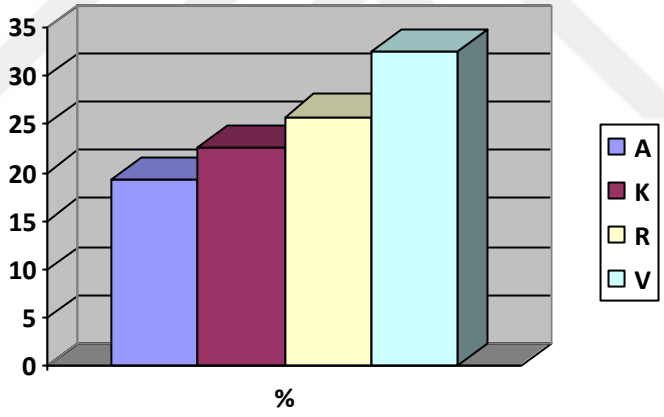
Graph 9: Percentage distributions of Question 9

Figure 17 shows that most students with a percentage of 33 prefer to communicate with someone to gather information about a computer program.

Question 10: When learning from the Internet I like:

	f	%
A	52	19,2
K	61	22,5
R	70	25,8
V	88	32,5
Total	271	100,0

Figure 18: Frequency and percentage distributions of Question 10



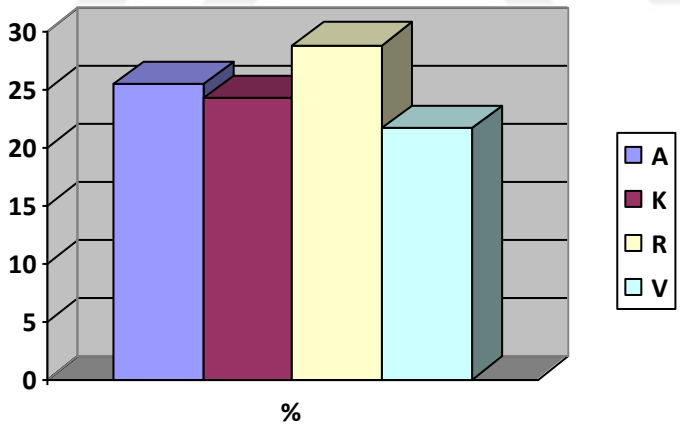
Graph 10: Percentage distributions of Question 10

Figure 18 displays that the majority of high school students prefer interesting design and visual features when they learn new information from the Internet.

Question 11: I want to learn about a new project. I would ask for:

	f	%
A	67	25,4
K	64	24,2
R	76	28,8
V	57	21,6
Total	264	100,0

Figure 19: Frequency and percentage distributions of Question 11



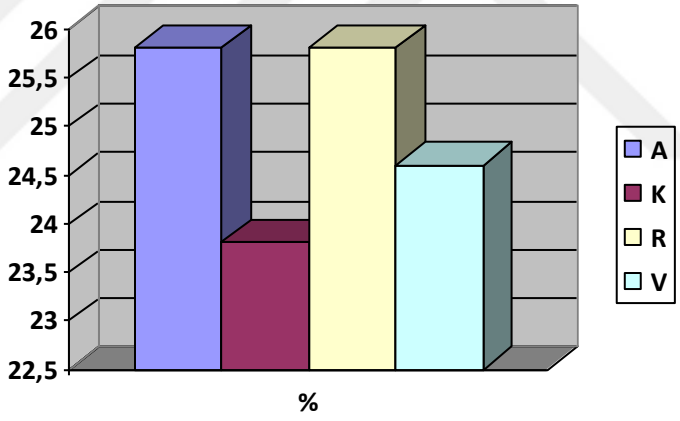
Graph 11: Percentage distributions of Question 11

According to Figure 19, most students prefer to read a written report to learn new information about a project.

Question 12: I want to learn how to take better photos. I would:

	f	%
A	66	25,8
K	61	23,8
R	66	25,8
V	63	24,6
Total	256	100,0

Figure 20: Frequency and percentage distributions of Question 12



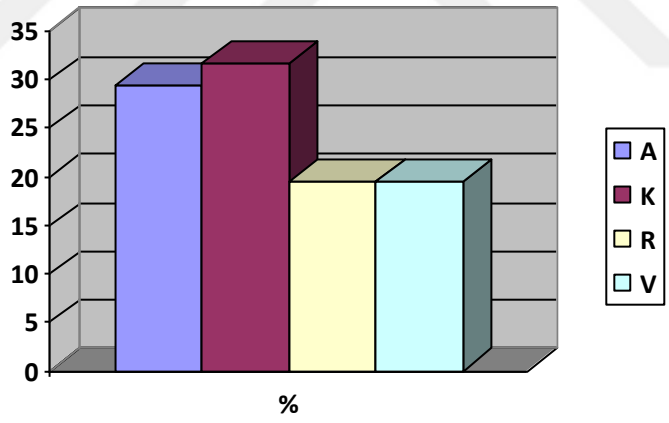
Graph 12: Percentage distributions of Question 12

Figure 20 indicates that students prefer to talk with experts and read instructions about taking good photos. With a rate of 66%, it can be seen that the two styles are equally preferred. However, Kinesthetic and Visual styles are not the least favorite because there are lots of students who choose these styles for the twelfth question.

Question 13: I prefer a presenter or a teacher who uses:

	f	%
A	75	29,3
K	81	31,6
R	50	19,5
V	50	19,5
Total	256	100,0

Figure 21: Frequency and percentage distributions of Question 13



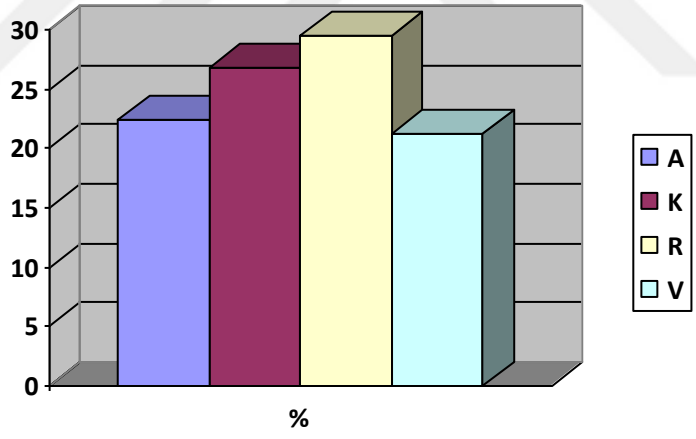
Graph 13: Percentage distributions of Question 13

According to Figure 21, students want their teachers to use demonstrations, models or practical sessions during classes because it can be seen that it is their favorite style. There are many students who prefer a teacher who covers the lectures through question and answer, talk, group discussion, or guest speakers. There are students who want handouts, books, or readings (Read/Write) diagrams, charts, maps or graphs (Visual) during lectures; however, the ratio of preference of these styles is small compared to others.

Question 14: I have finished a competition or test and I would like some feedback. I would like to have feedback:

	f	%
A	57	22,4
K	68	26,8
R	75	29,5
V	54	21,2
Total	254	100,0

Figure 22: Frequency and percentage distributions of Question 14



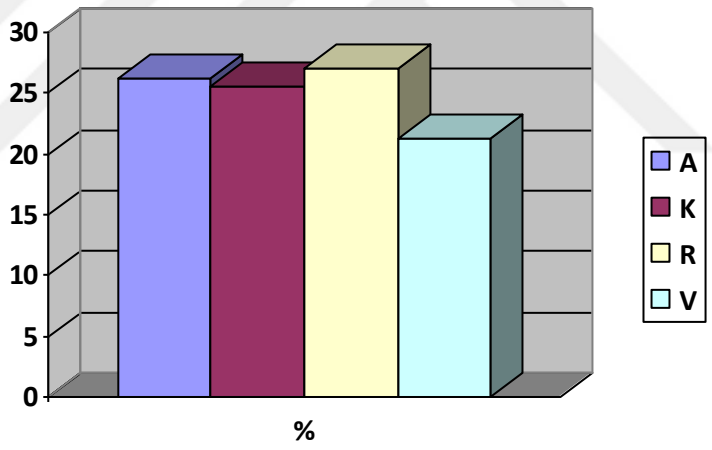
Graph 14: Percentage distributions of Question 14

Figure 22 displays that the majority of students want to get feedback in a written form. It is seen that the students with kinesthetic style who want to see an example about what they have done on a test have an undeniable majority.

Question 15: I want to find out about a house or an apartment. Before visiting it, I would want:

	f	%
A	68	26,2
K	66	25,5
R	70	27,0
V	55	21,2
Total	259	100,0

Figure 23: Frequency and percentage distributions of Question 15



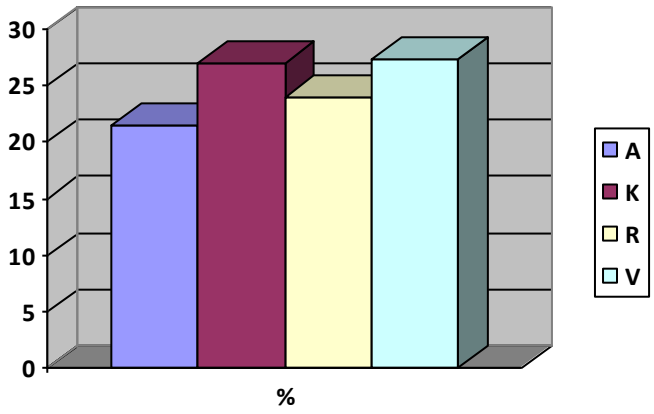
Graph 15: Percentage distributions of Question 15

According to Figure 23, most students prefer to see a printed description of the rooms and features of a house or an apartment before they visit it. The least preferred style is Visual which means students do not choose to see a plan showing the rooms and a map of the area.

Question 16: I want to assemble a wooden table that came in parts (kitset). I would learn best from:

	f	%
A	59	21,5
K	74	27,0
R	66	24,0
V	75	27,3
Total	274	100,0

Figure 24: Frequency and percentage distributions of Question 16

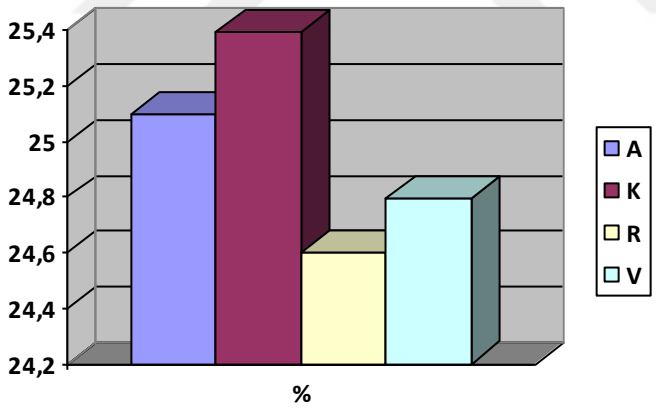


Graph 16: Percentage distributions of Question 16

According to Figure 24, students prefer to look at diagrams showing each step to be able to assemble a table in pieces with a percentage of 27,3. The number of students who have Kinesthetic style (%27) who want to get information about joining the pieces by watching a video comes second after those who prefer Visual style.

	f	%
A	1045	25,1
K	1057	25,4
R	1026	24,6
V	1033	24,8
Total	4161	100,0

Figure 25: Total frequency and percentage distributions of VARK Survey questions



Graph 17: Total Percentage distributions

According to Figure 25, there are no major differences between the students' overall style preferences. The percentage of students with Kinesthetic style is 25.4, while the percentage of students who prefer Auditory style is 25.1. The percentage of those who prefer Visual style is 24.8 and the percentage of those who prefer Read / Write style is 24.6. According to these results, it is seen that the most preferred style by the students is Kinesthetic style.

4.2.2. Relationship between gender and learning style preference

			Learning Style				
			Visual	Auditory	Read/Write	Kinesthetic	Total
Gender	Female	f	26	31	25	35	117
		%	22,2%	26,5%	21,4%	29,9%	100,0%
	Male	f	29	23	29	28	109
		%	26,6%	21,1%	26,6%	25,7%	100,0%
Total		f	55	54	54	63	226
		%	24,3%	23,9%	23,9%	27,9%	100,0%

Table 5: Relationship between gender and learning style preference

According to Table 5, 51.8% of the participants were female and 48.2% were male.

The most preferred learning style among female students was kinesthetic (29.9%) followed by auditory (26.5%), visual (22.2%), and read/write (21.4%).

The most preferred learning styles among male students were visual and read/write (26.6%) followed by kinesthetic (25.7%), and auditory (21.1%).

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2,142[a]	3	,543
Likelihood Ratio	2,146	3	,543
N of Valid Cases	226		

Table 6: Chi-Square Tests results of Relationship between gender and learning style preference

According to Chi-Square test results (Table 6) there is not statistically significant difference between gender groups in terms of learning styles (χ^2=,543).

4.2.3. Relationship between grade and learning style preference

			Learning Style				
			Visual	Auditory	Read/Write	Kinesthetic	Total
Grade	9.	f	14	13	13	23	63
		%	22,2%	20,6%	20,6%	36,5%	100,0%
	10.	f	14	15	13	13	55
		%	25,5%	27,3%	23,6%	23,6%	100,0%
	11.	f	11	16	16	13	56
		%	19,6%	28,6%	28,6%	23,2%	100,0%
	12.	f	16	10	12	14	52
		%	30,8%	19,2%	23,1%	26,9%	100,0%
Total		f	55	54	54	63	226
		%	24,3%	23,9%	23,9%	27,9%	100,0%

Table 7: Relationship between grade and learning style preference

According to Table 7, 27.9% of the participants were 9th grade, 24.3% were 10th grade, 24.7% were 11th grade and 23% were 12th grade students.

The most common learning style preference among 9th grade students was kinesthetic (36,5%), followed by visual (22,2%), auditory (20,6%) and read and write (20,6%). The most common learning style preference among 10th grade students was auditory (27,3%), followed by visual (25,5%), kinesthetic (23,6%) and read and write (23,6%). The most common learning style preferences among 11th grade students were aural and read and write (28,6%), followed by kinesthetic (23,2%), and visual (19,6%). The most common learning style preference among 12th grade students was visual (30,8%), followed by kinesthetic (26,9%), read and write (23,1%) and aural (19,2%).

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,365[a]	9	,703
Likelihood Ratio	6,219	9	,718
N of Valid Cases	226		

Table 8: Chi-Square Tests results of Relationship between grade and learning style preference

According to Chi-Square test results (Table 8) there is not statistically significant difference between grade levels in terms of learning styles (χ^2=,703).

4.2.4. Relationship between academic success and learning style preference

			Learning Style				
			Visual	Auditory	Read/Write	Kinesthetic	Total
Success	Low	f	17	18	23	18	76
		%	22,4%	23,7%	30,3%	23,7%	100,0%
	Medium	f	18	17	16	21	72
		%	25,0%	23,6%	22,2%	29,2%	100,0%
	High	f	20	19	15	24	78
		%	25,6%	24,4%	19,2%	30,8%	100,0%
Total		f	55	54	54	63	226
		%	24,3%	23,9%	23,9%	27,9%	100,0%

Table 9: Relationship between academic success and learning style preference

According to Table 9, 33.6% of the participants have low academic success, 31.8% have medium academic success, and 34.5% have high academic success.

The most common learning style preference among the students who have low academic success was read/write (30.3%), followed by auditory (23.7%), kinesthetic (23.7%) and visual (22,4%). The most common learning style preference among the students who have medium academic success was kinesthetic (29.2%), followed by visual (25%), auditory (23.6%) and read/write (22,2%). The most common learning style preference among the students who have high academic success was kinesthetic (30.8%), followed by visual (25.6%), auditory (24.4%) and read/write (19,2%).

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3,040[a]	6	,804
Likelihood Ratio	3,012	6	,807
N of Valid Cases	226		

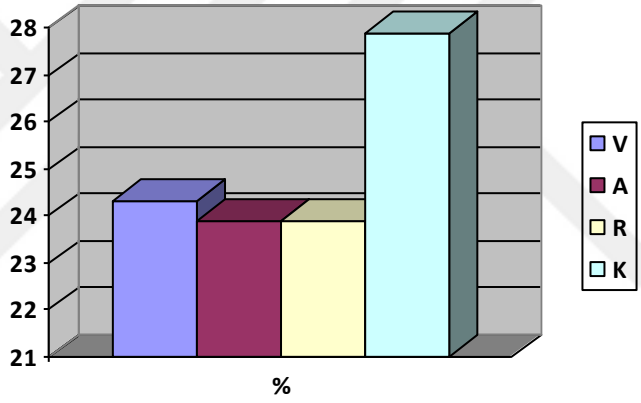
Table 10: Chi-Square Tests results of Relationship between academic success and learning style preference

According to Chi-Square test results (Table 10) there is not statistically significant difference between academic success levels in terms of learning styles (χ^2=,804).

4.2.5. Generally preferred learning style

	f	%
V	55	24,3
A	54	23,9
R	54	23,9
K	63	27,9
Total	226	100,0

Table 11: Generally preferred learning style



Graph 18: Percentage distributions of generally preferred learning style by students

Table 11 was formed as a result of coding the answers given by 226 students to 16 questions. Codes are V(isual), A(uditory), R(ead and write), and K(inesthetic). Students were able to select more than one option for each question. Learning styles of the students were determined according to which of the four styles they chose most frequently.

As can be seen in the table, the most preferred learning style of all participating students was kinesthetic (27.9%). The percent of the students who preferred visual learning style was 24.3%, while the percent of the students who prefer auditory and read-write learning styles is equal as 23.9%.

CHAPTER 5

DISCUSSIONS OF FINDINGS AND CONCLUSIONS

5.1. Discussions

In this section, discussions and comments about the findings about the styles preferred by the students were given.

5.1.1. Discussion and comments on the relationship between gender and learning style preference

In our study, the most preferred learning style by female students was found to be kinesthetic style with 29.9%. On the other hand, the most preferred learning style by male students was found to be visual and read / write styles with 26.6%. In our study, no significant correlation was found between learning styles and gender.

In a study by Radwan (2014) in which the relationship between gender and learning style preferences of students learning a foreign language was investigated, it was found that female students were significantly more communication oriented than male students.

In a study by Yemane et al. (2017) on the assessment of gender difference in learning style preference, no significant difference was found between gender and learning style although it was determined that visual learning style was the most preferred by female and male students.

In addition, another study examining whether the learning styles of the students showed a significant difference according to gender and class variables and the relationship between the learning styles of the students was not found any significant difference between gender and learning styles (Unal, Alkan, Ozdemir and Cakir, 2013).

In a study that aimed to examine the differences between male and female students by looking at different dimensions of learning style, it was revealed that female students adopted the communication-oriented learning style, that is, aural style more (Agarwal and Suraksha, 2017).

Previous research has reported that different style preferences between boys and girls may be due to biological differences. Lincoln stated that the smaller skeletal structure of men leads to difficulties in adapting to the auditory and visual demands of reading (Lincoln, 1927; cited in Shapiro, 1990, p. 241). However, in our study, it was

found that male students mostly preferred reading / writing and visual based learning styles.

In a study conducted by Gurian (2001), it was stated that female students were communication-oriented and therefore their verbal communication skills were more advanced. This shows that female students are more prone to auditory styles. In our study, it was determined that auditory style (26.5%) was the second most preferred style of female students after kinesthetic style. Some studies (Accordo et al., 1990; Bhatia et al., 1991; Kanbasyahi et al., 1994; Entwistle, 2002) indicated that male students need mobility because they cannot stay in place for a long time and therefore, they are categorized as kinesthetic learners.

Oxford's (1995) study of learning styles also showed differences between genders. In this study, it was found that male students were more prone to kinesthetic style. However, Oxford argued that it is not yet possible to determine whether there is a difference between the genders in the visual style, because the findings are still insufficient (1995). However, according to her, female students are more auditory than male students.

In a study conducted by Argut, Mustafaoglu, Kus, Razak Ozdincler (2017), it was revealed that the most preferred style of the students was kinesthetic, whereas male students preferred the kinesthetic style more than female students. The findings of the study are consistent with our research on the most preferred style.

In a study examining the differences in learning style between genders, it was found that female students were more inclined to a communication-based approach. This means that the female students participating in the research adopted the auditory style more. On the other hand, it was found out that male students adopted more visual approaches (Chen, Jonas and Xu, 2018).

A study by Halili, Naimie, Sira, AhmedAbuzaid and Leng (2014) showed that the majority of female students prefer an aural style that has participatory, collaborative and communicative characteristics, while male students are more avoiding students. Similarly, in our study, it was determined that male students preferred visual and reading / writing based learning styles that do not require much communication.

In a study conducted by Bahar and Sulun (2011), it was aimed to determine the learning styles and to examine whether there is a relationship between gender and learning style. However, according to the findings of the study, no relationship was found

between gender and learning style. Although our study found that boys and girls have different learning styles, the findings of Bahar and Sulun (2011) shows that male and female students have similar learning styles.

In a study analyzing the gender comparison of the factors affecting students' learning styles, it was found that gender was related to learning style preference (Hamidon, 2015). In a study conducted by Greb (1999), it was stated that men and women learned differently from each other. According to the findings of the study, men tend to be more kinesthetic, tactical and visual and need more mobility than women in an informal environment.

According to Park (1997), female students prefer kinesthetic learning style, whereas male students are more tactile than female students. On the other hand, Lincoln and Rademacher (2006) stated that female students prefer to learn using auditory senses. According to the results of the same research, male students stated that they learned best when taking notes, in other words, using reading / writing styles. Kia, Aliapour and Ghaderi (2009) showed that most male students prefer a verbal learning style. However, in the same study, it was stated that the majority of female students prefer verbal and visual learning. As a result, there is a difference between learning style preferences according to gender in these studies. Hlawaty (2008) supports these findings by saying "Female and male students show significantly different choices in their learning styles".

In a study conducted by Hickson and Baltimore (1996), the purpose of which was to investigate the differences in learning styles that could be a function of gender characteristics, it was found that the variable that appeared significantly different was visual style. Visual learning style, which is generally preferred by individuals who can read or remember their observations visually, was preferred by female students according to the findings of the research.

In a study conducted by Choudhary, Dullo and Tandon (2011), it was stated that male and female students preferred a mix of styles. According to the findings of the study, 92.98% of the men preferred that all of visual, auditory, reading / writing and kinesthetic styles be used by their teachers during a lecture.

In a study conducted by Escarlos Jr. and Escarlos (2018), no significant difference was found between male and female students in terms of learning style use, although most of the students were visual learners. The findings of the study concluded that female and male students have similar learning styles. Similarly, according to the results of a study

conducted by Suprihadi and Rokyahani (2016), no significant difference was found between students' gender and preferred learning style. However, it was stated that the majority of students prefer a mix of learning styles.

In a study conducted by Sarabi-Asiabar et al. (2015), it was aimed to determine the relationship between learning styles preferences and gender. According to the findings of the study, while the majority of female students preferred visual learning style, male students preferred reading / writing based learning style. Findings of male students are consistent with our research.

In a research conducted by Munir, Ahmad, Hussain and Ghani (2018) with the hypothesis that students learn in a unique way and follow different learning styles as a reflection of this expression, they found that male students used visual and auditory learning styles more than female students. In the studies conducted by Heffier (2001) and Wehrwein et al. (2007), similar differences were found in the learning styles of female and male students in terms of gender.

Jilardi-Damavandi, Mahyuddin, Elias, Daud, and Shabani (2011) did not find a relationship in terms of gender-style learning style preferences, similar to our study. However, Almigbal (2015) stated that male students preferred kinesthetic learning style while female students preferred visual and auditory learning styles.

In a study conducted by Dobson (2009) with 901 students, it was found that although the majority of female students and male students adopted the same learning style (visual), they generally preferred different learning styles. According to the results of the study, 46% of female students prefer visual learning style, while 49% of male students prefer visual learning style. Following the most preferred visual learning style, female students adopted auditory (27%), reading / writing (23%) and kinesthetic (4%) learning styles. It was determined that male students preferred reading / writing (29%), auditory (17%) and kinesthetic (5%) styles following the visual learning style that they preferred the most.

In previous studies, it was stated that women were developmentally inadequate when compared with men (Erikson, 1968; Kohlberg and Kramer, 1969; Piaget, 1932). In later research, the opposite view was proposed (Anderson, 1987; Gilligan, 1982; Magolda, 1989, 1992) and attention was drawn to the relationship between gender and learning styles (Mentkowski and Strait, 1983; Mentkowski, 1984; Magolda, 1992).

However, most studies on gender-related differences in learning styles are limited to small examples, and further research is needed because of conflicting findings.

5.1.2. Discussion and comments on the relationship between grade and learning style preference

In our study, 27.9% of the participants were 9, 24.3% were 10, 24.7% were 11 and 23% were 12th grade students. Kinesthetic (36.5%) was the most common learning style preference among ninth-grade students. In addition, the most common learning style preference among the tenth-grade students was found to be auditory (27.3%) and the most common learning style preferences among the eleventh-grade students were auditory and reading / writing (28.6%). Finally, the most common learning style choice among the twelfth-grade students was visual (30.8%). However, according to the results of the analysis, there was no statistically significant difference between the grades in terms of learning styles.

In a study conducted by Argut, Mustafaoglu, Kus and Ozdincler (2017) and aiming to ensure that students have knowledge about learning styles based on the view that each individual learns differently, it was found that there was no significant difference at classroom level despite the widespread use of kinesthetic styles.

In a study conducted by Karatas, Sir and Celikoz (2015), it was found that the differences between the departments and grade levels affected the learning styles of the students. Similar to the results of our study, in a study conducted by Tuna (2008), it was reported that classroom levels did not make a significant difference on learning style preferences.

Sywelem, Dahawy and Wang (2010) examined the relationship between grade level and learning style preferences and found that students in the last year of high school used more kinesthetic styles than the students in the first grade. However, in a study conducted by Isildar, Aktas and Kurgun (2016), it was found that the first-grade students preferred the kinesthetic learning style more than the fourth-grade students. On the other hand, in our study, no statistically significant difference was found between class level and learning style preferences. Yet, it was determined that the most common learning style of the students was kinesthetic.

Inal, Buyukyavuz and Tekin (2015) conducted a study to determine the relationship between students' gender and age and learning style preferences, and it was found that there was no significant relationship between grade level and learning styles.

In other words, there was no difference in learning style preferences among 9th, 10th, 11th and 12th grade high school students. The researchers suggest that this finding may be due to the close age gap between the subjects' ages. Because of the similar situation in our study, that is to say, the age of high school students is close to each other, no statistically significant difference could be found between class level and learning style preferences.

Raddon's study showed that there was a relationship between students' class levels and learning style preferences (2007). However, Cornu (1999), who examined the relationship between learning style, gender and age, found no significant relationship between learning styles and grade level.

In brief, the limited number of studies examining the effect of grade levels on learning preferences limited the results of our discussion. When the findings in the literature were compared with the findings of our study, it was observed that the researches could not reach a consensus on the relationship between the students' learning style preferences and grade levels. Therefore, more research is needed in order to obtain healthier, valid and reliable results.

5.1.3. Discussion and comments on the relationship between academic success and learning style preference

It was determined that 33.6% of the students who participated in our study had low academic achievement, 31.8% had medium academic achievement and 34.5% had high academic achievement. Among the students with low academic success, the most common learning style preference was found to be reading / writing (30.3%). It was determined that the most common learning style preference among students with moderate academic achievement was kinesthetic (29.2%). Finally, the most common learning style preference among students with high academic achievement was found to be kinesthetic (30.8%). In our study, no statistically significant difference was found between academic achievement levels in terms of learning styles.

There are studies examining the relationship between learning styles and academic achievement of students at primary, secondary and university levels (Kopsovich, 2001; Griggs and Dunn, 1984; Brown, 1978; Charkins et al., 1985). Kopsovich (2001) found a significant relationship between learning styles and academic achievement of students.

Gokalp (2013), who examined the relationship between students' learning styles and academic achievement, found a statistically significant difference between learning styles and academic achievement. In addition, Jilardi-Damavandi, Mahyuddin, Elias, Daud and Shabani (2011) examined the effect of learning styles on academic achievement and found a statistically significant difference in the academic achievement of students' learning styles. However, the results were not always consistent in this way. For example, in a study conducted by Gappi (2013), similar to our study, no significant relationship was found between students' academic achievement and learning style preferences.

According to the results of the study that Awang, Samad, Faiz, Roddin and Kankia (2017) conducted, there was no significant difference between the learning style and the academic success of the students. Similarly, Inal, Buyukyavuz and Tekin (2015) found no significant relationship between students' academic achievement and learning styles preferences.

There are other studies in the literature that have examined the relationship between learning styles and academic achievement. The findings of various studies examining the relationship between students' learning styles and various factors revealed a positive relationship between academic achievement and learning styles (Reid, 1987; Gencel, 2006; Tatarinceva, 2014). In a study conducted in previous years, Dunn (1984) found a significant relationship between learners' learning styles and academic achievement. Similarly, Brown (1994) reported a positive relationship between academic achievement and learning style preferences.

In a study conducted by Rhouma (2016), it was found that high- and low-level successful students showed similar preferences regarding visual and auditory learning styles. Angela and Rochford (2007), in a large study conducted with 2,597 students in a private school to investigate the relationship between learning styles and academic achievement, found that certain learning styles were positively associated with academic achievement. It was also revealed that learning style preferences differed according to the achievement level of the students.

Academic achievement has also been studied many times in foreign language research. A number of studies show a causal relationship between learning styles and academic achievement (Dunn & Price, 1980; Burns, Johnson & Gable, 1998). In these studies, it has been shown that the students who are highly successful have higher kinesthetic learning preferences than the other students.

As can be seen, besides the studies supporting our study in the literature, there are also studies that have obtained very different results. We have expressed a similar view in our discussion of gender and grade level. That is, further studies are needed to determine the relationship between learning styles and other factors.

5.1.4. General learning style preferences

The most preferred learning style of 9th, 10th, 11th and 12th grade high school students who participated in our study was found to be kinesthetic (27.9%).

Vaishnav (2013) found that students preferred kinesthetic style more than other styles in their research with 9th, 10th and 11th grade high school students. Furthermore, in a study conducted by Palabiyik (2014), the findings showed that kinesthetic learning style was the most preferred by students compared to other learning styles. These findings are consistent with our research results.

In the study conducted by Singh, Govil and Rani (2015), it was determined that students preferred visual learning style most and kinesthetic learning style less. This finding was found to be incompatible with our research results because the most preferred style in our study was kinesthetic (27.9%) and the second preferred style was visual (24.3%).

In a study conducted by Nasiri, Gharekhani and Ghasempour (2016), it was found that the majority of students (98%) preferred to use a mixture of learning styles instead of a single learning style. In addition, in our study, it was found that most of the students answered the questions more than once, in other words, they were more prone to the preference of multidimensional learning styles.

The findings of a study conducted by Khanum (2014) showed some learning styles preferred by most of the students. According to the results of the research, most of the students prefer kinesthetic learning style. The findings of this study are consistent with the findings of our study. On the other hand, a study conducted by Nagesh, Manjunath, Dharmaraj and Shrish (2016) found that although the majority of students prefer multimodal learning styles (%61), the majority of students who preferred a single learning style adopted kinesthetic learning style. Kharb, Samanta, Jindal and Singh (2013) found similar results in their research. The results of these studies are also consistent with the findings of our study. However, in a study conducted by Singh, Govil and Rani (2015), it was found that the most preferred learning style of the students was visual style (45.7%) and the least preferred style was kinesthetic style (15%).

5.2. Conclusions and Implications for Further Research and Solutions

In this part of our research, the results of our findings were generally stated, the opinions that can guide the future researches were made and recommendations were made.

5.2.1. Conclusions

In this study that was carried out to determine preferred learning styles by 226 high school students in 9th, 10th, 11th and 12th grade in a private school in terms of gender, grade and academic achievement;

- The most preferred learning style by female students was found to be kinesthetic style with 29.9%. On the other hand, the most preferred learning style by male students was found to be visual and read / write style with 26.6%.
- No significant relationship was found between learning styles and gender.
- 27.9% of the participants were 9, 24.3% were 10, 24.7% were 11 and 23% were 12th grade students. Kinesthetic (36.5%) was the most common learning style preference among ninth-grade students. In addition, the most common learning style preference among the tenth-grade students was found to be auditory (27.3%) and the most common learning style preferences among the eleventh-grade students were auditory and reading / writing (28.6%). Finally, the most common learning style choice among the twelfth-grade students was visual (30.8%).
- According to the results of the analysis, there was no statistically significant difference between the grades in terms of learning styles.
- It was determined that 33.6% of the students who participated in our study had low academic achievement, 31.8% had medium academic achievement and 34.5% had high academic achievement. Among the students with low academic success, the most common learning style preference was found to be reading / writing (30.3%). It was determined that the most common learning style preference among students with moderate academic achievement was kinesthetic (29.2%). Finally, the most common learning style preference among students with high academic achievement was found to be kinesthetic (30.8%).

- No statistically significant difference was found between academic achievement levels in terms of learning styles.
- The most preferred learning style of 9th, 10th, 11th and 12th grade high school students who participated in our study was found to be kinesthetic (27.9%).

5.2.2. Implications for Further Research and Solutions

- Most studies on the relationship between gender, class, and academic achievement and learning style preferences are limited to small populations and samples, and are not widely conducted, and further research is needed because of conflicting findings. Furthermore, Studies on second or foreign language acquisition are much less.
- The identification and interpretation of learning styles is important in providing important data about how students perceive, interact and react to the language learning environment (Griggs, 1991). Diagnosing students' learning styles can be an easy and effective process, because they can define their own learning styles and become more successful students, and learn a language more easily when a teaching style that matches their learning styles are implemented (Wilson-Hull, 2008).
- Knowing students' learning styles is an effective teaching tool because it can help teachers realize the incredibly diverse needs that students bring to class (Felder and Brent, 2005; Hall and Mosely, 2005; Sternberg, Grigorenko and Zhang, 2008; Williamson and Watson, 2007).
- Zapalska and Dabb (2002) state that understanding the learning styles of students improves the selection of the most appropriate teaching strategies for students to learn. Moreover, knowing the learning styles enables teachers to develop a variety of teaching methodologies in order to benefit all students in a language learning environment (Williamson and Watson, 2007).
- Knowing the learning styles of the students by the teachers can increase the participation and motivation levels of the students who learn a second or foreign language (Gokalp, 2013).
- In order to educate individuals who love researching, seek creative and innovative solutions to the problems they face, think critically and make a

difference in the organization or society in which they are located, it is necessary to ensure that the students participate in the teaching-learning process more effectively. In order to achieve this participation, the education system needs to be adapted to the different learning styles of the students. Learning style is the characteristics of individuals' tendencies or preferences for learning. According to this, learning style appears as the characteristics that direct the behaviors of individuals. For effective language learning, actions should be planned and carried out according to these features.

- Each individual is different. These differences lead to changes in students' preferences for learning and their responses to teaching styles. In other words, each individual's learning style differs from the others. In educational settings, instructors prepare appropriate teaching environments for students with different interests, abilities and learning styles. In this case, the instructors should pay attention to the individual differences of the students in the teaching process, see the teaching and assessment processes as a whole, ensure the active participation of the students and cooperate with the students in order to individualize the teaching.
- There are differences in learning methods as well as understanding, thinking and analysis methods. In addition to the need for teachers to recognize the learning style of their students, the student should also have sufficient and correct information about their own learning styles. In this way, students will be able to use the learning process in the most efficient way. It is very important for students to have knowledge about their learning styles and to shape their work accordingly in order to realize learning effectively and efficiently.

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APPENDICES

APPENDIX 1:

STUDENT INFORMATION SHEET

1) İsim _____

2) Soy isim_____

3) Sınıf _____

4) Ev telefonu _____

5) Acil durumda aranacak kişi ve telefonu _____

6) Doğum yılı _____

7) Veli ya da vasi _____ İlişkisi _____

8) Veli ya da vasi _____ İlişkisi _____

9) Veli ya da vasi telefonu _____

10) Veli ya da vasi e-posta adresi: _____

11) Ev adresi _____

12) Şehir _____

13) Önceki akademik yıldaki genel not ortalamanız (GNO) nedir? _____

APPENDIX 2:
RESEARCH CONSENT FORM (STUDENT COPY)

Name of Researcher(s) / Araştırmacı(lar)nın Adı
Title of study / Araştırma Başlığı
Investigation of learning style preferences of high school students in terms of gender, classroom and academic success / Lise öğrencilerinin öğrenme stili tercihlerinin cinsiyet, sınıf ve akademik başarı açısından incelenmesi

Lütfen bu formu dikkatlice okuyunuz ve doldurunuz. Bu çalışmaya katılmaya istekli iseniz, uygun cevapları yazınız ve belgeyi imzalayıp tarih atınız. Daha fazla bilgi edinmek istiyorsanız, lütfen araştırmacıya danışınız.

- Araştırmanın bana araştırmacı tarafından sözlü ve / veya yazılı olarak tatmin edici bir şekilde açıklanmasını sağladım. **EVET/HAYIR**
- Araştırmanın 16 soru ve 4 seçenek içeren çoktan seçmeli bir formdan oluştuğunu biliyorum. **EVET/HAYIR**
- Herhangi bir zamanda bir açıklama yapmak zorunda kalmadan bu çalışmadan çekilebileceğimi anlıyorum. **EVET/HAYIR**
- Hakkımdaki tüm bilgilerin kesinlikle gizli tutulacağını ve bu çalışmadan kaynaklanan hiçbir yazılı çalışmada isimlendirilmeyeceğimi biliyorum. **EVET/HAYIR**
- Bu araştırmanın ilerlemesinin Ufuk Üniversitesi'ndeki diğer araştırmacılarla tartışılacağını biliyorum. **EVET/HAYIR**

Bu çalışmaya katılmak istiyorum ve bilgilerimin araştırmada kullanılması için onay veriyorum.

İmza: ……..…….

Tarih: …….

APPENDIX 3:
RESEARCH CONSENT FORM (PARENT COPY)

Name of Researcher(s) / Araştırmacı(lar)nın Adı
Title of study / Araştırma Başlığı
Investigation of learning style preferences of high school students in terms of gender, classroom and academic success / Lise öğrencilerinin öğrenme stili tercihlerinin cinsiyet, sınıf ve akademik başarı açısından incelenmesi

Lütfen bu formu dikkatlice okuyunuz ve doldurunuz. Çocuğunuzun bu çalışmaya katılmasını onaylıyorsanız, belgeyi imzalayıp tarih atınız. Daha fazla bilgi edinmek istiyorsanız, lütfen araştırmacıya danışınız.

• Araştırmanın bana araştırmacı tarafından sözlü ve / veya yazılı olarak tatmin edici bir şekilde açıklanmasını sağladım.	**EVET/HAYIR**
• Araştırmanın 16 soru ve 4 seçenek içeren çoktan seçmeli bir formdan oluştuğunu biliyorum.	**EVET/HAYIR**
• Çocuğumun herhangi bir zamanda bir açıklama yapmak zorunda kalmadan bu çalışmadan çekilebileceğini anlıyorum.	**EVET/HAYIR**
• Çocuğum hakkındaki tüm bilgilerin kesinlikle gizli tutulacağını ve bu çalışmadan kaynaklanan hiçbir yazılı çalışmada isimlendirilmeyeceğini biliyorum.	**EVET/HAYIR**
• Bu araştırmanın ilerlemesinin Ufuk Üniversitesi'ndeki diğer araştırmacılarla tartışılacağını biliyorum.	**EVET/HAYIR**

Velisi olduğum ……..'ın bu çalışmaya katılmasını istiyorum ve bilgilerinin araştırmada kullanılması için onay veriyorum.

İmza: ……..…….

Tarih: …….

APPENDIX 4:

THE VARK QUESTIONARRIE (VERSION 8.01)

visual * aural * read/write * kinesthetic

VARK®

a guide to learning styles

How Do I Learn Best?

Choose the answer which best explains your preference and circle the letter(s) next to it.

Please **circle more than one** if a single answer does not match your perception.

Leave blank any question that does not apply.

1. I need to find the way to a shop that a friend has recommended. I would:
    a. find out where the shop is in relation to somewhere I know.
    b. ask my friend to tell me the directions.
    c. write down the street directions I need to remember.
    d. use a map.
2. A website has a video showing how to make a special graph or chart. There is a person speaking, some lists and words describing what to do and some diagrams. I would learn most from:
    a. seeing the diagrams.
    b. listening.
    c. reading the words.
    d. watching the actions.
3. I want to find out more about a tour that I am going on. I would:
    a. look at details about the highlights and activities on the tour.
    b. use a map and see where the places are.
    c. read about the tour on the itinerary.
    d. talk with the person who planned the tour or others who are going on the tour.
4. When choosing a career or area of study, these are important for me:
    a. Applying my knowledge in real situations.
    b. Communicating with others through discussion.
    c. Working with designs, maps or charts.
    d. Using words well in written communications.

5. When I am learning I:
    a. like to talk things through.
    b. see patterns in things.
    c. use examples and applications.
    d. read books, articles and handouts.
6. I want to save more money and to decide between a range of options. I would:
    a. consider examples of each option using my financial information.
    b. read a print brochure that describes the options in detail.
    c. use graphs showing different options for different time periods.
    d. talk with an expert about the options.
7. I want to learn how to play a new board game or card game. I would:
    a. watch others play the game before joining in.
    b. listen to somebody explaining it and ask questions.
    c. use the diagrams that explain the various stages, moves and strategies in the game.
    d. read the instructions.
8. I have a problem with my heart. I would prefer that the doctor:
    a. gave me something to read to explain what was wrong.
    b. used a plastic model to show me what was wrong.
    c. described what was wrong.
    d. showed me a diagram of what was wrong.
9. I want to learn to do something new on a computer. I would:
    a. read the written instructions that came with the program.
    b. talk with people who know about the program.
    c. start using it and learn by trial and error.
    d. follow the diagrams in a book.
10. When learning from the Internet I like:
    a. videos showing how to do or make things.
    b. interesting design and visual features.
    c. interesting written descriptions, lists and explanations.
    d. audio channels where I can listen to podcasts or interviews.
11. I want to learn about a new project. I would ask for:
    a. diagrams to show the project stages with charts of benefits and costs.
    b. a written report describing the main features of the project.
    c. an opportunity to discuss the project.
    d. examples where the project has been used successfully.

12. I want to learn how to take better photos. I would:
    a. ask questions and talk about the camera and its features.
    b. use the written instructions about what to do.
    c. use diagrams showing the camera and what each part does.
    d. use examples of good and poor photos showing how to improve them.
13. I prefer a presenter or a teacher who uses:
    a. demonstrations, models or practical sessions.
    b. question and answer, talk, group discussion, or guest speakers.
    c. handouts, books, or readings.
    d. diagrams, charts, maps or graphs.
14. I have finished a competition or test and I would like some feedback. I would like to have feedback:
    a. using examples from what I have done.
    b. using a written description of my results.
    c. from somebody who talks it through with me.
    d. using graphs showing what I achieved.
15. I want to find out about a house or an apartment. Before visiting it I would want:
    a. to view a video of the property.
    b. a discussion with the owner.
    c. a printed description of the rooms and features.
    d. a plan showing the rooms and a map of the area.
16. I want to assemble a wooden table that came in parts (kitset). I would learn best from:
    a. diagrams showing each stage of the assembly.
    b. advice from someone who has done it before.
    c. written instructions that came with the parts for the table.
    d. watching a video of a person assembling a similar table.

APPENDIX 5:

INSTRUCTIONS FOR THE ADMINISTRATION OF VARK LEARNING STYLE PREFERENCE QUESTIONNAIRE

1) The VARK Questionnaire – Scoring Chart

Use the following scoring chart to find the VARK category that each of your answers corresponds to. Circle the letters that correspond to your answers. e.g. If you answered b and c for question 3, circle V and R in the question 3 row:

Question	a category	b category	c category	d category
3	K	V	R	A

2) Scoring Chart

Question	a category	b category	c category	d category
1	K	A	R	V
2	V	A	R	K
3	K	V	R	A
4	K	A	V	R
5	A	V	K	R
6	K	R	V	A
7	K	A	V	R
8	R	K	A	V
9	R	A	K	V
10	K	V	R	A
11	V	R	A	K
12	A	R	V	K
13	K	A	R	V
14	K	R	A	V
15	K	A	R	V
16	V	A	R	K

3) Calculating Your Scores

Count the number of each of the VARK letters you have circled.

Total number of Vs **circled =**	
Total number of As **circled =**	
Total number of Rs **circled =**	
Total number of Ks **circled =**	

ÖZGEÇMİŞ

Kişisel Bilgiler

Adı Soyadı:	Serap Ari
Doğum Yeri ve Tarihi:	Salihli-1986

Eğitim Durumu

Lisans Öğrenimi:	Gazi Üniversitesi
Yüksek Lisans Öğrenimi:	Ufuk Üniversitesi İngiliz Dili Eğitimi
Bildiği Yabancı Diller:	İngilizce İtalyanca

İş Deneyimi

Çalıştığı Kurumlar:	Doğa Koleji

İletişim

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Tarih:	28.08.2019